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NRCS

Natural
Resources
Conservation
Service

In cooperation with the
Regents of the University
of California and the United
States Department of the
Interior, Fish and Wildlife
Service

Soil Survey of Butte Area, California, Parts of Butte and Plumas Counties



How To Use This Soil Survey

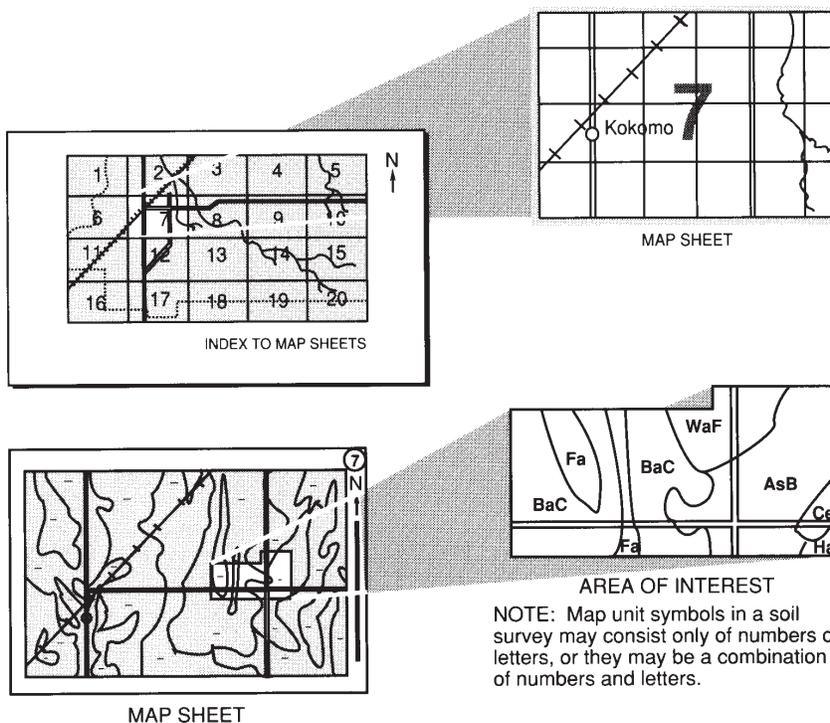
General Soil Map

The general soil map shows the survey area divided into groups of associated soils called general soil map units. This map is useful in planning the use and management of large areas. To find information about your area of interest, locate that area on the map, identify the name of the map unit in the area on the color-coded map legend, then refer to the section **General Soil Map Units** for a general description of the soils in your area.

Detailed Soil Maps

The detailed soil maps can be useful in planning the use and management of small areas. To find information about your area of interest, locate that area on the **Index to Map Sheets**. Note the number of the map sheet and turn to that sheet. Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Turn to the **Contents**, which lists the map units by symbol and name and shows the page where each map unit is described.

The **Contents** shows which table has data on a specific land use for each detailed soil map unit. Also see the **Contents** for sections of this publication that may address your specific needs.



National Cooperative Soil Survey

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey. This survey was made cooperatively by the Natural Resources Conservation Service; the Regents of the University of California; and the United States Department of the Interior, Fish and Wildlife Service. The survey is part of the technical assistance furnished to the Butte County, Feather River, and Vina Resource Conservation Districts.

Major fieldwork for this survey was completed in 2001. Soil names and descriptions were approved in 2005. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 2001. The most current information is available through the NRCS Soil Data Mart Web site or the NRCS Web Soil Survey. The Soil Data Mart is the data storage site for the official soil survey information.

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Caption for Cover Photo

Big Chico Creek Canyon in the vicinity of Upper Bidwell park. At the right in the foreground is rock outcrop composed of Tuscan mudflow breccia. In the center, Big Chico Creek has cut through an exposure of Lovejoy basalt and created a narrow slot canyon.

Additional information about the Nation's natural resources is available online from the Natural Resources Conservation Service at <http://www.nrcs.usda.gov>.

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Foreword

Soil surveys contain information that affects land use planning in survey areas. They include predictions of soil behavior for selected land uses. The surveys highlight soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

Soil surveys are designed for many different users. Farmers, ranchers, foresters, and agronomists can use the surveys to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the surveys to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the surveys to help them understand, protect, and enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. Broad areas of soils are shown on the general soil map. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described, and information on specific uses is given. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

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Soil Survey of Butte Area, California, Parts of Butte and Plumas Counties

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United States Department of Agriculture, Natural Resources Conservation Service, in cooperation with Regents of the University of California and the United States Department of the Interior, Fish and Wildlife Service

This soil survey updates the "Reconnaissance Soil Survey of the Sacramento Valley, California" (USDA, 1915); the "Soil Survey of the Chico Area, California," (USDA, 1929); the "Soil Survey of the Oroville Area, California" (USDA, 1930); the "Report for General Soil Map, Butte County, California" (USDA, 1967); and the "Soil-Vegetation Survey" maps and reports published from 1974 through 1981 (California Division of Forestry and Fire Protection). It provides additional coverage and information and has larger maps, which show the soils in greater detail.

The survey area includes parts of Butte and Plumas Counties (fig. 1). It has a total of 930,752 acres, or about 1,454 square miles. It is bordered on the north by Tehama County, on the west by Glenn County, on the southwest by Colusa and Sutter Counties, on the southeast by Yuba County and the Plumas National Forest, and on the northeast by the Lassen National Forest.

General Nature of the Survey Area

This section gives general information about the survey area. It describes physiography, relief, and drainage; history and development; and climate.



Figure 1.—Location of the survey area in California.

Physiography, Relief, and Drainage

The Butte area is within the Great Valley, Sierra Nevada, and Southern Cascades geomorphic provinces. The survey area consists of several physiographic units. These units are the Sacramento Valley, in the western part of the survey area; the Southern Cascade and Sierra Nevada foothills, in the central part; and the Southern Cascade and Sierra Nevada Mountains, in the eastern part.

The *Sacramento Valley* is nearly level and is made up of several distinct landforms. These are the flood plains along the Sacramento and Feather Rivers, basins, alluvial fans, and terraces. Within the survey area, the Sacramento Valley is approximately 10 to 20 miles wide and about 44 miles long. Elevation ranges from 55 feet in the Butte Sink to 495 feet on the terraces east of Oroville. Slow-moving creeks originating in the eastern mountains flow in a southwesterly or southerly direction through the Sacramento Valley and terminate at either the Sacramento River or the Feather River. Generally, there is little runoff throughout the area because slopes are nearly level. Flood plains naturally have bar-and-channel topography because of alternating periods of sediment deposition and removal by floodwater. Most areas have been leveled for agricultural production because of the excellent soil properties on the flood plains. All areas of the alluvial sediment that builds up to form the flood plains are internally drained. Floodwaters pass over the top of the flood plains. When the water level in the main channel recedes, the water on the flood plains drains readily in most areas. The Butte Basin naturally was internally drained, but it is now artificially drained by canals and ditches that serve to provide both drainage and irrigation for rice production. The alluvial fans are depositional landforms with very deep, well drained soils that allow water to readily percolate downward through the profile; therefore, runoff is negligible. Because of manipulation of creeks for flood control and irrigation supply, most creeks presently flow through the alluvial fans in one well defined channel. Little sediment is deposited on the adjacent surface. The alluvial terraces are nearly level to hilly and have mound-swale microtopography. The soils are underlain by

either a duripan or densic material; therefore, drainage is restricted and the soils are seasonally saturated. Runoff can be very high.

The *Southern Cascade foothills* are very distinctive as compared with the Sierra Nevada foothills. Though not officially recognized at the major land resource area (MLRA) level as a separate part of the foothills, the Southern Cascade foothills have a quite different topography. The Southern Cascade foothills in the survey area consist of a repeating pattern of nearly level to moderately sloping ridges interrupted by moderately sloping to very steep canyon slopes and canyon bottoms. Elevation ranges from 160 to 2,595 feet. This landscape is about 8 to 12 miles wide and about 24 miles long and has ridges and canyons trending towards the southwest. The ridges consist mainly of mudflow breccia, volcanic sandstone, and volcanic conglomerate making up the Tuscan Formation and originating from Mount Yana (Lydon, 1968). Cohasset Ridge is the one exception. It consists of Cohasset basalt. Canyons are the result of downcutting of the Tuscan Formation by streams over the last million years. From north to south, the main ridges are Keefer, Cohasset, Musty Buck, Doemill, Coon, McKay, Perkins, and Morgan and the main canyons are Sheephollow, Cabin Hollow, Nance, Nugen, Hamlin, Hayes, Berry, Cory, and Horsethief. The Southern Cascade foothills are drained by numerous creeks, including Pine, Rock, Mud, Sycamore, Big Chico, Little Chico, Butte, Little Butte, Little Dry, Clear, and Dry Creeks.

The *Sierra Nevada foothills* are south of the Southern Cascade foothills. The survey area includes the most northerly portion of the Sierra Nevada foothills, which extend south for approximately 360 miles. The landscape occurs at the west-side toe of the fault-block Sierra Nevada Mountain Range and consists of gently sloping to very steep, dissected hills and some deeply dissected river canyons. This landscape is approximately 6 to 16 miles wide and 18 miles long within the survey area. Elevation ranges from about 245 to 2,600 feet.

Local geology has the greatest influence on the topography and determines the trend of slopes and drainage. Table Mountain is made up of Lovejoy basalt and occurs as a gently sloping, slightly tilted basalt plateau with a relatively flat top interrupted by nearly vertical cliffs and canyons on the west side. The canyons formed during times of much greater precipitation. Water flowing across the basalt plateau reached the edge, cascaded over the cliff, and cut into soft sediments of the Lone Formation. The lone sediment was washed away from underneath the basalt, which eventually became unsupported and tumbled below. The plateau is cutting slowly backward, forming the canyon. In the area that is on the green schist portion of the Smartville Formation (Shiffman and Wagner, 1992), ridges are oriented from north to slightly southeast. Areas on the Bald Rock and Swedesflat plutons tend to have little overall orientation and are dissected in nearly every direction.

Most of the streams flow from the east towards the southwest. The waters of Lake Oroville hide the deeply dissected canyons of the North, Middle, and South Forks of the Feather River. The natural river bottom lies approximately 600 feet below the water at Oroville Dam when the lake is at full capacity.

The *Southern Cascade Mountains* are generally north of the Sierra Nevada Mountains. Volcanic flows have flowed over the top of, or buried, the Sierra Nevada Mountains. The survey area includes the most southerly extension of the Southern Cascade Mountains, which extend north about 150 miles and terminate near the California-Oregon border. The Southern Cascade Mountains consist of gently sloping to strongly sloping ridges interrupted by moderately steep to very steep canyon side slopes and narrow canyon bottoms. Slopes in the canyons are generally complex, and slopes on the ridgetops tend to appear smooth to rolling when observed from a distance. This landscape is about 14 to 20 miles wide and about 4 to 10 miles long. Elevation ranges from about 1,200 to 5,700 feet. Ridges and canyons are oriented from the north to the southwest. From north to south, the main ridges are Cohasset, Musty Buck, Doemill, Portuguese Point, Carpenter, Nimshew, and Paradise. The

bedrock in this area includes Pliocene-age volcanic rocks, such as mudflow breccia, andesite, and some basalt. The area is drained by Big Chico, Little Chico, and Butte Creeks and their tributaries.

The *Sierra Nevada Mountains* are south of the Southern Cascade Mountains and include the most northerly portion of the Sierra Nevada Mountain Range. The rest of the range extends south for about 340 miles. The survey area occurs entirely on the west slope, which is characterized by a system of ridges and associated canyons and some mountain valleys. This mountainous relief has complex slopes, ranging from gently sloping ridgetops to very steep slopes that commonly exceed 70 percent in canyons. The Sierra Nevada is considered a fault-block mountain range, which means that when tectonic or fault activity takes place, the entire range moves as one block. This kind of movement is the explanation for the long, gently sloping west slope and the abrupt escarpment of the east slope. The landscape is about 16 to 18 miles wide and about 36 miles long. Elevation ranges from about 1,400 to 6,100 feet within the survey area. Because of high amounts of precipitation, much of it occurring as snow, runoff is high. Many tributary creeks drain the area, and most flow quickly downstream to become major rivers, such as the West Branch and North, Middle, and South Forks of the Feather River. The watershed that is drained is huge, and most of the water is captured in Lake Oroville and used by the State Water Project, which provides water for both domestic and agricultural uses for much of the State.

The bedrock of the Sierra Nevada is quite variable and includes intrusive igneous rocks, such as quartz diorite, diorite, and gabbro on plutons; metamorphic rocks, such as metasediments, green schist, conglomerate, and various metavolcanic rocks; and extrusive igneous rocks, such as basalt, andesite, and mudflows on ridgetops. At the highest elevations, glacial till is made up of both intrusive and extrusive igneous rocks.

History and Development

Prepared by Robert E. Colby, Historian, Magalia, California.

Archaeological evidence indicates that some 13,000 years ago people were living in what became California. Apparently, the Northeastern Maidu were among these earliest residents. These early people seldom traveled more than a few miles from where they were born because they had all the essentials for their way of life close at hand.

Butte County now covers the traditional lands the Konkow, commonly known as Maidu, Northwestern Maidu, or Konkow Maidu. Various villages made for a rich diversity of tribes speaking many different dialects and having diverse lifestyles, material cultures, social customs, and political organizations. For millennia, the indigenous people in this area used the wide array of the county's flora and fauna as sources of food, medicine, basketry, weapons, tools, games, shelter, and ceremonial items, generating a long-term history with the land. This enduring connection between the Maidu and plants not only conserved plant populations but also preserved desirable characteristics of individual plants. The people managed plant mosaics on a large scale, to attract wild game, to minimize potential catastrophic fires, and to provide a diversity of food crops. Maidu descendants from these villages still gather in and tend wild areas in Butte County, adhering to ancient rules and techniques that allow resource use while keeping the resource base intact.

As Euro-American settlers multiplied, forces of change grew steadily and affected all aspects of the traditional indigenous culture and lifestyle. Many individuals were forced to move into the new non-Indian settlements, and the population of the indigenous people plummeted through disease, genocide, starvation, and warfare. In spite of their losses, the indigenous people have maintained their distinct ethnic identity and have taken steps in the political, economic, and social rebuilding and

restoration of the original people of the region. Given the great obstacles the people have had to face, the continuance of the Maidu traditions is remarkable.

In 1808, Gabriel Moraga and Spanish soldiers were the first Europeans to see the buttes rising from the valley floor for which the county would later be named. In 1820, Louis G. Arguello, exploring for the Governor of Spanish California, arrived in the Oroville area, where he named the Rio de Las Plumas, or Feather, River. He chose this name because of the quantity of wildfowl feathers floating on the surface.

Apparently, the first Americans to arrive in the survey area were Jedediah Smith and a party of trappers in 1827 and 1828. They trapped as far north as Butte and Chico Creeks before heading on into Oregon. In 1829, trappers from the American Fur Company and the Hudson's Bay Company apparently reached this area from the north as far as the Sutter Buttes.

In 1843, John Bidwell, who became Butte County's most notable resident, traveled throughout the area while in the employ of John Sutter. Bidwell was so taken by what he saw around Chico Creek that he mapped the various streams and canyons. In 1849 and 1850, he purchased part of a Spanish Land Grant called the "Rancho Arroyo del Chico," over 22,000 acres along Chico Creek. By 1847, Bidwell had established an extensive farm. In 1860, he founded the town of Chico on his property. By 1844, Sam Neal, another Butte County pioneer, had received the Esquon Land Grant, along Butte Creek, from the Mexican Government of California.

John Bidwell is credited as being the first to find gold on the banks of the Feather River, near what would become the town of Hamilton. This discovery occurred in 1848, and Bidwell followed the river upstream to what became Bidwell's Bar. He made his fortune at this location and began the Gold Rush in what would be called the Northern Mines. He used part of the gold he mined to purchase the Chico ranch. Shortly after Bidwell's strike, there were numerous gold camps along the branches of the river, and flour soon cost \$800 a barrel.

Butte County was one of the original 27 California counties formed in 1850. It originally extended from the Sacramento River to the California-Nevada border and was about four times larger than the approximate 1,700 square miles it is today. In the middle of the 1850s, all of Plumas County was carved out of Butte County and other parts were given to Tehama, Lassen, Colusa, and Sutter Counties. Ironically, the Sutter Buttes, for which Butte County is named, are no longer in the county.

By the early 1850s, the Gold Rush for the individual miner was mostly over. All the "easy pickin's" were gone, and most miners had to find work with operations that had the financing to mine on a large scale. Most of the early gold camps were gone. Some resurrected themselves, as did the 1849 camp of Ophir, which was incorporated as Oroville in 1856. In the election of 1850, Bidwell's Bar became the county seat. There was an acrimonious debate about the county seat with the town of Hamilton and then for decades between Oroville and Chico. In 1853, the "Butte Record," the county's first newspaper, was published at Bidwell's Bar.

Gold mining put Butte County on the map. On February 18, 1898, the "Chico Record" stated that between 1848 and 1898 "more than \$200,000,000 (in gold) have been taken out of Butte County's placer gravel and quartz mines." It is estimated that as much as 10 million dollars worth of gold was recovered in 1848 alone. The 54-pound Dogtown nugget was the most notable find in 1859. Dogtown-Magalia was one of the most prolific placer and drift mining areas in the State. Forbestown and Concow were hard rock mining areas. Butte Creek was mainly placer deposits. It was eventually dredged. Bidwell's Bar and most of the Feather River, including Ophir-Oroville, were known for placer deposits. Although diamonds were found in its gold-bearing gravel, Cherokee was most famous as a hydraulic mine.

A very efficient way to mine gold on a large scale, hydraulic mining started about 1858. Farmlands were inundated by the "slickins" (debris), and navigation on rivers as big as the Sacramento was impaired. This form of mining was so strictly regulated by

1883 that it virtually disappeared. Butte County had numerous hydraulic mines, the most notable being the Cherokee mine. Starting in 1870, the Spring Valley Mining Company constructed a vast network of ditches and flumes, one 30 miles long, to bring water to the 18 monitors that shot water 400 feet into gold-bearing gravel, washing debris into 3 miles of sluice boxes from which the gold was picked. Four million gallons of water were used each day. Ditches to carry water to the mines were nothing new in the county. The county had 167 miles of ditches by 1861 and 400 miles by 1877. Many of the ditches would be used later to carry water for agriculture and hydroelectric power generation. In 1877, the first crude gold dredge was used in the Feather River. By the early 1900s, this was the dominant method of mining on the rivers and creeks in the county.

The Chinese came to Butte County during the Gold Rush, approximately 10,000 coming to Oroville alone. As elsewhere within the gold fields of California, they proved to be diligent miners, more so than many of the other miners. Many later worked on the various trans-Sierra railroads.

As mines and early towns appeared in 1849, so did a crude system of roads. By 1851, there were established routes used by stages, teamsters, and the ordinary citizens. One of the earliest roads was the Beckwourth Trail, which came from the California-Nevada border through the American Valley and over the Sierra Nevada to Bidwell's Bar. Highway 162 follows the general route today. In 1855, local citizens built Bidwell's Bar Bridge over the Middle Fork of the Feather River. Shipped around the Horn in pieces, this was the first suspension bridge in California. Ironically, the bridge was built about the time that Bidwell's Bar declined and mining, as well as the newspaper, moved downstream to Ophir-Oroville. Streets were laid out in Chico in 1860, and the Marysville-Shasta Stage Road established scheduled travel between central and northern California and Oregon. Shallow-draft steamboats traveled the Sacramento River by 1862, making stops in Butte County. The Humboldt Road was opened from Chico to mines in Nevada and Idaho in 1865. In 1870, the California and Oregon Railroad reached Chico from the north and continued south to Marysville and beyond. The California Northern Railroad came northward from Marysville to Oroville. In 1906, the Western Pacific Railroad started construction of a rail line through the canyon of the North Fork of the Feather River, and passenger service began in 1910. Construction on the Feather River Highway through the canyon started in 1928, and the road was opened in 1937.

Except for the larger land grants in the valley that raised wheat, hay, and cattle, agriculture was of limited importance until the 1860s. It was found, though, that the soils of the county supported many of the crops that grow in California, including grains of all kinds, citrus fruits, olives, almonds, grapes, berries, melons, sugar beets, hops, and flax. The adobe soils around Nelson produced large amounts of wheat and other grains, and from 1850 to 1870, this area was a major producer of grains. An olive orchard was planted in the 1870s near Wyandotte, and the number of orchards increased in the Oroville area through the 1890s. The olive industry really did not "blossom" until Mrs. Freda Ehmann moved to Oroville in 1893. Starting with 20 acres of olive trees near Marysville, she built an olive growing and canning business in Oroville that shipped her olives throughout California, the nation, and the world.

The citrus industry began in the middle of the 1850s. The famous Mother Orange Tree was planted next to Bidwell's Bar Bridge in 1856-57. Contrary to local folklore, this tree did not produce the first orange grown in California and may have been of only minor importance in the eventual growth of the orange industry in the county. In 1884, the Thermolito Citrus Colony was started on 10,000 acres west of Oroville. It was irrigated by water from the Miocene Canal, a mining ditch dating back to 1875. Oranges from the Oroville area were the first citrus shipped from California. Rice became an important crop in 1918.

By the 1950s, agriculture had become the county's principal source of income. Oranges, rice, apples, peaches, olives, figs, grapes, almonds, honey, and vegetables from truck farms were the primary products. The earliest residents of the foothill ridges had their vegetable gardens and a few pear, peach, and apple trees. These fruits were not grown for sale, however, until the 1880s. Eventually, hundreds of acres were devoted to raising them, especially apples. By the late 1960s, the apple business was in decline because of changing markets and the rapid growth of year-round sources in Washington and Oregon.

The late 1890s saw the beginning of hydroelectric power generation with the formation of several local power and light companies. By 1900, several powerhouses on local creeks were supplying power to Butte County residents and to such distant cities as San Francisco. In 1905, the Pacific Gas & Electric Company was formed with the Butte County system, which then served much of central California. The Butte County system became a major part of the new company. In 1908, Great Western Power built the Big Bend powerhouse, which was a foundation for a system of hydroelectric power plants on the North Fork of the Feather River. It eventually became part of the Pacific Gas & Electric Company. The last project of any significance was construction of the Oroville Dam, which, at 770 feet, is the highest earthen dam in the United States. Construction was completed in 1967. Hydroelectric power generation really was of secondary importance, as the 3.5 million acre feet of water impounded in Lake Oroville were critical to the State Water Project, which supplied areas as far away as southern California.

In 1908, the county led California in gold production. By 1900, however, the lumber industry was rapidly becoming more important. During the Gold Rush, numerous small sawmills cut so much lumber for mining and for building the numerous camps and small towns that the surrounding hills were denuded of trees. As early as 1860, 13 sawmills produced more than 14 million board feet of pine lumber. Numerous companies supplied lumber in the 1870s, 1880s, and 1890s. In 1901, the eastern-based Diamond Match Company bought 69,000 acres of prime timber land (later increased to 300,000 acres) in Butte, Plumas, and Tehama Counties. In 1902, it built a sawmill and a company town named Stirling City. By 1906, it had built the Butte County Railroad, which connected the mill with the company's match factory in Chico. By the time it ceased logging operations in 1958, the sawmill had produced 1,809,000,000 board feet of lumber. The other large lumber producer, the Swayne Lumber Company, was located in the Feather Falls area.

Climate

Prepared by the National Water and Climate Center, Natural Resources Conservation Service, Portland, Oregon.

Table 1 gives data on temperature and precipitation for the survey area as recorded at Oroville (elevation of 170 feet), the Chico Experiment Station (elevation of 190 feet), Paradise (elevation of 1,750 feet), De Sabla (elevation of 2,710 feet), and Strawberry Valley (elevation of 3,810 feet) for the period 1971 to 2000. The Strawberry Valley station is located just outside the survey area, in Yuba County. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on the length of the growing season.

During winter at elevations below 1,500 feet, the average temperature is 46.5 degrees F and the average daily minimum temperature is 36.2 degrees. The lowest temperature on record, which occurred at the Chico Experiment Station on December 11, 1932, is 11 degrees. In summer, the average temperature is 75.4 degrees and the average daily maximum temperature is 91.9 degrees. The highest temperature, which occurred at the Chico Experiment Station on July 15, 1972, is 117 degrees.

During winter at elevations above 1,500 feet, the average temperature is 39.8 degrees F and the average daily minimum temperature is 29.8 degrees. The lowest temperature on record, which occurred at Strawberry Valley on December 21, 1990, is 4 degrees. In summer, the average temperature is 64.8 degrees and the average daily maximum temperature is 80.4 degrees. The highest temperature, which occurred at Strawberry Valley on September 4, 1955, is 103 degrees.

Growing degree days are shown in table 1. They are equivalent to "heat units." During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (50 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

At elevations below 1,500 feet, the average annual precipitation is 25.69 inches, as represented by the Chico Experiment Station gauge. Of this, about 12.42 inches, or 48 percent, usually falls in the period March through November. The growing season for most crops falls within this period. The heaviest 1-day rainfall on record is 5.73 inches. It occurred at the Chico Experiment Station on January 3, 1916. Thunderstorms occur on about 4.7 days each year, and most occur in March.

At elevations above 1,500 feet, the representative average annual total precipitation is more than 50 inches. The highest annual total, at Strawberry Valley, is 80.98 inches. Of the 80.98 inches, about 10.98 inches, or nearly 14 percent, usually falls in the period May through October and is very representative of the precipitation at elevations above 1,500 feet. The growing season for most crops falls within this period. The heaviest 1-day rainfall on record is 1.75 inches. It occurred at Strawberry Valley on January 31, 1963.

The seasonal snowfall ranges from 0.2 inch at the Chico Experiment Station (elevation of 190 feet) to 96.6 inches at Strawberry Valley (elevation 3,810 of feet). Paradise represents a transition between the low and high elevations in the survey area. It has an average annual snowfall of about 2.8 inches. The maximum snowfall at Paradise, 17.5 inches, occurred on January 29, 1975. The greatest snow depth at any one time on record is 100 inches. It occurred on January 17, 1952, at Strawberry Valley. On the average at Strawberry Valley, 50 days per year have at least 1 inch of snow on the ground. The heaviest 1-day snowfall on record was 39 inches. It occurred on January 30, 1968. Spring snowmelt from the snowpack at the higher elevations in the survey area is very important to irrigation in spring and summer.

The average relative humidity in midafternoon is about 45 percent. Humidity is higher at night, and the average at dawn is about 83 percent. The sun shines 96 percent of the time possible in summer and 48 percent in winter. The prevailing wind is from the south-southwest. Average windspeed is highest, 9.5 miles per hour, in June.

The climate data the sections "General Soil Map Units," "Detailed Soil Map Units," and "Classification of the Soils" are from data and maps prepared by Jim Goodridge, Climatologist, Chico, California. The maps were used exclusively to determine the ranges of precipitation, mean annual air temperature, and frost-free days assigned to detailed map units and to taxonomic units. Figure 2 is a map of mean annual precipitation, figure 3 is a map of mean annual air temperature, and figure 4 is a map of frost-free days.

How This Survey Was Made

This survey was made to provide information about the soils and miscellaneous areas in the survey area. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness and shape of the slopes, the general pattern of drainage, the kinds of crops and native plants, and the kinds of bedrock. They dug many holes to study the soil profile, which is the

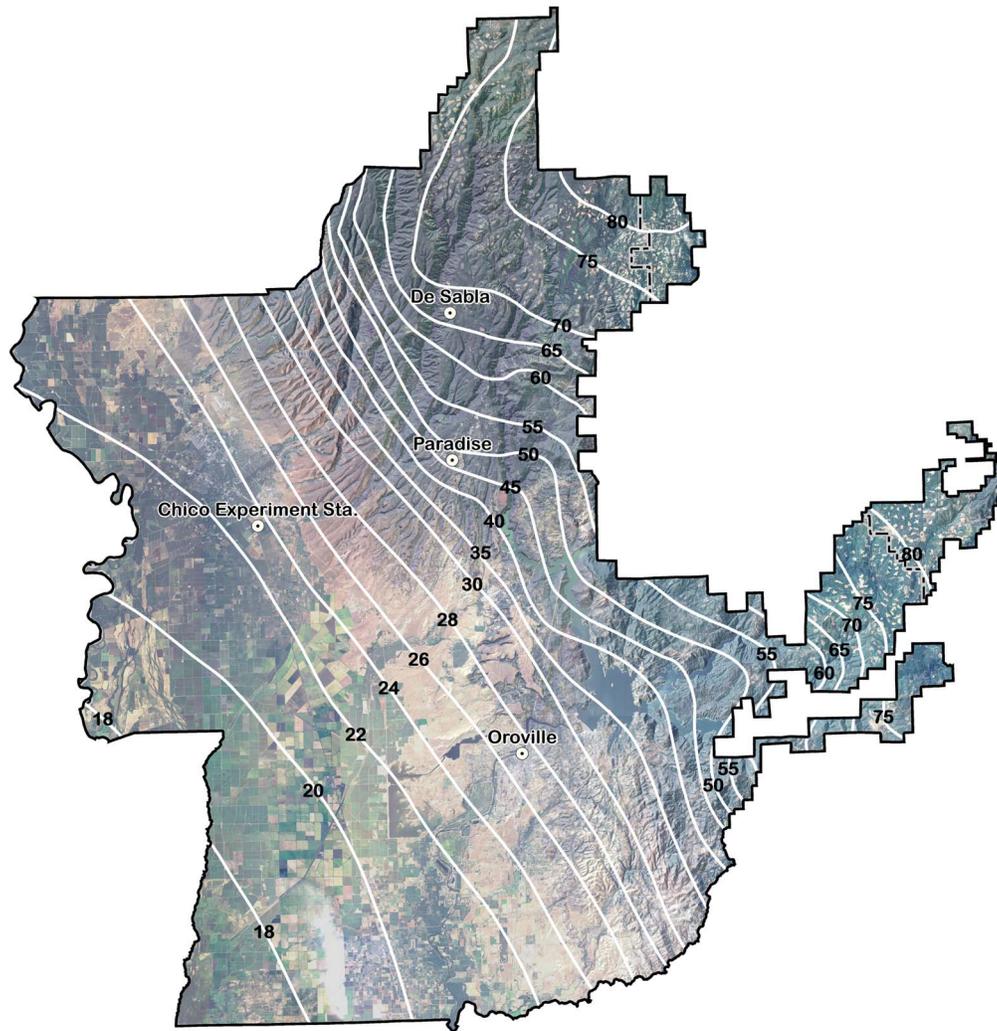


Figure 2.—Mean annual precipitation in inches (based on the 30-year period from 1951 to 1980).

sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil may have formed. The unconsolidated material is devoid of roots and other living organisms and has been minimally changed by other biological activity.

The soils and miscellaneous areas in the survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept or model of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an

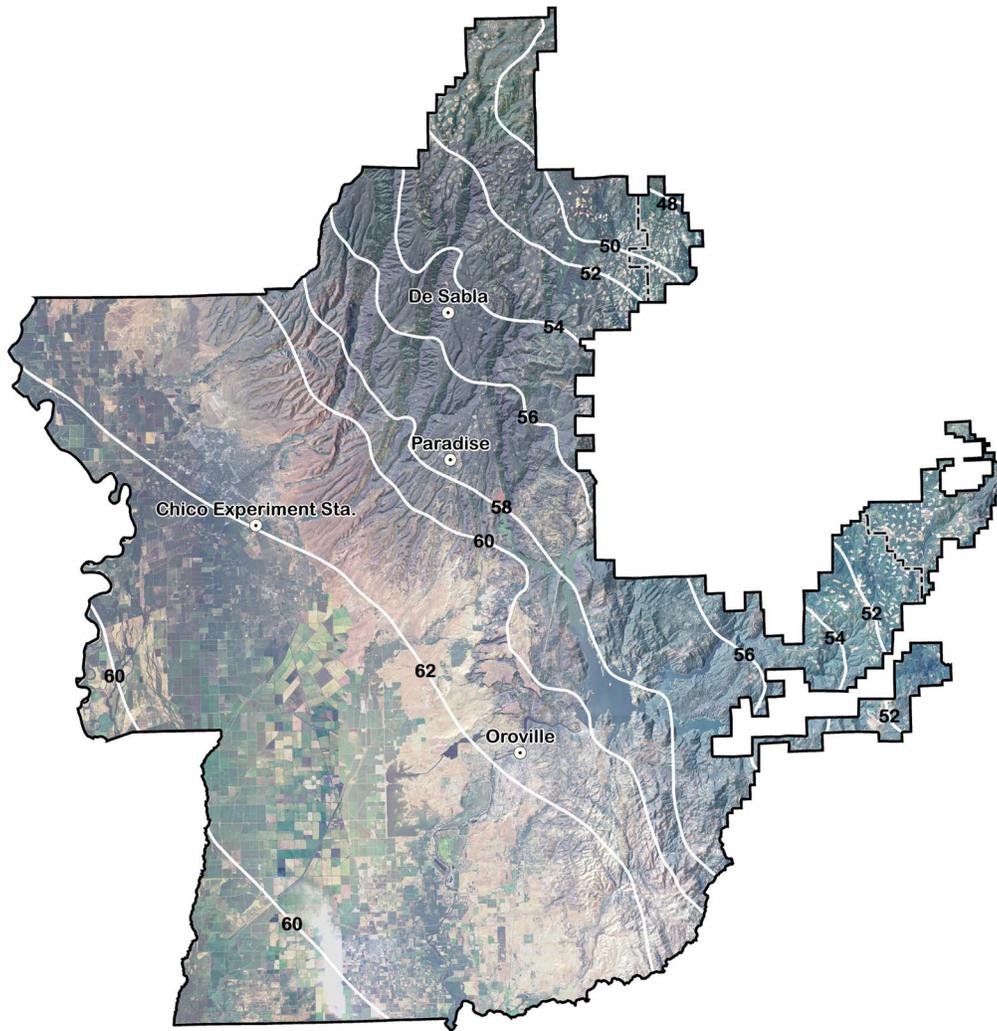


Figure 3.—Mean annual air temperature in degrees F.

understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret

the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

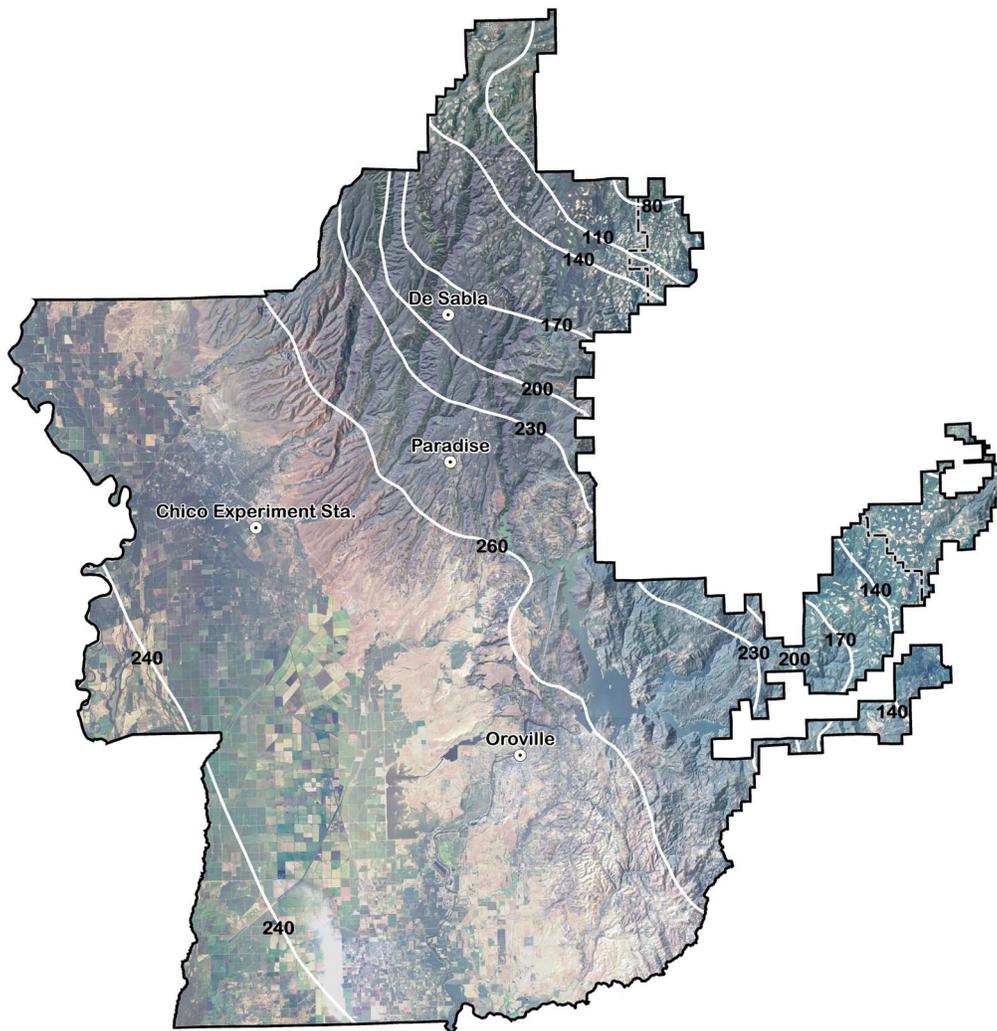


Figure 4.—Frost-free days (above 32 degrees F).

This survey area was mapped at two levels of detail. At the more detailed level, map units are narrowly defined. Map unit boundaries were plotted and verified at closely spaced intervals. At the less detailed level, map units are broadly defined. Boundaries were plotted and verified at wider intervals. The detail of mapping was selected to meet the anticipated long-term use of the survey, and the map units were designed to meet the needs for that use. The soils in the part of the survey area in the Sacramento Valley were mapped at the more detailed level. The soils in the foothills and mountains were mapped at the less detailed level.

The descriptions, names, and delineations of the soils in this survey area do not fully agree with those in the adjacent survey areas. They do not fully agree with those in the surveys of Glenn County, California, and Tehama County, California, mainly because the fieldwork for the adjacent surveys was conducted at a different time. They do not fully agree with those in the resource surveys of the Lassen National Forest and the Plumas National Forest because mapping of these forests was conducted for a different purpose and was completed at a less detailed level. Differences also result from a better knowledge of soils, variations in technical standards and terminology, modifications in series concepts, or variations in the intensity of mapping or in the extent of the soils in the survey areas.

General Soil Map Units

The general soil map in this publication shows broad areas that have a distinctive pattern of soils, relief, and drainage. Each map unit on the general soil map is a unique natural landscape. Typically, it consists of one or more major soils or miscellaneous areas and some minor soils or miscellaneous areas. It is named for the major soils or miscellaneous areas. The components of one map unit can occur in another but in a different pattern.

The general soil map can be used to compare the suitability of large areas for general land uses. Areas of suitable soils can be identified on the map. Likewise, areas where the soils are not suitable can be identified.

Because of its small scale, the map is not suitable for planning the management of a farm or field or for selecting a site for a road or building or other structure. The soils in any one map unit differ from place to place in slope, depth, drainage, and other characteristics that affect management.

Thermic Soils on Flood Plains in the Sacramento Valley

1. Parrott-Gianella-Farwell

Very deep, nearly level, moderately well drained soils that formed in Sacramento River alluvium; on flood plains

Setting

Landscape: Sacramento Valley

Slope range: 0 to 2 percent

Typical vegetation: Walnut and almond orchards, valley oak, Fremont cottonwood, and coyotebrush

Composition

Extent of the map unit: 3.7 percent

Extent of the components in the map unit:

Parrott—34 percent

Gianella—27 percent

Farwell—9 percent

Minor components—30 percent

Soil Properties

Parrott

Depth class: Very deep

Drainage class: Moderately well drained

Geomorphic position: Bars on flood plains outside the meander belt

Parent material: Silty alluvium derived from mixed rock sources

Particle-size class: Fine-silty

Soil temperature regime: Thermic

Slope: 0 to 2 percent

Gianella

Depth class: Very deep

Drainage class: Moderately well drained

Geomorphic position: Bars on flood plains inside the meander belt

Parent material: Sandy alluvium derived from mixed rock sources

Particle-size class: Coarse-loamy

Soil temperature regime: Thermic

Slope: 0 to 1 percent

Farwell

Depth class: Very deep

Drainage class: Moderately well drained

Geomorphic position: Outer edge of flood plains

Parent material: Loamy alluvium derived from mixed rock sources

Particle-size class: Fine-loamy

Soil temperature regime: Thermic

Slope: 0 to 1 percent

Minor Components

- Columbia and Columbia taxadjunct soils in channels inside the meander belt on flood plains
- Vermet soils in channels outside the meander belt on flood plains
- Riverwash on gravel bars along the river channel

Use and Management

Major uses: Orchard crops, wildlife habitat, and watershed

Management concerns: Flooding

2. Xerorthents, Tailings-Gianella

Very deep, nearly level to steep, moderately well drained to somewhat excessively drained soils that formed in Feather River and Butte Creek alluvium; on flood plains and stream terraces

Setting

Landscape: Sacramento Valley

Slope range: 0 to 50 percent

Typical vegetation: Valley oak, Fremont cottonwood, sycamore, willow, and walnut orchards

Composition

Extent of the map unit: 2 percent

Extent of the components in the map unit:

Xerorthents, tailings—48 percent

Gianella—35 percent

Minor components—17 percent

Soil Properties

Xerorthents, tailings

Depth class: Very deep

Drainage class: Moderately well drained to somewhat excessively drained

Geomorphic position: Dredger tailings on flood plains and stream terraces

Parent material: Cobbly, gravelly, and sandy alluvium derived from mixed rock sources

Particle-size class: Sandy and sandy-skeletal

Soil temperature regime: Thermic

Slope: 0 to 50 percent

Gianella

Depth class: Very deep

Drainage class: Moderately well drained

Geomorphic position: Flood plains

Parent material: Sandy alluvium derived from mixed rock sources

Particle-size class: Coarse-loamy

Soil temperature regime: Thermic

Slope: 0 to 1 percent

Minor Components

- Urban land in the city of Oroville
- Columbia soils on flood plains
- Riverwash on gravel bars along river and stream channels

Use and Management

Major uses: Wildlife habitat, recreation, orchard crops, and watershed

Management concerns: Flooding and a high content of rock fragments

Thermic Soils in Flood Basins in the Sacramento Valley

3. Lofgren-Blavo

Deep and moderately deep, nearly level, poorly drained soils that formed in alluvium; in flood basins

Setting

Landscape: Sacramento Valley (fig. 5)

Slope range: 0 to 1 percent

Typical vegetation: Rice, *Carex*, spikerush, swampgrass, willow, and cottonwood; valley oak in areas adjacent to Butte Creek

Composition

Extent of the map unit: 4.9 percent

Extent of the components in the map unit:

Lofgren—43 percent

Blavo—39 percent

Minor components—18 percent

Soil Properties

Lofgren

Depth class: Deep

Drainage class: Poorly drained

Geomorphic position: Central flood basins

Parent material: Clayey alluvium over cemented alluvium derived from mixed rock sources

Particle-size class: Very-fine

Soil temperature regime: Thermic

Slope: 0 to 1 percent



Figure 5.—A freshly tilled rice field in a flood basin in an area of Lofgren and Blavo soils. This landform is typical of general soil map units 3 through 6. The town of Richvale is in the background.

Blavo

Depth class: Moderately deep

Drainage class: Poorly drained

Geomorphic position: Central flood basins

Parent material: Clayey alluvium over cemented alluvium derived from mixed rock sources

Particle-size class: Very-fine

Soil temperature regime: Thermic

Slope: 0 to 1 percent

Minor Components

- Oxyaquic Xerofluvents clay in flood basins
- Clear Lake soils in flood basins

Use and Management

Major uses: Grain crops, hunting, wildlife habitat, and watershed

Management concerns: Flooding, ponding, wetness, and a high content of clay

4. Esquon-Neerdobe

Deep and moderately deep, nearly level, poorly drained soils that formed in alluvium; in flood basins

Setting

Landscape: Sacramento Valley (fig. 5)

Slope range: 0 to 1 percent

Typical vegetation: Rice, Italian ryegrass, curly dock, and spikerush

Composition

Extent of the map unit: 8.6 percent

Extent of the components in the map unit:

Esquon—46 percent

Neerdobe—23 percent

Minor components—31 percent

Soil Properties

Esquon

Depth class: Deep

Drainage class: Poorly drained

Geomorphic position: Outer flood basins

Parent material: Clayey alluvium over cemented alluvium derived from mixed rock sources

Particle-size class: Fine

Soil temperature regime: Thermic

Slope: 0 to 1 percent

Neerdobe

Depth class: Moderately deep

Drainage class: Poorly drained

Geomorphic position: Outer flood basins

Parent material: Clayey alluvium over cemented alluvium derived from mixed rock sources

Particle-size class: Fine

Soil temperature regime: Thermic

Slope: 0 to 1 percent

Minor Components

- Edjobe soils on basin rims
- Dodgeland and Whitecabin soils in flood basins

Use and Management

Major uses: Grain crops, hunting, wildlife habitat, and watershed

Management concerns: Ponding, wetness, and a high content of clay

5. Bosquejo-Galt

Very deep and moderately deep, nearly level, somewhat poorly drained and poorly drained soils that formed in alluvium; in flood basins

Setting

Landscape: Sacramento Valley (fig. 5)

Slope range: 0 to 1 percent

Typical vegetation: Safflower; wheat; alfalfa; sugar beet, prune, and almond orchards; and annual grasses and forbs

Composition

Extent of the map unit: 1.2 percent

Extent of the components in the map unit:

Bosquejo—74 percent

Galt—11 percent

Minor components—15 percent

Soil Properties

Bosquejo

Depth class: Very deep

Drainage class: Somewhat poorly drained

Geomorphic position: Interfan basins

Parent material: Clayey alluvium derived from volcanic rocks

Particle-size class: Fine

Soil temperature regime: Thermic

Slope: 0 to 1 percent

Galt

Depth class: Moderately deep

Drainage class: Poorly drained

Geomorphic position: Interfan basins over low terrace remnants

Parent material: Clayey alluvium over cemented alluvium derived from volcanic rocks

Particle-size class: Fine

Soil temperature regime: Thermic

Slope: 0 to 1 percent

Minor Components

- Bosquejo silt loam, overwash, on margins between flood basins and flood plains

Use and Management

Major uses: Row crops, orchard crops, and watershed

Management concerns: Wetness, ponding, a high content of clay, and depth to a duripan

6. Gridley Taxadjunct-Subaco Taxadjunct

Moderately deep, nearly level, somewhat poorly drained and poorly drained soils that formed in alluvium; on low terraces and in flood basins

Setting

Landscape: Sacramento Valley (fig. 5)

Slope range: 0 to 2 percent

Typical vegetation: Pasture grasses, rice, and willows

Composition

Extent of the map unit: 2.8 percent

Extent of the components in the map unit:

Gridley taxadjunct—52 percent

Subaco taxadjunct—25 percent

Minor components—23 percent

Soil Properties

Gridley taxadjunct

Depth class: Moderately deep

Drainage class: Somewhat poorly drained

Geomorphic position: Low terraces

Parent material: Loamy alluvium over clayey alluvium over cemented alluvium derived from mixed rock sources

Particle-size class: Fine

Soil temperature regime: Thermic

Slope: 0 to 2 percent

Subaco taxadjunct

Depth class: Moderately deep

Drainage class: Poorly drained

Geomorphic position: Flood basins

Parent material: Clayey alluvium over cemented alluvium derived from mixed rock sources

Particle-size class: Fine

Soil temperature regime: Thermic

Slope: 0 to 1 percent

Minor Components

- Liveoak taxadjunct soils on low fan terraces
- Galt taxadjunct soils on low fan terraces
- Calcic Haploxerolls on knolls on low terraces

Use and Management

Major uses: Irrigated pasture, grain crops, wildlife habitat, homesite development, and watershed

Management concerns: Wetness, ponding, alkalinity, and calcium carbonate content

Thermic Soils on Alluvial Fans in the Sacramento Valley

7. Olashes

Very deep, nearly level, well drained soils that formed in alluvium; on alluvial fans

Setting

Landscape: Sacramento Valley

Slope range: 0 to 2 percent

Typical vegetation: Almond and prune orchards (fig. 6), rice, and beans

Composition

Extent of the map unit: 0.1 percent

Extent of the components in the map unit:

Olashes—85 percent

Minor components—15 percent

Soil Properties

Olashes

Depth class: Very deep

Drainage class: Well drained

Geomorphic position: Alluvial fans

Parent material: Loamy alluvium derived from volcanic rocks

Particle-size class: Fine-loamy

Soil temperature regime: Thermic

Slope: 0 to 2 percent

Minor Components

- Oswald soils on basin rims
- Subaco soils in flood basins



Figure 6.—An almond orchard in an area of Alameda soils on an alluvial fan. This landform is typical of general soil map units 7 through 9.

Use and Management

Major uses: Orchard crops, row crops, homesite development, and watershed
Management concerns: Sandy substratum

8. Conejo-Alameda-Vina

Very deep, nearly level, well drained soils that formed in alluvium; on alluvial fans

Setting

Landscape: Sacramento Valley

Slope range: 0 to 1 percent

Typical vegetation: Almond and walnut orchards (fig. 6), valley oak, and annual grasses and forbs

Composition

Extent of the map unit: 5.4 percent

Extent of the components in the map unit:

Conejo—23 percent

Alameda—22 percent

Vina—13 percent

Minor components—42 percent

Soil Properties

Conejo

Depth class: Very deep

Drainage class: Well drained
Geomorphic position: Distal alluvial fans
Parent material: Loamy alluvium derived from mixed rock sources
Particle-size class: Fine-loamy
Soil temperature regime: Thermic
Slope: 0 to 1 percent

Almendra

Depth class: Very deep
Drainage class: Well drained
Geomorphic position: Alluvial fans
Parent material: Loamy alluvium derived from mixed rock sources
Particle-size class: Fine-loamy
Soil temperature regime: Thermic
Slope: 0 to 1 percent

Vina

Depth class: Very deep
Drainage class: Well drained
Geomorphic position: Proximal alluvial fans
Parent material: Sandy alluvium derived from mixed rock sources
Particle-size class: Coarse-loamy
Soil temperature regime: Thermic
Slope: 0 to 1 percent

Minor Components

- Busacca soils on distal alluvial fans
- Chico soils on low fan terraces
- Charger soils on proximal alluvial fans

Use and Management

Major uses: Orchard crops and urban development
Management concerns: None

9. Haploxerolls-Durixerolls

Deep and moderately deep, nearly level, moderately well drained and somewhat poorly drained soils that formed in alluvium; on alluvial fans

Setting

Landscape: Sacramento Valley
Slope range: 0 to 2 percent
Typical vegetation: Almond and prune orchards (fig. 6), wheat, alfalfa, and safflower

Composition

Extent of the map unit: 1.2 percent
Extent of the components in the map unit:
 Haploxerolls—63 percent
 Durixerolls—15 percent
 Minor components—22 percent

Soil Properties

Haploxerolls

Depth class: Deep
Drainage class: Moderately well drained

Geomorphic position: Alluvial fans

Parent material: Loamy alluvium over cemented alluvium derived from volcanic rocks

Particle-size class: Fine-loamy

Soil temperature regime: Thermic

Slope: 0 to 2 percent

Durixerolls

Depth class: Moderately deep

Drainage class: Somewhat poorly drained

Geomorphic position: Alluvial fans

Parent material: Loamy alluvium over cemented alluvium derived from volcanic rocks

Particle-size class: Fine-loamy

Soil temperature regime: Thermic

Slope: 0 to 2 percent

Minor Components

- Busacca soils on distal alluvial fans
- Almendra soils on alluvial fans
- Galt soils in flood basins

Use and Management

Major uses: Orchard crops, row crops, hay crops, and urban development

Management concerns: Wetness and depth to a duripan

Thermic Soils That Formed in Cascade Alluvium; on Fan Terraces in the Sacramento Valley

10. Redsluff-Redtough-Redswale

Very deep, shallow, and very shallow, nearly level to steep, moderately well drained, somewhat poorly drained, and poorly drained soils that formed in alluvium; on fan terraces (fig. 7)

Setting

Landscape: Sacramento Valley

Slope range: 0 to 35 percent

Typical vegetation: Annual grasses and forbs

Composition

Extent of the map unit: 2.8 percent

Extent of the components in the map unit:

Redsluff—21 percent

Redtough—19 percent

Redswale—10 percent

Minor components—50 percent

Soil Properties

Redsluff

Depth class: Very deep

Drainage class: Moderately well drained

Geomorphic position: Low fan terraces

Parent material: Loamy alluvium over gravelly alluvium derived from mixed rock sources



Figure 7.—Mound and swale topography on a terrace in an area of general soil map unit 10. The soils are underlain by a duripan. Livestock grazing is the main use of this unit.

Particle-size class: Fine-loamy

Soil temperature regime: Thermic

Slope: 0 to 2 percent

Redtough

Depth class: Shallow

Drainage class: Somewhat poorly drained

Geomorphic position: Mounds on high fan terraces

Parent material: Loamy alluvium over cemented, gravelly alluvium derived from volcanic rocks

Particle-size class: Loamy

Soil temperature regime: Thermic

Slope: 0 to 35 percent

Redswale

Depth class: Very shallow

Drainage class: Poorly drained

Geomorphic position: Swales on high fan terraces

Parent material: Loamy alluvium over cemented, gravelly alluvium derived from volcanic rocks

Particle-size class: Loamy

Soil temperature regime: Thermic

Slope: 0 to 2 percent

Minor Components

- Wafap soils on low stream terraces
- Munjar soils on intermediate fan terraces
- Anita soils in swales and on flats on fan terraces

Use and Management

Major uses: Livestock grazing, urban development, wildlife habitat, and watershed

Management concerns: Wetness and depth to a duripan

Thermic Soils on Feather River Terraces in the Sacramento Valley

11. Liveoak-Boga-Loemstone

Very deep and deep, nearly level, moderately well drained soils that formed in Feather River alluvium; on terraces

Setting

Landscape: Sacramento Valley

Slope range: 0 to 2 percent

Typical vegetation: Walnut, prune, kiwi, peach, and nectarine orchards; valley oak; and annual grasses and forbs

Composition

Extent of the map unit: 1.6 percent

Extent of the components in the map unit:

Liveoak—32 percent

Boga—28 percent

Loemstone—25 percent

Minor components—15 percent

Soil Properties

Liveoak

Depth class: Very deep

Drainage class: Moderately well drained

Geomorphic position: Tributary channels on Feather River terraces

Parent material: Loamy alluvium derived from mixed rock sources

Particle-size class: Fine-loamy

Soil temperature regime: Thermic

Slope: 0 to 2 percent

Boga

Depth class: Very deep

Drainage class: Moderately well drained

Geomorphic position: Feather River terraces

Parent material: Loamy alluvium over dense, silty alluvium derived from mixed rock sources

Particle-size class: Fine-loamy

Soil temperature regime: Thermic

Slope: 0 to 1 percent

Loemstone

Depth class: Deep

Drainage class: Moderately well drained

Geomorphic position: Feather River terraces

Parent material: Loamy alluvium over dense, silty alluvium derived from mixed rock sources

Particle-size class: Fine-loamy

Soil temperature regime: Thermic

Slope: 0 to 1 percent

Minor Components

- Gridley taxadjunct soils on low terraces
- Tisdale and Marcum soils on terraces

Use and Management

Major uses: Orchard crops and urban development

Management concerns: Wetness and a dense substratum

Thermic Soils That Formed in Sierra Nevada Alluvium; on Low Fan Terraces in the Sacramento Valley

12. Eastbiggs-Duric Xerarents-Kimball

Moderately deep, shallow, and very deep, nearly level, somewhat poorly drained and well drained soils that formed in alluvium; on low terraces

Setting

Landscape: Sacramento Valley

Slope range: 0 to 3 percent

Typical vegetation: Annual grasses and forbs, rice, prune orchards, and valley oak

Composition

Extent of the map unit: 3 percent

Extent of the components in the map unit:

Eastbiggs—38 percent

Duric Xerarents—14 percent

Kimball—11 percent

Minor components—37 percent

Soil Properties

Eastbiggs

Depth class: Moderately deep

Drainage class: Somewhat poorly drained

Geomorphic position: Mounds on low terraces

Parent material: Loamy alluvium over clayey alluvium over cemented alluvium derived from mixed rock sources

Particle-size class: Fine

Soil temperature regime: Thermic

Slope: 0 to 3 percent

Duric Xerarents

Depth class: Shallow

Drainage class: Somewhat poorly drained

Geomorphic position: Leveled low terraces

Parent material: Clayey alluvium over cemented alluvium derived from mixed rock sources

Particle-size class: Fine

Soil temperature regime: Thermic

Slope: 0 to 1 percent

Kimball

Depth class: Very deep

Drainage class: Well drained

Geomorphic position: Low terraces

Parent material: Loamy alluvium over clayey alluvium over loamy alluvium derived from mixed rock sources

Particle-size class: Fine

Soil temperature regime: Thermic

Slope: 1 to 3 percent

Minor Components

- Galt soils in basins and swales on low terraces
- Wilsoncreek soils on bars on low stream terraces
- Trainer soils in channels on low stream terraces

Use and Management

Major uses: Livestock grazing, grain crops, orchard crops, wildlife habitat, and watershed

Management concerns: Wetness and depth to a duripan

Thermic Soils That Formed in Sierra Nevada Alluvium; on Intermediate and High Fan Terraces in the Sacramento Valley**13. Thompsonflat-Oroville-Vistarobles**

Very deep, moderately deep, and shallow, nearly level to moderately steep, moderately well drained and poorly drained soils that formed in alluvium; on intermediate and high fan terraces

Setting

Landscape: Sacramento Valley

Slope range: 0 to 30 percent

Typical vegetation: Annual grasses and forbs, blue oak, interior live oak, buckbrush, toyon, and whiteleaf manzanita

Composition

Extent of the map unit: 4 percent

Extent of the components in the map unit:

Thompsonflat—28 percent

Oroville—18 percent

Vistarobles—10 percent

Minor components—44 percent

Soil Properties**Thompsonflat**

Depth class: Very deep

Drainage class: Moderately well drained

Geomorphic position: High fan terraces

Parent material: Loamy alluvium over clayey alluvium over gravelly alluvium derived from mixed rock sources

Particle-size class: Fine-loamy

Soil temperature regime: Thermic

Slope: 0 to 30 percent

Oroville

Depth class: Moderately deep

Drainage class: Poorly drained

Geomorphic position: Swales on intermediate fan terraces

Parent material: Loamy alluvium over clayey alluvium over cemented alluvium derived from mixed rock sources

Particle-size class: Fine

Soil temperature regime: Thermic

Slope: 0 to 9 percent

Vistarobles

Depth class: Shallow

Drainage class: Poorly drained

Geomorphic position: Swales on intermediate fan terraces

Parent material: Loamy alluvium over clayey alluvium over cemented alluvium derived from mixed rock sources

Particle-size class: Clayey

Soil temperature regime: Thermic

Slope: 0 to 9 percent

Minor Components

- Redding and Thermalito soils on mounds on intermediate fan terraces
- Fernandez soils on intermediate fan terraces

Use and Management

Major uses: Livestock grazing, urban development, wildlife habitat, and watershed

Management concerns: Wetness and depth to a duripan

Thermic Soils on Lovejoy Basalt and Lone Sediments on Sierra Nevada Foothills

14. Palexerults-Rock Outcrop, Basalt-Coalcanyon

Exposed bedrock and very deep, nearly level to very steep, well drained soils that formed in colluvium and residuum; on foothills

Setting

Landscape: Sierra Nevada foothills (fig. 8)

Slope range: 2 to 50 percent

Typical vegetation: Annual grasses and forbs, lichens, interior live oak, blue oak, and valley oak

Composition

Extent of the map unit: 1.8 percent

Extent of the components in the map unit:

Palexerults—18 percent

Rock outcrop—15 percent

Coalcanyon—15 percent

Minor components—52 percent



Figure 8.—Typical landscape and vegetation in an area of general soil map unit 14. Pictured is Fern Falls on Table Mountain.

Soil Properties

Palexerults

Depth class: Very deep

Drainage class: Well drained

Geomorphic position: Ridgetops and side slopes on foothills

Parent material: Loamy colluvium derived from volcanic rocks over clayey residuum derived from Lone Formation claystone

Particle-size class: Fine-loamy and fine

Soil temperature regime: Thermic

Slope: 2 to 50 percent

Rock outcrop

Geomorphic position: Tops and cliffs on basalt plateaus

Kind of rock: Lovejoy basalt

Slope: 2 to 200 percent

Coalcanyon

Depth class: Very deep

Drainage class: Well drained

Geomorphic position: Side slopes on basalt plateaus

Parent material: Gravelly colluvium derived from Lovejoy basalt

Particle-size class: Loamy-skeletal

Soil temperature regime: Thermic

Slope: 5 to 50 percent

Minor Components

- Thermalrocks soils on tops of basalt plateaus
- Coonhollow soils on side slopes of basalt plateaus
- Campbellhills soils in fractures on tops of basalt plateaus

Use and Management

Major uses: Livestock grazing, wildlife habitat, and watershed

Management concerns: Soil slumping, depth to bedrock, and content of rock fragments

Thermic Soils on Strath Terraces on Volcanic Cascade Foothills

15. Tuscan-Clearhayes-Typic Xerofluvents

Shallow, deep, and very deep, nearly level, somewhat poorly drained and well drained soils that formed in alluvium; on strath terraces (fig. 9)

Setting

Landscape: Cascade foothills

Slope range: 0 to 2 percent

Typical vegetation: Annual grasses and forbs, cottonwood, sycamore, black walnut, and valley oak

Composition

Extent of the map unit: 2.7 percent

Extent of the components in the map unit:

Tuscan—9 percent

Clearhayes—8 percent

Typic Xerofluvents—7 percent

Minor components—76 percent

Soil Properties

Tuscan

Depth class: Shallow

Drainage class: Somewhat poorly drained

Geomorphic position: Mounds on high strath terraces on volcanic foothills

Parent material: Loamy alluvium over clayey alluvium over cemented, gravelly alluvium derived from volcanic rocks

Particle-size class: Clayey

Soil temperature regime: Thermic

Slope: 0 to 3 percent

Clearhayes

Depth class: Deep

Drainage class: Somewhat poorly drained



Figure 9.—Typical landscape and vegetation in an area of general soil map unit 15.

Geomorphic position: Bars on low strath terraces on volcanic foothills

Parent material: Loamy overbank deposits over gravelly channel deposits derived from volcanic rocks

Particle-size class: Fine-loamy

Soil temperature regime: Thermic

Slope: 0 to 2 percent

Typic Xerofluvents

Depth class: Very deep

Drainage class: Well drained

Geomorphic position: Stream terraces on volcanic foothills

Parent material: Sandy alluvium derived from hydraulic mine deposition

Particle-size class: Coarse-loamy and sandy-skeletal

Soil temperature regime: Thermic

Slope: 0 to 2 percent

Minor Components

- Wickscorner soils on fan terraces below Table Mountain
- Fallager soils in swales on high strath terraces
- Duric Xerarents on leveled strath terraces

Use and Management

Major uses: Livestock grazing, wildlife habitat, and watershed

Management concerns: Depth to a duripan, depth to bedrock, and wetness

Thermic Soils on Volcanic Cascade Foothills

16. Lucksev-Butteside-Carhart

Very shallow, shallow, and moderately deep, nearly level to steep, moderately well drained and poorly drained soils that formed in alluvium, residuum, and colluvium; on foothills

Setting

Landscape: Cascade foothills

Slope range: 2 to 35 percent

Typical vegetation: Annual grasses and forbs; blue oak at the higher elevations

Composition

Extent of the map unit: 1.5 percent

Extent of the components in the map unit:

Lucksev—31 percent

Butteside—27 percent

Carhart—21 percent

Minor components—21 percent

Soil Properties

Lucksev

Depth class: Very shallow and shallow

Drainage class: Moderately well drained

Geomorphic position: Ridgetops, side slopes, and strath terraces on volcanic foothills

Parent material: Loamy alluvium over clayey alluvium, residuum, and colluvium derived from volcanic rocks

Particle-size class: Clayey

Soil temperature regime: Thermic

Slope: 2 to 35 percent

Butteside

Depth class: Moderately deep

Drainage class: Moderately well drained

Geomorphic position: Side slopes and strath terraces on volcanic foothills

Parent material: Loamy alluvium over clayey alluvium, residuum, and colluvium derived from volcanic rocks

Particle-size class: Fine

Soil temperature regime: Thermic

Slope: 2 to 35 percent

Carhart

Depth class: Moderately deep

Drainage class: Poorly drained

Geomorphic position: Basins and footslopes on volcanic foothills

Parent material: Clayey alluvium derived from volcanic rocks

Particle-size class: Fine

Soil temperature regime: Thermic

Slope: 0 to 12 percent

Minor Components

- Anita taxadjunct soils in basins and side slopes on foothills

Use and Management

Major uses: Livestock grazing, homesite development, wildlife habitat, and watershed

Management concerns: Depth to bedrock, wetness, and a high content of clay

17. Doemill-Jokerst

Shallow and very shallow, nearly level to moderately steep, somewhat poorly drained and poorly drained soils that formed in residuum; on foothills

Setting

Landscape: Cascade foothills

Slope range: 0 to 30 percent

Typical vegetation: Annual grasses and forbs and scattered blue oak

Composition

Extent of the map unit: 1.8 percent

Extent of the components in the map unit:

Doemill—44 percent

Jokerst—39 percent

Minor components—17 percent

Soil Properties

Doemill

Depth class: Shallow

Drainage class: Somewhat poorly drained

Geomorphic position: Mounds and planar areas on ridgetops, strath terraces, and side slopes on volcanic foothills

Parent material: Loamy residuum derived from volcanic mudflow breccia

Particle-size class: Loamy

Soil temperature regime: Thermic

Slope: 0 to 30 percent

Jokerst

Depth class: Very shallow

Drainage class: Poorly drained

Geomorphic position: Swales and planar areas on ridgetops, strath terraces, and side slopes on volcanic foothills

Parent material: Loamy residuum derived from volcanic mudflow breccia

Particle-size class: Loamy

Soil temperature regime: Thermic

Slope: 0 to 30 percent

Minor Components

- Typic Haploxeralfs on side slopes on foothills
- Carhart taxadjunct soils in basins on strath terraces on foothills

Use and Management

Major uses: Livestock grazing, urban development, wildlife habitat, and watershed

Management concerns: Wetness and depth to bedrock

18. Xerorthents, Shallow-Typic Haploxeralfs-Doemill

Very shallow, shallow, moderately deep, and deep, nearly level to very steep, moderately well drained, well drained, and somewhat poorly drained soils that formed in colluvium, residuum, and alluvium; on foothills

Setting

Landscape: Cascade foothills

Slope range: 2 to 100 percent

Typical vegetation: Annual grasses and forbs, blue oak, interior live oak, canyon live oak, foothill pine, buckbrush, and manzanita

Composition

Extent of the map unit: 5 percent

Extent of the components in the map unit:

Xerorthents, shallow—22 percent

Typic Haploxeralfs—15 percent

Doemill—6 percent

Minor components—57 percent

Soil Properties

Xerorthents, shallow

Depth class: Very shallow and shallow

Drainage class: Moderately well drained

Geomorphic position: Side slopes in canyons in volcanic foothills

Parent material: Loamy colluvium, residuum, and alluvium derived from volcanic rocks

Particle-size class: Loamy, clayey, loamy-skeletal, clayey-skeletal

Soil temperature regime: Thermic

Slope: 2 to 50 percent

Typic Haploxeralfs

Depth class: Moderately deep and deep

Drainage class: Well drained

Geomorphic position: Side slopes in canyons in volcanic foothills

Parent material: Loamy colluvium, residuum, and alluvium derived from volcanic rocks

Particle-size class: Fine-loamy, fine, loamy-skeletal, clayey-skeletal

Soil temperature regime: Thermic

Slope: 2 to 50 percent

Doemill

Depth class: Shallow

Drainage class: Somewhat poorly drained

Geomorphic position: Ridgetops on volcanic foothills

Parent material: Loamy residuum derived from volcanic mudflow breccia

Particle-size class: Loamy

Soil temperature regime: Thermic

Slope: 3 to 15 percent

Minor Components

- Chinacamp soils on side slopes in canyons in foothills
- Jokerst soils on ridgetops on foothills
- Ultic Haploxeralfs, conglomerate, on side slopes in canyons in foothills
- Coridge soils on ridgetops of basalt flows in foothills

Use and Management

Major uses: Livestock grazing, homesite development, wildlife habitat, and watershed

Management concerns: Slope and depth to bedrock

Thermic Soils on Metamorphic Sierra Nevada Foothills

19. Dunstone-Loafercreek-Argonaut Taxadjunct

Shallow and moderately deep, nearly level to moderately steep, well drained soils that formed in residuum and colluvium; on foothills

Setting

Landscape: Sierra Nevada foothills

Slope range: 1 to 30 percent

Typical vegetation: Annual grasses and forbs and blue oak (fig. 10)

Composition

Extent of the map unit: 2.8 percent

Extent of the components in the map unit:

Dunstone—44 percent

Loafercreek—14 percent

Argonaut taxadjunct—11 percent

Minor components—31 percent

Soil Properties

Dunstone

Depth class: Shallow

Drainage class: Well drained

Geomorphic position: Ridgetops and side slopes on metamorphic foothills

Parent material: Loamy residuum and colluvium derived from metavolcanic rocks

Particle-size class: Loamy

Soil temperature regime: Thermic

Slope: 1 to 30 percent

Loafercreek

Depth class: Moderately deep

Drainage class: Well drained

Geomorphic position: Ridgetops and side slopes on metamorphic foothills

Parent material: Loamy residuum and colluvium derived from metavolcanic rocks

Particle-size class: Fine-loamy

Soil temperature regime: Thermic

Slope: 1 to 30 percent

Argonaut taxadjunct

Depth class: Moderately deep

Drainage class: Well drained

Geomorphic position: Ridgetops and side slopes on metamorphic foothills

Parent material: Clayey residuum and colluvium derived from metavolcanic rocks

Particle-size class: Fine

Soil temperature regime: Thermic

Slope: 2 to 30 percent



Figure 10.—Blue oak and annual grasses in an area of general soil map unit 19. The landscape is typical of the low Sierra Nevada foothills.

Minor Components

- Katskillhill and Sunnyslope soils on ridgetops and side slopes on foothills
- Rock outcrop on ridgetops and side slopes on foothills

Use and Management

Major uses: Livestock grazing, homesite development, wildlife habitat, and watershed

Management concerns: Depth to bedrock

20. Dunstone-Loafercreek-Oroshore

Shallow and moderately deep, nearly level to very steep, well drained soils that formed in residuum and colluvium; on foothills

Setting

Landscape: Sierra Nevada foothills

Slope range: 2 to 90 percent

Typical vegetation: Annual grasses and forbs, interior live oak, blue oak, foothill pine, whiteleaf manzanita, buckbrush, and toyon

Composition

Extent of the map unit: 3.1 percent

Extent of the components in the map unit:

Dunstone—29 percent

Loafercreek—19 percent

Oroshore—13 percent

Minor components—39 percent

Soil Properties

Dunstone

Depth class: Shallow

Drainage class: Well drained

Geomorphic position: Ridgetops and side slopes on metamorphic foothills

Parent material: Loamy residuum and colluvium derived from metavolcanic and metasedimentary rocks

Particle-size class: Loamy

Soil temperature regime: Thermic

Slope: 2 to 90 percent

Loafercreek

Depth class: Moderately deep

Drainage class: Well drained

Geomorphic position: Ridgetops and side slopes on metamorphic foothills

Parent material: Loamy residuum and colluvium derived from metavolcanic rocks

Particle-size class: Fine-loamy

Soil temperature regime: Thermic

Slope: 2 to 90 percent

Oroshore

Depth class: Moderately deep

Drainage class: Well drained

Geomorphic position: Ridgetops and side slopes on metamorphic foothills

Parent material: Loamy residuum and colluvium derived from metasedimentary rocks

Particle-size class: Loamy-skeletal

Soil temperature regime: Thermic

Slope: 3 to 70 percent

Minor Components

- Mounthope soils on ridgetops and side slopes on foothills
- Dystroxerepts and Haploxeralfs on very steep canyon backslopes in foothills

Use and Management

Major uses: Livestock grazing, homesite development, wildlife habitat, and watershed

Management concerns: Slope and depth to bedrock

21. Mounthope-Hartsmill

Very deep and deep, nearly level to very steep, well drained soils that formed in residuum and colluvium; on foothills

Setting

Landscape: Sierra Nevada foothills

Slope range: 2 to 90 percent

Typical vegetation: Whiteleaf manzanita, buckbrush, toyon, annual grasses and forbs, interior live oak, Pacific madrone, foothill pine, and scattered ponderosa pine

Composition

Extent of the map unit: 1 percent

Extent of the components in the map unit:

Mounthope—35 percent

Hartsmill—28 percent

Minor components—37 percent

Soil Properties

Mounthope

Depth class: Deep

Drainage class: Well drained

Geomorphic position: Ridgetops and side slopes on metamorphic foothills

Parent material: Loamy residuum and colluvium derived from metavolcanic rocks

Particle-size class: Fine-loamy

Soil temperature regime: Thermic

Slope: 2 to 90 percent

Hartsmill

Depth class: Very deep

Drainage class: Well drained

Geomorphic position: Ridgetops and side slopes on metamorphic foothills

Parent material: Loamy residuum and colluvium derived from metavolcanic rocks

Particle-size class: Loamy-skeletal

Soil temperature regime: Thermic

Slope: 2 to 90 percent

Minor Components

- Dunstone and Sommeyflat soils on ridgetops and side slopes on foothills

Use and Management

Major uses: Homesite development, watershed, and wildlife habitat

Management concerns: Slope

22. Ultic Haploxeralfs, Thermic, High Terrace

Moderately deep and deep, nearly level to moderately steep, moderately well drained soils that formed in alluvium; on high terraces

Setting

Landscape: Sierra Nevada foothills

Slope range: 2 to 30 percent

Typical vegetation: Annual grasses and forbs, blue oak, foothill pine, and whiteleaf manzanita

Composition

Extent of the map unit: 0.5 percent

Extent of the components in the map unit:

Ultic Haploxeralfs, thermic, high terrace—95 percent

Minor components—5 percent

Soil Properties

Ultic Haploxeralfs, thermic, high terrace

Depth class: Moderately deep and deep

Drainage class: Moderately well drained

Geomorphic position: High terraces

Parent material: Loamy alluvium over gravelly alluvium derived from mixed sources

Particle-size class: Fine-loamy and loamy-skeletal

Soil temperature regime: Thermic

Slope: 2 to 30 percent

Minor Components

- Dunstone and Loafercreek soils on ridgetops and side slopes on foothills

Use and Management

Major uses: Livestock grazing, homesite development, wildlife habitat, and watershed

Management concerns: Wetness, rock fragments, and slope

Thermic Soils on Plutons on Sierra Nevada Foothills

23. Flanly-Swedesflat-Parkshill

Moderately deep, shallow, and very deep, nearly level to very steep, well drained soils that formed in residuum and colluvium; on foothills

Setting

Landscape: Sierra Nevada foothills (fig. 11)

Slope range: 2 to 50 percent

Typical vegetation: Annual grasses and forbs, interior live oak, blue oak, foothill pine, and buckbrush

Composition

Extent of the map unit: 2.3 percent

Extent of the components in the map unit:

Flanly—36 percent

Swedesflat—19 percent

Parkshill—12 percent

Minor components—33 percent

Soil Properties

Flanly

Depth class: Moderately deep

Drainage class: Well drained

Geomorphic position: Ridgetops and side slopes on plutons in foothills

Parent material: Loamy residuum and colluvium derived from quartz diorite

Particle-size class: Fine-loamy

Soil temperature regime: Thermic

Slope: 2 to 50 percent

Swedesflat

Depth class: Shallow



Figure 11.—A typical area on plutons in the Sierra Nevada foothills. This landscape is typical of general soil map units 23 and 24. Stringtown Mountain and Lake Oroville are in the background.

Drainage class: Well drained

Geomorphic position: Ridgetops and side slopes on plutons in foothills

Parent material: Loamy residuum and colluvium derived from quartz diorite

Particle-size class: Loamy

Soil temperature regime: Thermic

Slope: 2 to 30 percent

Parkshill

Depth class: Very deep

Drainage class: Well drained

Geomorphic position: Ridgetops and side slopes on plutons in foothills

Parent material: Sandy residuum and colluvium derived from quartz diorite or gabbro

Particle-size class: Fine-loamy

Soil temperature regime: Thermic

Slope: 2 to 15 percent

Minor Components

- Rackerby soils on side slopes on foothills
- Hurleton and Sommeyflat soils on ridgetops on foothills

Use and Management

Major uses: Livestock grazing, homesite development, wildlife habitat, and watershed

Management concerns: Slope and depth to bedrock

24. Crystalhill-Oregongulch-Craigsaddle

Very deep, moderately deep, and deep, nearly level to very steep, somewhat excessively drained and well drained soils that formed in residuum and colluvium; on foothills

Setting

Landscape: Sierra Nevada foothills (fig. 11)

Slope range: 2 to 70 percent

Typical vegetation: Whiteleaf manzanita, toyon, annual grasses and forbs, interior live oak, canyon live oak, Pacific madrone, foothill pine, and scattered ponderosa pine

Composition

Extent of the map unit: 2.4 percent

Extent of the components in the map unit:

Crystalhill—24 percent

Oregongulch—14 percent

Craigsaddle—14 percent

Minor components—48 percent

Soil Properties

Crystalhill

Depth class: Very deep

Drainage class: Somewhat excessively drained

Geomorphic position: Ridgetops and side slopes on plutons in foothills

Parent material: Sandy residuum and colluvium derived from intrusive igneous rocks

Particle-size class: Coarse-loamy

Soil temperature regime: Thermic

Slope: 2 to 70 percent

Oregongulch

Depth class: Moderately deep

Drainage class: Somewhat excessively drained

Geomorphic position: Ridgetops and side slopes on plutons in foothills

Parent material: Sandy residuum and colluvium derived from intrusive igneous rocks

Particle-size class: Coarse-loamy

Soil temperature regime: Thermic

Slope: 2 to 70 percent

Craigsaddle

Depth class: Deep

Drainage class: Well drained

Geomorphic position: Ridgetops and side slopes on plutons in foothills

Parent material: Loamy residuum and colluvium derived from intrusive igneous rocks

Particle-size class: Fine-loamy

Soil temperature regime: Thermic

Slope: 2 to 70 percent

Minor Components

- Sommeyflat, Mounthope, and Forbestown soils on side slopes on foothills

Use and Management

Major uses: Wildlife habitat, watershed, and homesite development

Management concerns: Depth to bedrock, slope, and erodibility

Mesic Soils on Volcanic Cascade Foothills

25. Rockstripe-Ultic Haploxeralfs, Mesic-Ultic Haploxeralfs

Very shallow, moderately deep, and deep, nearly level to very steep, somewhat poorly drained and well drained soils that formed in residuum and colluvium; on foothills

Setting

Landscape: Cascade foothills

Slope range: 2 to 100 percent

Typical vegetation: Buckbrush, scrub oak, manzanita, annual grasses and forbs, interior live oak, canyon live oak, California black oak, and foothill pine

Composition

Extent of the map unit: 3.7 percent

Extent of the components in the map unit:

Rockstripe—33 percent

Ultic Haploxeralfs, mesic—25 percent

Ultic Haploxeralfs—22 percent

Minor components—20 percent

Soil Properties

Rockstripe

Depth class: Very shallow

Drainage class: Somewhat poorly drained

Geomorphic position: Ridgetops and side slopes in canyons in volcanic foothills

Parent material: Loamy residuum derived from volcanic mudflow breccia

Particle-size class: Loamy-skeletal

Soil temperature regime: Mesic

Slope: 2 to 100 percent

Ultic Haploxeralfs, mesic

Depth class: Moderately deep and deep

Drainage class: Well drained

Geomorphic position: Ridgetops and shoulder slopes on volcanic foothills

Parent material: Loamy residuum derived from volcanic rocks

Particle-size class: Fine-loamy, fine, loamy-skeletal, clayey-skeletal

Soil temperature regime: Mesic

Slope: 2 to 30 percent

Ultic Haploxeralfs

Depth class: Moderately deep and deep

Drainage class: Well drained

Geomorphic position: Side slopes in canyons in volcanic foothills

Parent material: Loamy colluvium derived from volcanic rocks

Particle-size class: Fine-loamy and loamy-skeletal

Soil temperature regime: Mesic

Slope: 30 to 100 percent

Minor Components

- Rock outcrop, cliffs, on canyon backslopes in foothills

Use and Management

Major uses: Homesite development, wildlife habitat, and watershed

Management concerns: Slope and depth to bedrock

Mesic Soils on Metamorphic Sierra Nevada Foothills

26. Bigridge-Minniecreek

Deep and moderately deep, nearly level to very steep, well drained soils that formed in residuum and colluvium; on foothills

Setting

Landscape: Sierra Nevada foothills

Slope range: 2 to 70 percent

Typical vegetation: Whiteleaf manzanita, toyon, interior live oak, Pacific madrone, canyon live oak, foothill pine, ponderosa pine, and poison oak

Composition

Extent of the map unit: 0.3 percent

Extent of the components in the map unit:

Bigridge—50 percent

Minniecreek—35 percent

Minor components—15 percent

Soil Properties

Bigridge

Depth class: Deep

Drainage class: Well drained

Geomorphic position: Ridgetops and side slopes on metamorphic foothills

Parent material: Loamy residuum and colluvium derived from metavolcanic rocks

Particle-size class: Fine-loamy

Soil temperature regime: Mesic

Slope: 2 to 70 percent

Minniecreek

Depth class: Moderately deep

Drainage class: Well drained

Geomorphic position: Ridgetops and side slopes on metamorphic foothills

Parent material: Loamy residuum and colluvium derived from metavolcanic rocks

Particle-size class: Fine-loamy

Soil temperature regime: Mesic

Slope: 2 to 70 percent

Minor Components

- Mounthope soils, Hartsmill soils, and Rock outcrop on ridgetops and side slopes on foothills

Use and Management

Major uses: Homesite development, wildlife habitat, watershed, and limited timber production

Management concerns: Slope and depth to bedrock

Mesic Soils on Volcanic Cascade Mountains

27. Paradiso-Schott-Tusccoll

Very deep and deep, nearly level to very steep, well drained soils that formed in residuum and colluvium; on mountains

Setting

Landscape: Cascade Mountains

Slope range: 2 to 70 percent

Typical vegetation: Ponderosa pine, Douglas-fir, sugar pine, incense cedar, California black oak, deerbrush, and whiteleaf manzanita

Composition

Extent of the map unit: 3.9 percent

Extent of the components in the map unit:

Paradiso—50 percent

Schott—20 percent

Tusccoll—9 percent

Minor components—21 percent

Soil Properties

Paradiso

Depth class: Very deep

Drainage class: Well drained

Geomorphic position: Ridgetops on volcanic plateaus

Parent material: Clayey residuum derived from volcanic rocks

Particle-size class: Fine

Soil temperature regime: Mesic

Slope: 2 to 30 percent

Schott

Depth class: Deep

Drainage class: Well drained

Geomorphic position: Ridgetops and canyon side slopes on volcanic plateaus

Parent material: Loamy residuum and colluvium derived from volcanic mudflow breccia

Particle-size class: Loamy-skeletal

Soil temperature regime: Mesic

Slope: 3 to 50 percent

Tusccoll

Depth class: Very deep

Drainage class: Well drained

Geomorphic position: Backslopes in canyons in volcanic plateaus

Parent material: Loamy colluvium derived from volcanic rocks

Particle-size class: Fine-loamy

Soil temperature regime: Mesic

Slope: 30 to 70 percent

Minor Components

- Rock outcrop on ridgetops and side slopes on volcanic plateaus
- Mounyana soils on ridgetops on volcanic plateaus
- Lydon soils on ridgetops and side slopes on volcanic plateaus

Use and Management

Major uses: Homesite development, timber production, wildlife habitat, and watershed

Management concerns: Slope and depth to bedrock

28. Mountyana-Beecee-Lydon

Very deep and moderately deep, nearly level to very steep, well drained and somewhat excessively drained soils that formed in residuum and colluvium; on mountains

Setting

Landscape: Cascade Mountains (fig. 12)

Slope range: 2 to 100 percent

Typical vegetation: Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak, tanoak, deerbrush, canyon live oak, and Pacific poison oak

Composition

Extent of the map unit: 2.6 percent

Extent of the components in the map unit:

Mountyana—36 percent

Beecee—28 percent



Figure 12.—Big Chico Creek Canyon in an area of general soil map unit 28. The landscape and vegetation are characteristic of areas in the Cascade Mountains. The Sierra Nevada Mountains are in the background.

Lydon—12 percent
 Minor components—24 percent

Soil Properties

Mountyana

Depth class: Very deep
Drainage class: Well drained
Geomorphic position: Ridgetops on volcanic plateaus
Parent material: Loamy residuum derived from volcanic mudflow breccia
Particle-size class: Fine-loamy
Soil temperature regime: Mesic
Slope: 2 to 30 percent

Beecee

Depth class: Very deep
Drainage class: Well drained
Geomorphic position: Backslopes in canyons in volcanic plateaus
Parent material: Loamy colluvium derived from volcanic rocks
Particle-size class: Medial-skeletal
Soil temperature regime: Mesic
Slope: 30 to 70 percent

Lydon

Depth class: Moderately deep
Drainage class: Somewhat excessively drained
Geomorphic position: Ridgetops and side slopes on volcanic plateaus
Parent material: Sandy residuum and colluvium derived from volcanic mudflow breccia
Particle-size class: Loamy-skeletal
Soil temperature regime: Mesic
Slope: 2 to 100 percent

Minor Components

- Rock outcrop on ridgetops and side slopes on volcanic plateaus
- Paradiso soils on ridgetops on volcanic plateaus
- Schott soils on ridgetops and side slopes on volcanic plateaus

Use and Management

Major uses: Timber production, wildlife habitat, and watershed
Management concerns: Slope and depth to bedrock

29. Redbone

Deep, nearly level to moderately steep, well drained soils that formed in residuum; on mountains

Setting

Landscape: Cascade Mountains (fig. 13)
Slope range: 3 to 30 percent
Typical vegetation: Ponderosa pine, white fir, sugar pine, Douglas-fir, incense cedar, Sierra chinquapin, and greenleaf manzanita



Figure 13.—A road-cut exposure of Redbone soils.

Composition

Extent of the map unit: 0.6 percent

Extent of the components in the map unit:

Redbone—71 percent

Minor components—29 percent

Soil Properties

Redbone

Depth class: Deep

Drainage class: Well drained

Geomorphic position: Ridgetops on volcanic plateaus

Parent material: Loamy residuum derived from volcanic mudflow breccia

Particle-size class: Medial over loamy-skeletal

Soil temperature regime: Mesic

Slope: 3 to 30 percent

Minor Components

- Lydon and Mountyana soils on ridgetops on volcanic plateaus
- Endoaquolls in meadows in mountain valleys

Use and Management

Major uses: Timber production, wildlife habitat, and watershed

Management concerns: Depth to bedrock

Mesic Soils on Metamorphic Sierra Nevada Mountains

30. Surnuf-Griffgulch-Typic Haploxeralfs, Magnesian

Very deep, deep, and moderately deep, nearly level to very steep, well drained soils that formed in residuum and colluvium; on mountains

Setting

Landscape: Sierra Nevada Mountains

Slope range: 3 to 80 percent

Typical vegetation: Ponderosa pine, Douglas-fir (fig. 14), foothill pine, California black oak, canyon live oak, tanoak, whiteleaf manzanita, toyon, and poison oak

Composition

Extent of the map unit: 3.5 percent

Extent of the components in the map unit:

Surnuf—25 percent

Griffgulch—10 percent

Typic Haploxeralfs, magnesian—8 percent

Minor components—57 percent



Figure 14.—This view of the metamorphic mountain landscape is representative of general soil map unit 30. The vegetation is dominated by ponderosa pine and Douglas-fir.

Soil Properties

Surnuf

Depth class: Very deep

Drainage class: Well drained

Geomorphic position: Ridgetops and side slopes on metamorphic mountains

Parent material: Clayey residuum and colluvium derived from metavolcanic rocks

Particle-size class: Fine

Soil temperature regime: Mesic

Slope: 3 to 70 percent

Griffgulch

Depth class: Deep

Drainage class: Well drained

Geomorphic position: Ridgetops and side slopes on metamorphic mountains

Parent material: Clayey residuum and colluvium derived from metavolcanic rocks

Particle-size class: Clayey-skeletal

Soil temperature regime: Mesic

Slope: 3 to 70 percent

Typic Haploxerafs, magnesian

Depth class: Moderately deep to very deep

Drainage class: Well drained

Geomorphic position: Ridgetops and side slopes on metamorphic mountains

Parent material: Clayey residuum and colluvium derived from serpentinite

Particle-size class: Clayey-skeletal

Soil temperature regime: Mesic

Slope: 3 to 80 percent

Minor Components

- Bigridge and Millerridge soils on ridgetops and side slopes on mountains
- Surnuf taxadjunct soils on ridgetops and side slopes on mountains

Use and Management

Major uses: Timber production, homesite development, wildlife habitat, and watershed

Management concerns: All three soils—depth to bedrock, surface stones, and slope;
Typic Haploxerafs, magnesian—calcium magnesium imbalance

31. Toadtown-Powellton-Rogerville

Very deep and deep, nearly level to very steep, well drained soils that formed in residuum and colluvium; on mountains

Setting

Landscape: Sierra Nevada Mountains

Slope range: 2 to 70 percent

Typical vegetation: Ponderosa pine, Douglas-fir, sugar pine, incense cedar, white fir, California black oak, tanoak, Pacific madrone, Pacific dogwood, and deerbrush

Composition

Extent of the map unit: 4.3 percent

Extent of the components in the map unit:

Toadtown—27 percent

Powellton—15 percent

Rogerville—8 percent
 Minor components—50 percent

Soil Properties

Toadtown

Depth class: Very deep
Drainage class: Well drained
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Parent material: Clayey residuum and colluvium derived from metamorphic rocks
Particle-size class: Fine
Soil temperature regime: Mesic
Slope: 3 to 70 percent

Powellton

Depth class: Very deep
Drainage class: Well drained
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Parent material: Loamy residuum and colluvium derived from metamorphic rocks
Particle-size class: Fine-loamy
Soil temperature regime: Mesic
Slope: 3 to 70 percent

Rogerville

Depth class: Deep
Drainage class: Well drained
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Parent material: Clayey residuum and colluvium derived from ultramafic rocks
Particle-size class: Fine
Soil temperature regime: Mesic
Slope: 2 to 70 percent

Minor Components

- Dixmine and Hietanen soils on ridgetops and side slopes on mountains
- Sites taxadjunct soils on ridgetops and side slopes on mountains

Use and Management

Major uses: Timber production, wildlife habitat, and watershed
Management concerns: Slope

32. Obstruction-Obskel-Bottlehill

Very deep, deep, and moderately deep, nearly level to very steep, well drained soils that formed in residuum and colluvium; on mountains

Setting

Landscape: Sierra Nevada Mountains
Slope range: 3 to 110 percent
Typical vegetation: White fir, ponderosa pine, Douglas-fir, sugar pine, California black oak, Pacific dogwood, whitethorn ceanothus, and greenleaf manzanita

Composition

Extent of the map unit: 2.7 percent
Extent of the components in the map unit:
 Obstruction—22 percent
 Obskel—19 percent

Bottlehill—16 percent
 Minor components—43 percent

Soil Properties

Obstruction

Depth class: Very deep

Drainage class: Well drained

Geomorphic position: Ridgetops and side slopes on metamorphic mountains

Parent material: Loamy residuum and colluvium derived from coarse grained metamorphic rocks

Particle-size class: Fine-loamy

Soil temperature regime: Mesic

Slope: 3 to 70 percent

Obskel

Depth class: Deep

Drainage class: Well drained

Geomorphic position: Ridgetops and side slopes on metamorphic mountains

Parent material: Sandy residuum and colluvium derived from coarse grained metamorphic rocks

Particle-size class: Loamy-skeletal

Soil temperature regime: Mesic

Slope: 3 to 70 percent

Bottlehill

Depth class: Moderately deep

Drainage class: Well drained

Geomorphic position: Ridgetops and side slopes on metamorphic mountains

Parent material: Loamy residuum and colluvium derived from metavolcanic and metasedimentary rocks

Particle-size class: Loamy-skeletal

Soil temperature regime: Mesic

Slope: 3 to 110 percent

Minor Components

- Logtrain and Walkermine soils on ridgetops and side slopes on mountains
- Retsongulch soils on canyon side slopes in mountains

Use and Management

Major uses: Timber production, wildlife habitat, and watershed

Management concerns: Slope and depth to bedrock

Mesic Soils on Plutons in the Sierra Nevada Mountains

33. Islandbar-Featherfalls-Chawanakee

Very deep and shallow, nearly level to very steep, somewhat excessively drained and well drained soils that formed in residuum and colluvium; on mountains

Setting

Landscape: Sierra Nevada Mountains

Slope range: 2 to 70 percent

Typical vegetation: Ponderosa pine, incense cedar, Douglas-fir, canyon live oak,

tanoak, Pacific madrone, whiteleaf manzanita, deerbrush, California honeysuckle, and poison oak

Composition

Extent of the map unit: 2 percent

Extent of the components in the map unit:

Islandbar—40 percent

Featherfalls—34 percent

Chawanakee—10 percent

Minor components—16 percent

Soil Properties

Islandbar

Depth class: Very deep

Drainage class: Somewhat excessively drained

Geomorphic position: Ridgetops and side slopes on plutons in mountains

Parent material: Sandy residuum and colluvium derived from quartz diorite

Particle-size class: Coarse-loamy

Soil temperature regime: Mesic

Slope: 2 to 70 percent

Featherfalls

Depth class: Very deep

Drainage class: Well drained

Geomorphic position: Ridgetops and side slopes on plutons in mountains

Parent material: Loamy residuum and colluvium derived from quartz diorite

Particle-size class: Fine-loamy

Soil temperature regime: Mesic

Slope: 2 to 70 percent

Chawanakee

Depth class: Shallow

Drainage class: Somewhat excessively drained

Geomorphic position: Ridgetops and side slopes on plutons in mountains

Parent material: Sandy residuum and colluvium derived from quartz diorite

Particle-size class: Loamy

Soil temperature regime: Mesic

Slope: 3 to 70 percent

Minor Components

- Rock outcrop and Lithic Xerorthents on ridgetops and side slopes on mountains
- Fluvaquents, loamy, on stream terraces in mountain valleys

Use and Management

Major uses: Timber production, homesite development, wildlife habitat, and watershed

Management concerns: Depth to bedrock, slope, and erodibility

34. Bonneyridge-Chawanakee-Lewisflat

Very deep and shallow, nearly level to very steep, somewhat excessively drained and well drained soils that formed in residuum and colluvium; on mountains

Setting

Landscape: Sierra Nevada Mountains (fig. 15)

Slope range: 2 to 110 percent



Figure 15.—Sierra Nevada (pluton) landscape and vegetation typical of general soil map unit 34. Exposed quartz diorite rock outcrop is in the foreground at left.

Typical vegetation: Ponderosa pine, sugar pine, white fir, incense cedar, Douglas-fir, California black oak, tanoak, whitethorn ceanothus, and greenleaf manzanita

Composition

Extent of the map unit: 3.7 percent

Extent of the components in the map unit:

Bonneyridge—42 percent

Chawanakee—15 percent

Lewisflat—11 percent

Minor components—32 percent

Soil Properties

Bonneyridge

Depth class: Very deep

Drainage class: Somewhat excessively drained

Geomorphic position: Ridgetops and side slopes on plutons in mountains

Parent material: Sandy residuum and colluvium derived from quartz diorite

Particle-size class: Coarse-loamy

Soil temperature regime: Mesic

Slope: 2 to 110 percent

Chawanakee

Depth class: Shallow

Drainage class: Somewhat excessively drained

Geomorphic position: Ridgetops and side slopes on plutons in mountains

Parent material: Sandy residuum and colluvium derived from quartz diorite

Particle-size class: Loamy

Soil temperature regime: Mesic

Slope: 2 to 110 percent

Lewisflat

Depth class: Very deep

Drainage class: Well drained

Geomorphic position: Ridgetops and side slopes on plutons in mountains

Parent material: Loamy residuum and colluvium derived from quartz diorite

Particle-size class: Fine-loamy

Soil temperature regime: Mesic

Slope: 2 to 50 percent

Minor Components

- Rock outcrop and Billscabin soils on ridgetops and side slopes on mountains

Use and Management

Major uses: Timber production, wildlife habitat, and watershed

Management concerns: Depth to bedrock, slope, and erodibility

Mesic Soils on Volcanic Sierra Nevada Mountains**35. Mudwash-Shakeridge-Timberisland**

Very deep and deep, nearly level to very steep, well drained soils that formed in residuum and colluvium; on mountains

Setting

Landscape: Sierra Nevada Mountains

Slope range: 0 to 70 percent

Typical vegetation: White fir, incense cedar, ponderosa pine, sugar pine, Douglas-fir, California black oak, deerbrush, whitethorn ceanothus, and greenleaf manzanita

Composition

Extent of the map unit: 0.7 percent

Extent of the components in the map unit:

Mudwash—35 percent

Shakeridge—19 percent

Timberisland—13 percent

Minor components—33 percent

Soil Properties**Mudwash**

Depth class: Very deep

Drainage class: Well drained

Geomorphic position: Ridgetops and side slopes on basalt plateaus

Parent material: Tephra over residuum and colluvium derived from Lovejoy basalt

Particle-size class: Medial over loamy

Soil temperature regime: Mesic

Slope: 0 to 50 percent

Shakeridge

Depth class: Very deep

Drainage class: Well drained

Geomorphic position: Ridgetops and side slopes on basalt plateaus

Parent material: Tephra over residuum and colluvium derived from Lovejoy basalt

Particle-size class: Medial-skeletal

Soil temperature regime: Mesic

Slope: 0 to 70 percent

Timberisland

Depth class: Deep

Drainage class: Well drained

Geomorphic position: Ridgetops and side slopes on basalt plateaus

Parent material: Tephra over residuum and colluvium derived from Lovejoy basalt

Particle-size class: Medial-skeletal

Soil temperature regime: Mesic

Slope: 0 to 30 percent

Minor Components

- Lava flows on tops of basalt plateaus
- Lumpkin and Lavatop soils on ridgetops and side slopes on basalt plateaus

Use and Management

Major uses: Timber production, wildlife habitat, and watershed

Management concerns: Slope

Frigid Soils on Volcanic Cascade Mountains

36. Bonepile

Deep, nearly level to moderately steep, well drained soils that formed in residuum; on mountains

Setting

Landscape: Cascade Mountains

Slope range: 2 to 30 percent

Typical vegetation: White fir, ponderosa pine, sugar pine, Douglas-fir, California black oak, greenleaf manzanita, Sierra chinquapin, and whitethorn ceanothus

Composition

Extent of the map unit: 0.6 percent

Extent of the components in the map unit:

Bonepile—69 percent

Minor components—31 percent

Soil Properties

Bonepile

Depth class: Deep

Drainage class: Well drained

Geomorphic position: Ridgetops on volcanic plateaus

Parent material: Tephra over residuum derived from volcanic rocks

Particle-size class: Medial-skeletal

Soil temperature regime: Frigid

Slope: 2 to 30 percent

Minor Components

- Bonepile taxadjunct soils on stream terraces in mountain valleys
- Lydon soils on ridgetops on volcanic plateaus

Use and Management

Major uses: Timber production, wildlife habitat, and watershed

Management concerns: Stones and boulders on the surface and depth to bedrock

Frigid Soils on Volcanic Sierra Nevada Mountains

37. Powderhouse-McNair-Greenwell

Moderately deep and deep, nearly level to very steep, well drained soils that formed in residuum and colluvium; on mountains

Setting

Landscape: Sierra Nevada Mountains

Slope range: 0 to 50 percent

Typical vegetation: White fir, California red fir, sugar pine, incense cedar, California black oak, Jeffrey pine, greenleaf manzanita, and whitethorn ceanothus

Composition

Extent of the map unit: 0.6 percent

Extent of the components in the map unit:

Powderhouse—43 percent

McNair—23 percent

Greenwell—18 percent

Minor components—16 percent

Soil Properties

Powderhouse

Depth class: Moderately deep

Drainage class: Well drained

Geomorphic position: Ridgetops and side slopes on volcanic plateaus

Parent material: Tephra, residuum, and colluvium derived from volcanic mudflow

Particle-size class: Medial-skeletal

Soil temperature regime: Frigid

Slope: 0 to 50 percent

McNair

Depth class: Deep

Drainage class: Well drained

Geomorphic position: Ridgetops and side slopes on volcanic plateaus

Parent material: Tephra over residuum and colluvium derived from volcanic mudflow

Particle-size class: Medial-skeletal

Soil temperature regime: Frigid

Slope: 2 to 50 percent

Greenwell

Depth class: Moderately deep

Drainage class: Well drained

Geomorphic position: Ridgetops and side slopes on volcanic plateaus

Parent material: Tephra over residuum and colluvium derived from volcanic mudflow

Particle-size class: Medial

Soil temperature regime: Frigid

Slope: 2 to 50 percent

Minor Components

- Lumpkin taxadjunct soils on tops of volcanic plateaus
- Rock outcrop on ridgetops and side slopes on volcanic plateaus

Use and Management

Major uses: Timber production, wildlife habitat, and watershed

Management concerns: Slope and depth to bedrock

Frigid Soils on Metamorphic Sierra Nevada Mountains

38. Dejonah-Stagpoint

Very deep, nearly level to very steep, well drained soils that formed in residuum and colluvium; on mountains

Setting

Landscape: Sierra Nevada Mountains

Slope range: 2 to 70 percent

Typical vegetation: White fir, California red fir, sugar pine, incense cedar, whitethorn ceanothus, greenleaf manzanita, and pinemat manzanita

Composition

Extent of the map unit: 0.7 percent

Extent of the components in the map unit:

Dejonah—39 percent

Stagpoint—39 percent

Minor components—22 percent

Soil Properties

Dejonah

Depth class: Very deep

Drainage class: Well drained

Geomorphic position: Ridgetops and side slopes on metamorphic mountains

Parent material: Tephra-influenced residuum and colluvium derived from metavolcanic and metamorphosed intrusive igneous rocks

Particle-size class: Fine-loamy

Soil temperature regime: Frigid

Slope: 2 to 70 percent

Stagpoint

Depth class: Very deep

Drainage class: Well drained

Geomorphic position: Ridgetops and side slopes on metamorphic mountains

Parent material: Tephra-influenced residuum and colluvium derived from metavolcanic and metamorphosed intrusive igneous rocks

Particle-size class: Loamy-skeletal

Soil temperature regime: Frigid

Slope: 2 to 70 percent

Minor Components

- Rogerville taxadjunct soils on side slopes on mountains

Use and Management

Major uses: Timber production, wildlife habitat, and watershed

Management concerns: Slope

Frigid Soils on Moraines in the Sierra Nevada and Cascade Mountains

39. Haploxerands, Volcanic Till-Haploxerands, Granitic Till

Moderately deep to very deep, nearly level to very steep, moderately well drained and well drained soils that formed in glacial till; on moraines on mountains

Setting

Landscape: Sierra Nevada and Cascade Mountains

Slope range: 2 to 50 percent

Typical vegetation: White fir, ponderosa pine, sugar pine, incense cedar, California red fir, California black oak, Sierra chinquapin, and greenleaf manzanita

Composition

Extent of the map unit: 0.4 percent

Extent of the components in the map unit:

Haploxerands, volcanic till—37 percent

Haploxerands, granitic till—36 percent

Minor components—27 percent

Soil Properties

Haploxerands, volcanic till

Depth class: Moderately deep to very deep

Drainage class: Moderately well drained and well drained

Geomorphic position: Ridgetops and side slopes on glacial moraines

Parent material: Bouldery, loamy glacial till derived from igneous rocks

Particle-size class: Medial and medial-skeletal

Soil temperature regime: Frigid

Slope: 2 to 50 percent

Haploxerands, granitic till

Depth class: Moderately deep to very deep

Drainage class: Moderately well drained and well drained

Geomorphic position: Ridgetops and side slopes on glacial moraines

Parent material: Bouldery, sandy glacial till derived from igneous rocks

Particle-size class: Medial and medial-skeletal

Soil temperature regime: Frigid

Slope: 2 to 50 percent

Minor Components

- Haploxerands on terraces in mountain valleys
- Aquic Xerofluvents in meadows in mountain valleys
- Rock outcrop on ridgetops and side slopes on mountains

Use and Management

Major uses: Timber production, wildlife habitat, and watershed

Management concerns: Depth to dense glacial till, slope, erodibility, and boulders

W—Water

Extent of the map unit: 3.5 percent

Detailed Soil Map Units

The map units delineated on the detailed soil maps in this survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The contrasting components are mentioned in the map unit descriptions. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Some map units from adjacent survey areas have been added to the soil legend for this survey area so that the mapping joins across survey area boundaries. Letters have been added at the end of the map symbols for these map units. The letters “co” refer to Colusa County, the letters “su” refer to Sutter County, and the letters “yu” refer to Yuba County.

Each description includes general facts about the unit and gives the principal hazards and limitations to be considered in planning for specific uses.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Gianella silt loam, 0 to 1 percent slopes, frequently flooded, is a phase of the Gianella series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes. A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Lydon-Rock outcrop complex, 50 to 70 percent slopes, is an example.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop, Pits, Lava flows, and Riverwash are examples.

Table 4 gives the acreage and proportionate extent of each map unit. Other tables give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils or miscellaneous areas.

Block Diagrams of Detailed Soil Map Units

Prepared by Andrew Conlin, Soil Scientist, Natural Resources Conservation Service.

Figures 16 to 24 illustrate the relationship of the detailed soil map units in the survey area to the geology, geography, topography, slope phases, and climate in the area. Figure 16 shows the location of block diagrams 1 to 8 (figures 17 to 24). The block diagrams were produced from the detailed soil maps. The vertical scale of the diagrams is exaggerated 2 times in relation to the horizontal scale. This exaggeration helps to more clearly illustrate the topography of the area. The representative geology is not to scale and is idealized to help explain mapping concepts. The block diagrams are not intended to replace the detailed soil maps.

Block diagram 1 (figure 17).—This diagram shows the mouth of Big Chico Creek Canyon, where the creek transitions from its steeper foothill reach to its flatter Sacramento Valley reach in Bidwell Park. The creek has cut through the volcanic Tuscan Formation and is now cutting through hard Lovejoy basalt. The resistant Lovejoy basalt confines the stream channel, and a narrow slot canyon has formed at the bottom of the wider Tuscan Canyon. As the creek leaves the confinement of the slot canyon and enters the flatter topography of the valley, the energy of the water decreases, causing sediment to be deposited. As sediment fills the channel, the channel begins to move laterally. The channel slowly migrates away from the sediment deposits, allowing the sediment to form into alluvial soils.

Block diagram 2 (figure 18).—This diagram shows a portion of the Table Mountain area, the result of stream erosion slowly cutting away basalt flow rock, exposing the underlying Lone Formation. The sediment produced from this downcutting is transported downstream to flatter surrounding areas and over time is deposited and forms alluvial soils on various alluvial landforms.

Block diagram 3 (figure 19).—This diagram shows the interface of the Northern Sierra Nevada and Southern Cascade Mountains. Volcanic flows moved down the canyon of the West Branch of the Feather River, burying Sierra Nevada rocks, and partially filled the canyon, forming a volcanic plain. Subsequent geologic erosion has cut away the original plain of volcanic rocks and has left remnants surrounded by

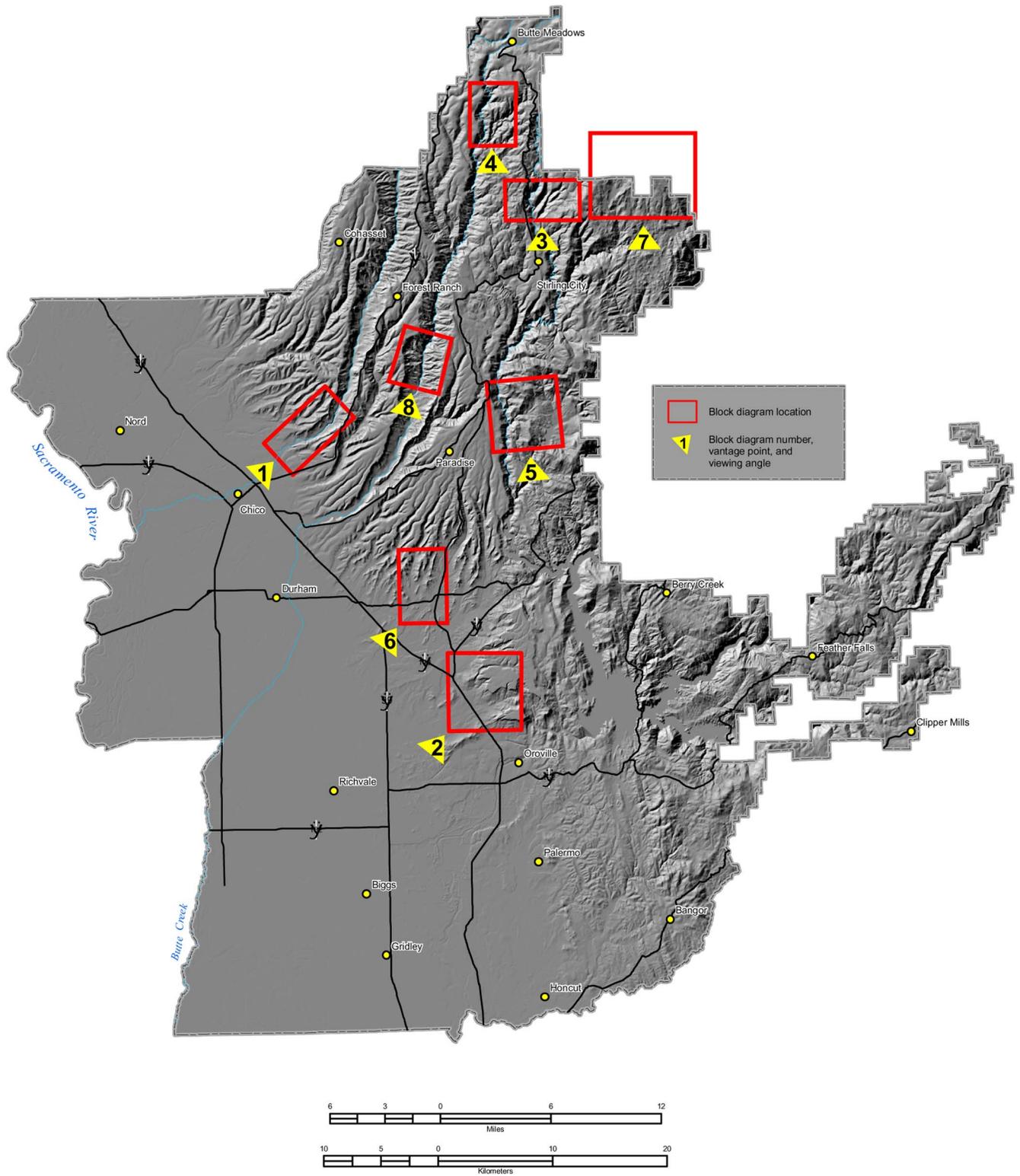
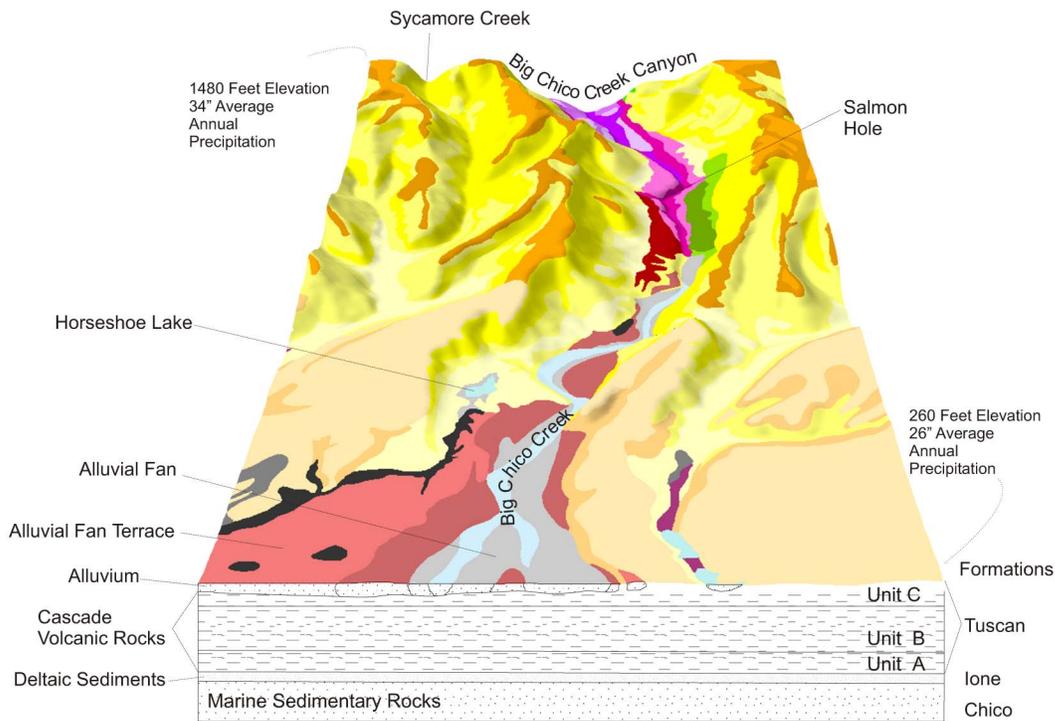


Figure 16.—Map showing locations and viewing angles of the block diagrams of detailed soil map units (figs. 17-24).

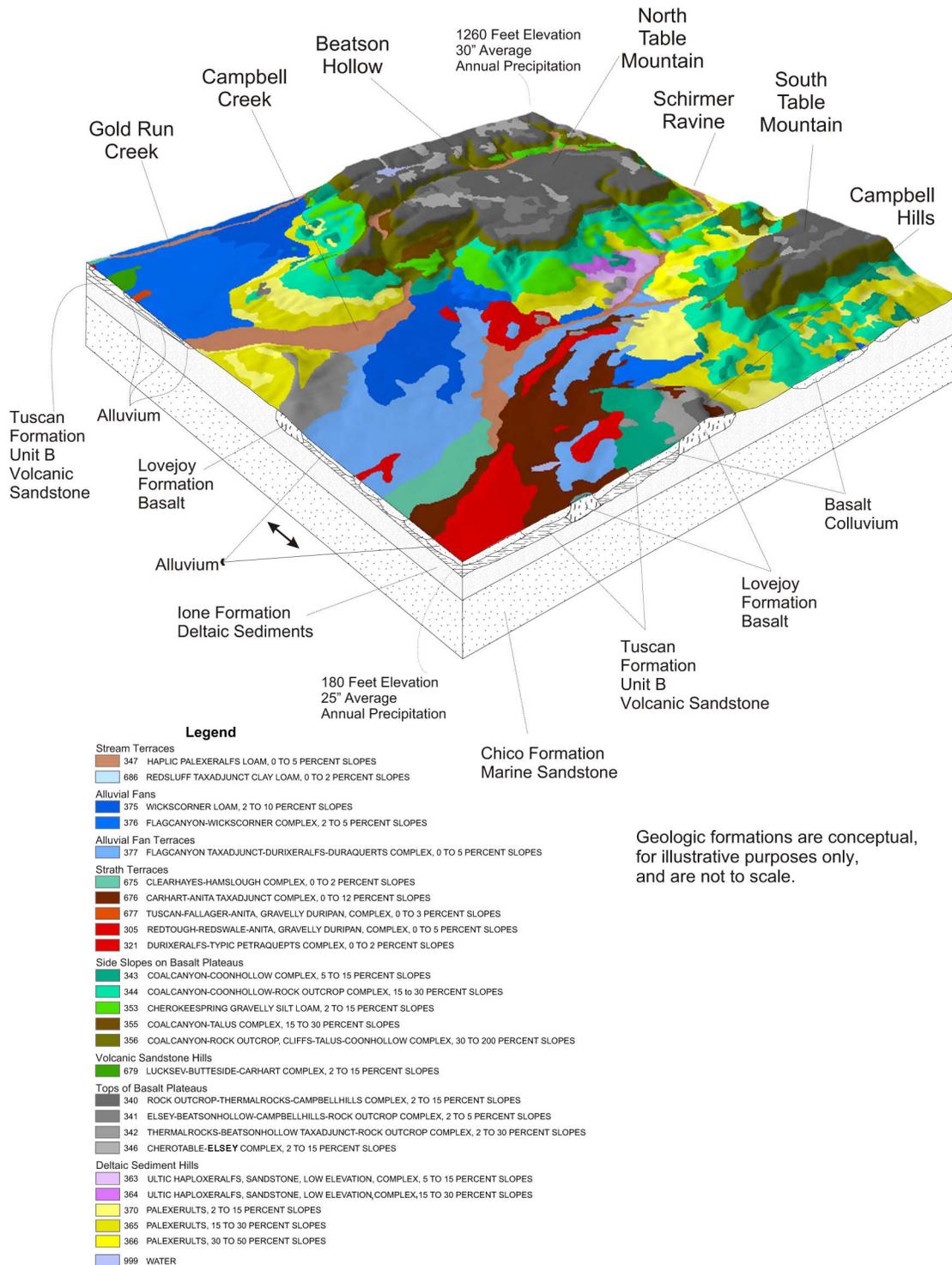


Geologic formations are conceptual, for illustrative purposes only, and are not to scale.

Legend

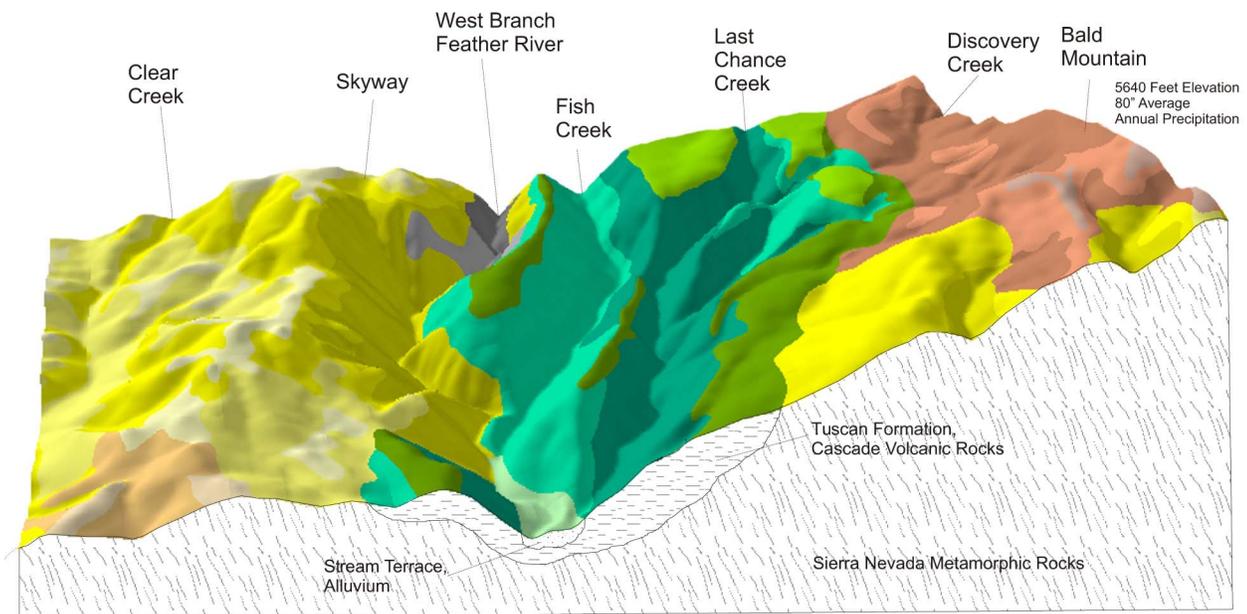
<p>Flood Plain</p> <p>991</p> <p>Alluvial Fan</p> <p>447</p> <p>Alluvial Fan Terraces</p> <p>100</p> <p>300</p> <p>302</p> <p>Strath Terraces</p> <p>675</p> <p>676</p> <p>677</p> <p>Volcanic Ridgetops</p> <p>619</p> <p>614</p> <p>615</p> <p>620</p> <p>621</p> <p>Side Slopes on Volcanic Ridges</p> <p>616</p> <p>617</p> <p>687</p> <p>622</p> <p>623</p> <p>626</p> <p>642</p> <p>643</p> <p>Basalt Flows and Escarpments in Canyons</p> <p>340</p> <p>656</p> <p>Basalt Colluvium in Canyons</p> <p>646</p> <p>647</p> <p>648</p> <p>999</p>	<p>XEROFLUVENTS, 0 TO 4 PERCENT SLOPES FREQUENTLY FLOODED</p> <p>CHARGER FINE SANDY LOAM, 0 TO 1 PERCENT SLOPES</p> <p>ANITA-GALT COMPLEX, 0 TO 3 PERCENT SLOPES</p> <p>REDSLUFF GRAVELLY LOAM, 0 TO 2 PERCENT SLOPES</p> <p>REDTOUGH GRAVELLY LOAM, 0 TO 2 PERCENT SLOPES</p> <p>CLEARHAYES-HAMSLOUGH COMPLEX, 0 TO 2 PERCENT SLOPES</p> <p>CARHART-ANITA TAXADJUNCT COMPLEX, 0 TO 12 PERCENT SLOPES</p> <p>TUSCAN-FALLAGER-ANITA, GRAVELLY DURIPAN, COMPLEX, 0 TO 3 PERCENT SLOPES</p> <p>CARHART TAXADJUNCT, 0 TO 2 PERCENT SLOPES</p> <p>DOEMILL-JOKERST COMPLEX, 0 TO 3 PERCENT SLOPES</p> <p>DOEMILL-JOKERST COMPLEX, 3 TO 8 PERCENT SLOPES</p> <p>DOEMILL-JOKERST-ULTIC HAPLOXERALS, THERMIC, COMPLEX, 3 TO 8 PERCENT SLOPES</p> <p>DOEMILL-JOKERST-ULTIC HAPLOXERALS, THERMIC, COMPLEX, 8 TO 15 PERCENT SLOPES</p> <p>JOKERST-DOEMILL-TYPIC HAPLOXERALS COMPLEX, 8 TO 15 PERCENT SLOPES</p> <p>JOKERST-DOEMILL-TYPIC HAPLOXERALS COMPLEX, 15 TO 30 PERCENT SLOPES</p> <p>XERORTHENTS, SHALLOW-TYPIC HAPLOXERALS COMPLEX, 2 TO 15 PERCENT SLOPES</p> <p>XERORTHENTS, SHALLOW-TYPIC HAPLOXERALS-ROCK OUTCROP, CLIFFS, COMPLEX, 15 TO 30 PERCENT SLOPES</p> <p>XERORTHENTS, SHALLOW-TYPIC HAPLOXERALS-ROCK OUTCROP, CLIFFS, COMPLEX, 30 TO 50 PERCENT SLOPES</p> <p>ULTIC HAPLOXERALS-ROCK STRIPE-ROCK OUTCROP, CLIFFS, COMPLEX, 30 TO 30 PERCENT SLOPES</p> <p>CHINACAMP GRAVELLY LOAM, 3 TO 15 PERCENT SLOPES</p> <p>CHINACAMP GRAVELLY LOAM, 15 TO 30 PERCENT SLOPES</p> <p>ROCK OUTCROP-THERMALROCKS-CAMPBELLHILLS COMPLEX, 2 TO 15 PERCENT SLOPES</p> <p>ROCK OUTCROP, CLIFFS-COALCANYON TAXADJUNCT COMPLEX, 15 TO 50 PERCENT SLOPES</p> <p>COALCANYON TAXADJUNCT VERY GRAVELLY LOAM, 3 TO 15 PERCENT SLOPES</p> <p>COALCANYON TAXADJUNCT VERY GRAVELLY LOAM, 15 TO 30 PERCENT SLOPES</p> <p>COALCANYON TAXADJUNCT VERY GRAVELLY LOAM, 30 TO 50 PERCENT SLOPES</p> <p>WATER</p>
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Figure 17.—Block diagram 1.



Geologic formations are conceptual, for illustrative purposes only, and are not to scale.

Figure 18.—Block diagram 2.



4000 Feet Elevation
75" Average Annual Precipitation

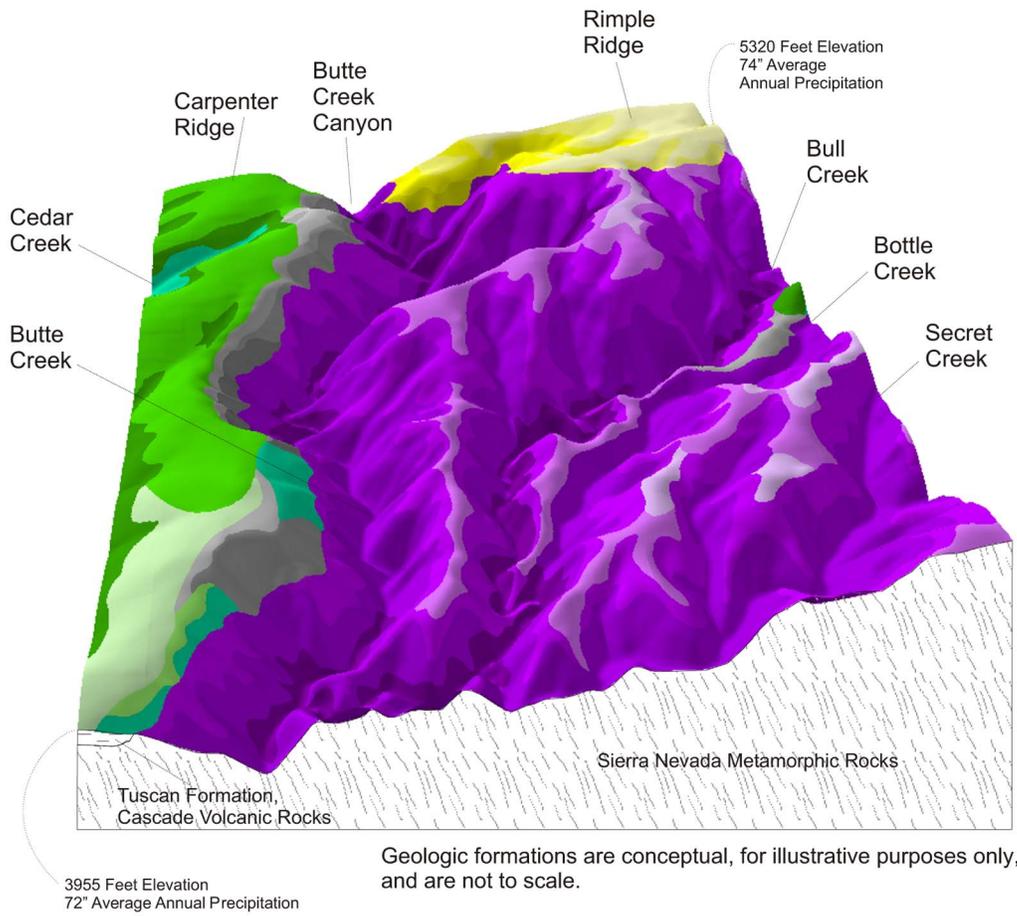
5640 Feet Elevation
80" Average Annual Precipitation

Legend

- Alluvium on Stream Terraces**
- 732 BONEPILE TAXADJUNCT, 2 TO 8 PERCENT SLOPES
- Colluvium on Side Slopes on Volcanic Ridges**
- 824 BEECEE VERY GRAVELLY LOAM, 30 TO 50 PERCENT SLOPES
- 825 BEECEE-LYDON COMPLEX, 50 TO 70 PERCENT SLOPES
- Residuum on Volcanic Ridgetops**
- 822 BONEPILE GRAVELLY MEDIAL LOAM, 2 TO 15 PERCENT SLOPES
- 823 BONEPILE GRAVELLY MEDIAL LOAM, 15 TO 30 PERCENT SLOPES
- Residuum and Colluvium on Metamorphic Mountains**
- 811 POWELLTON-TOADTOWN COMPLEX, 3 TO 15 PERCENT SLOPES
- 812 POWELLTON-TOADTOWN COMPLEX, 15 TO 30 PERCENT SLOPES
- 801 OBSTRUCTION GRAVELLY SANDY LOAM, 3 TO 15 PERCENT SLOPES
- 802 OBSKEL-OBSTRUCTION COMPLEX, 15 TO 30 PERCENT SLOPES
- 803 OBSKEL-OBSTRUCTION COMPLEX, 30 TO 50 PERCENT SLOPES
- 804 OBSKEL-OBSTRUCTION-RETSONGULCH COMPLEX, 50 TO 70 PERCENT SLOPES
- 808 BOTTLEHILL-WALKERMINE-LOGTRAIN COMPLEX, 50 TO 70 PERCENT SLOPES
- 809 WALKERMINE-BOTTLEHILL-LOGTRAIN-ROCK OUTCROP COMPLEX, 70 TO 110 PERCENT SLOPES
- 940 DEJONAH-STAGPOINT COMPLEX, 2 TO 15 PERCENT SLOPES
- 941 DEJONAH-STAGPOINT COMPLEX, 15 TO 30 PERCENT SLOPES
- 942 STAGPOINT-DEJONAH COMPLEX, 30 TO 50 PERCENT SLOPES

Geologic formations are conceptual, for illustrative purposes only, and are not to scale.

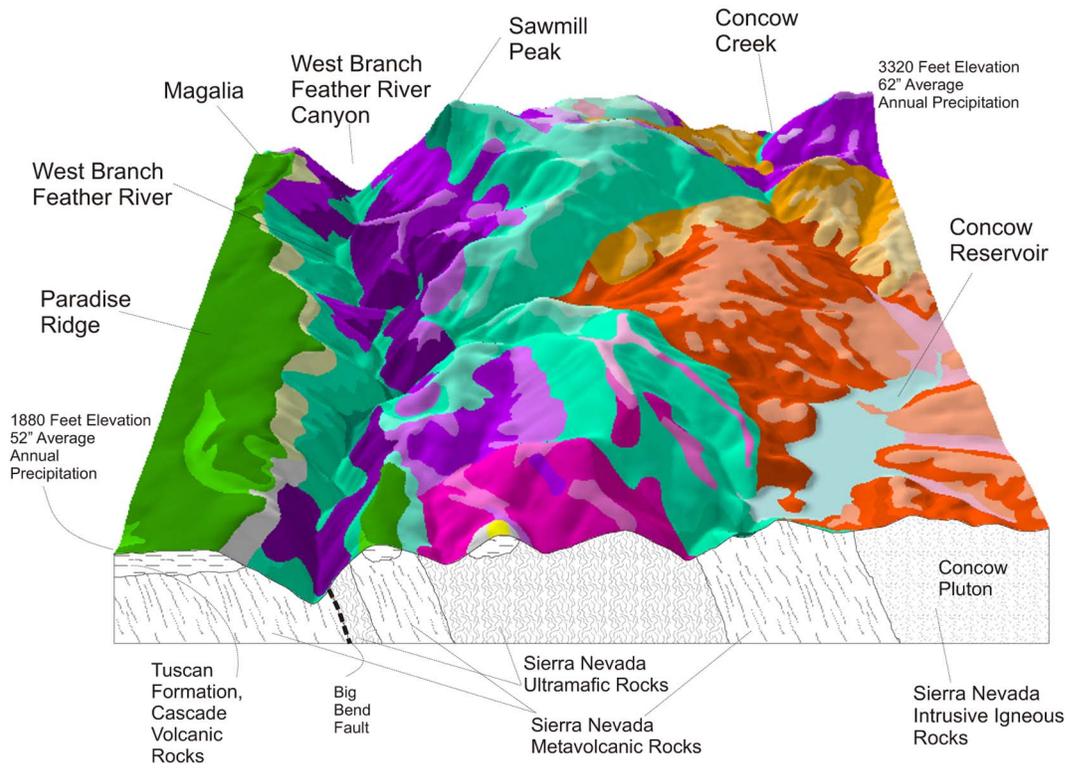
Figure 19.—Block diagram 3.



Legend

- Colluvium on Side Slopes on Volcanic Ridges in Cascade Mountains
 - 819 LYDON-ROCK OUTCROP COMPLEX, 30 TO 50 PERCENT SLOPES
 - 820 LYDON-ROCK OUTCROP COMPLEX, 50 TO 70 PERCENT SLOPES
 - 824 BEECEE VERY GRAVELLY MEDIAL LOAM, 30 TO 50 PERCENT SLOPES
- Residuum on Volcanic Ridgetops in Cascade Mountains
 - 814 MOUNTYANA GRAVELLY LOAM, 2 TO 15 PERCENT SLOPES
 - 815 MOUNTYANA GRAVELLY LOAM, 15 TO 30 PERCENT SLOPES
 - 817 LYDON VERY GRAVELLY MEDIAL COARSE SANDY LOAM, 2 TO 15 PERCENT SLOPES
 - 818 LYDON VERY GRAVELLY MEDIAL COARSE SANDY LOAM, 15 TO 30 PERCENT SLOPES
 - 826 REDBONE GRAVELLY MEDIAL SANDY LOAM, 3 TO 15 PERCENT SLOPES
 - 827 REDBONE GRAVELLY MEDIAL SANDY LOAM, 15 TO 30 PERCENT SLOPES
- Residuum and Colluvium on Ridgetops and Side Slopes on Metamorphic Sierra Nevada Mountains
 - 801 OBSTRUCTION GRAVELLY SANDY LOAM, 3 TO 15 PERCENT SLOPES
 - 802 OBSKEL-OBSTRUCTION COMPLEX, 15 TO 30 PERCENT SLOPES
 - 803 OBSKEL-OBSTRUCTION COMPLEX, 30 TO 50 PERCENT SLOPES
 - 804 OBSKEL-OBSTRUCTION-RETSONGULCH COMPLEX, 50 TO 70 PERCENT SLOPES
 - 805 BOTTLEHILL-WALKERMINE-LOGTRAIN COMPLEX, 3 TO 15 PERCENT SLOPES
 - 806 BOTTLEHILL-WALKERMINE-LOGTRAIN COMPLEX, 15 TO 30 PERCENT SLOPES
 - 807 BOTTLEHILL-LOGTRAIN-WALKERMINE COMPLEX, 30 TO 50 PERCENT SLOPES
 - 808 BOTTLEHILL-WALKERMINE-LOGTRAIN COMPLEX, 50 TO 70 PERCENT SLOPES
 - 809 WALKERMINE-BOTTLEHILL-LOGTRAIN-ROCK OUTCROP COMPLEX, 70 TO 110 PERCENT SLOPES

Figure 20.—Block diagram 4.

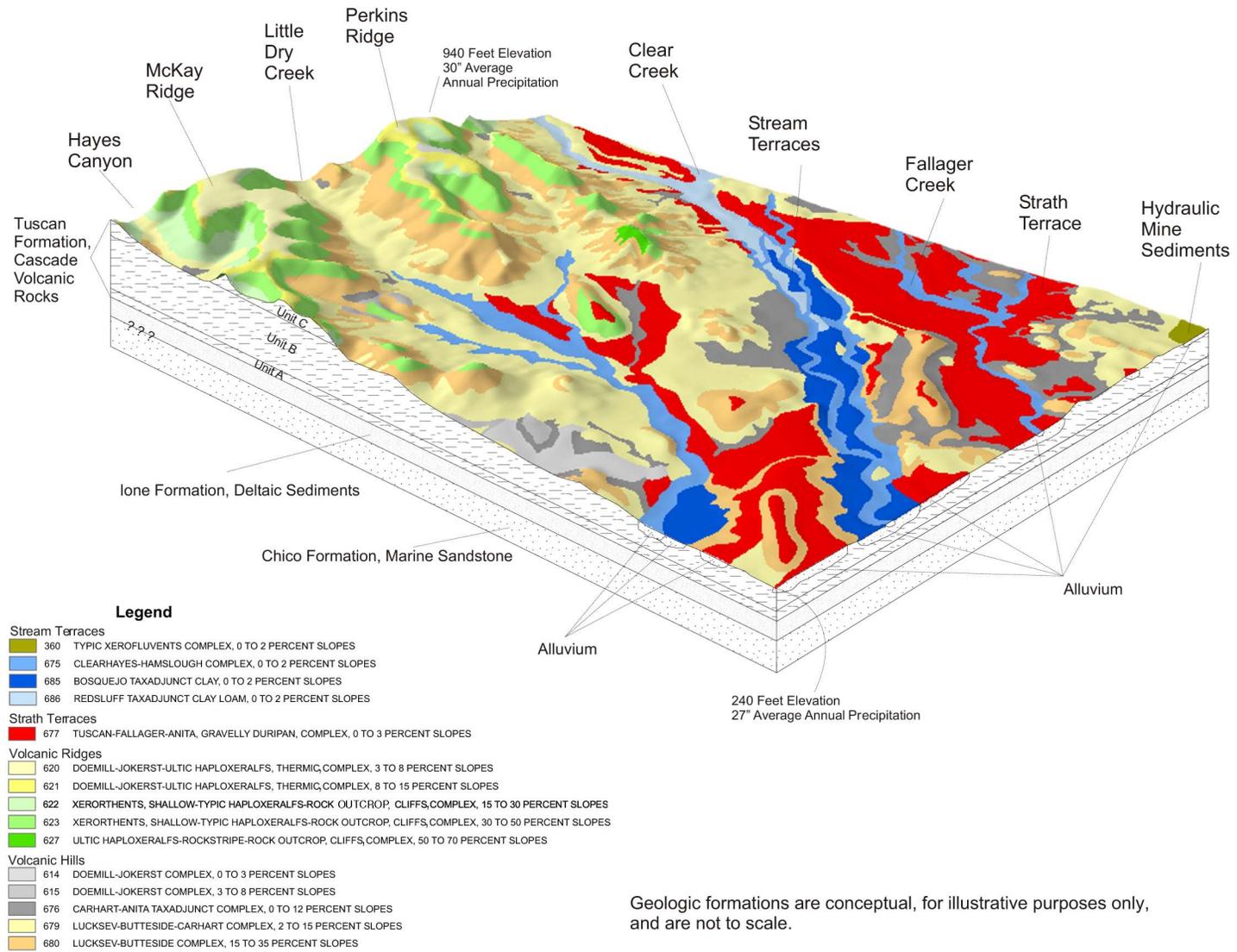


Legend

- Stream Terraces**
- 735 FLUVAQUENTS, LOAMY, 0 TO 3 PERCENT SLOPES
- Volcanic Ridges**
- 829 PARADISO LOAM, 2 TO 15 PERCENT SLOPES
- 830 PARADISO LOAM, 15 TO 30 PERCENT SLOPES
- 652 SCHOTT-ROCK OUTCROP COMPLEX, 30 TO 50 PERCENT SLOPES
- 624 ULTIC HAPLOXERALS, MESIC - ROCKSTRIPE COMPLEX, 2 TO 15 PERCENT SLOPES
- 625 ULTIC HAPLOXERALS, MESIC - ROCKSTRIPE COMPLEX, 15 TO 30 PERCENT SLOPES
- 626 ULTIC HAPLOXERALS-ROCKSTRIPE-ROCK OUTCROP, CLIFFS, COMPLEX, 30 TO 50 PERCENT SLOPES
- Granitic Mountains**
- 206 ISLANDBAR-CHAWANAKEE COMPLEX, 3 TO 15 PERCENT SLOPES
- 207 ISLANDBAR-CHAWANAKEE COMPLEX, 15 TO 30 PERCENT SLOPES
- 208 ISLANDBAR-CHAWANAKEE COMPLEX, 30 TO 50 PERCENT SLOPES
- 210 FEATHERFALLS-ISLANDBAR COMPLEX, 2 TO 15 PERCENT SLOPES
- 211 FEATHERFALLS-ISLANDBAR COMPLEX, 15 TO 30 PERCENT SLOPES
- 212 FEATHERFALLS-ISLANDBAR COMPLEX, 30 TO 50 PERCENT SLOPES
- Ultramafic Mountains**
- 661 MILLERIDGE-BOXROBBER COMPLEX, 3 TO 15 PERCENT SLOPES
- 662 MILLERIDGE-BOXROBBER COMPLEX, 15 TO 30 PERCENT SLOPES
- 663 MILLERIDGE-BOXROBBER COMPLEX, 30 TO 50 PERCENT SLOPES
- 664 MILLERIDGE-BOXROBBER COMPLEX, 50 TO 70 PERCENT SLOPES
- 684 TYPIC HAPLOXERALS, MAGNESIC, LOW ELEVATION-EARLAL-ROCK OUTCROP COMPLEX, 15 TO 30 PERCENT SLOPES
- 702 CERPONE-TYPIC HAPLOXERALS, MAGNESIC-EARLAL COMPLEX, 3 TO 15 PERCENT SLOPES
- 703 CERPONE-TYPIC HAPLOXERALS, MAGNESIC-EARLAL-ROCK OUTCROP COMPLEX, 15 TO 30 PERCENT SLOPES
- 704 TYPIC HAPLOXERALS, MAGNESIC-EARLAL-CERPONE-ROCK OUTCROP COMPLEX, 30 TO 50 PERCENT SLOPES
- 705 TYPIC HAPLOXERALS, MAGNESIC-EARLAL-CERPONE-ROCK OUTCROP COMPLEX, 50 TO 80 PERCENT SLOPES
- Metavolcanic Mountains**
- 716 GRIFFGULCH-SURNUF COMPLEX, 3 TO 15 PERCENT SLOPES
- 717 GRIFFGULCH-SURNUF COMPLEX, 15 TO 30 PERCENT SLOPES
- 718 GRIFFGULCH-SURNUF-SPINE TAXADJUNCT COMPLEX, 30 TO 50 PERCENT SLOPES
- 719 GRIFFGULCH-SURNUF-SPINE TAXADJUNCT COMPLEX, 50 TO 70 PERCENT SLOPES
- 720 DYSTROXEREPTS-HAPLOXERALS-ROCK OUTCROP COMPLEX, 70 TO 110 PERCENT SLOPES
- 999 WATER

Geologic formations are conceptual, for illustrative purposes only, and are not to scale.

Figure 21.—Block diagram 5.



Geologic formations are conceptual, for illustrative purposes only, and are not to scale.

Figure 22.—Block diagram 6.

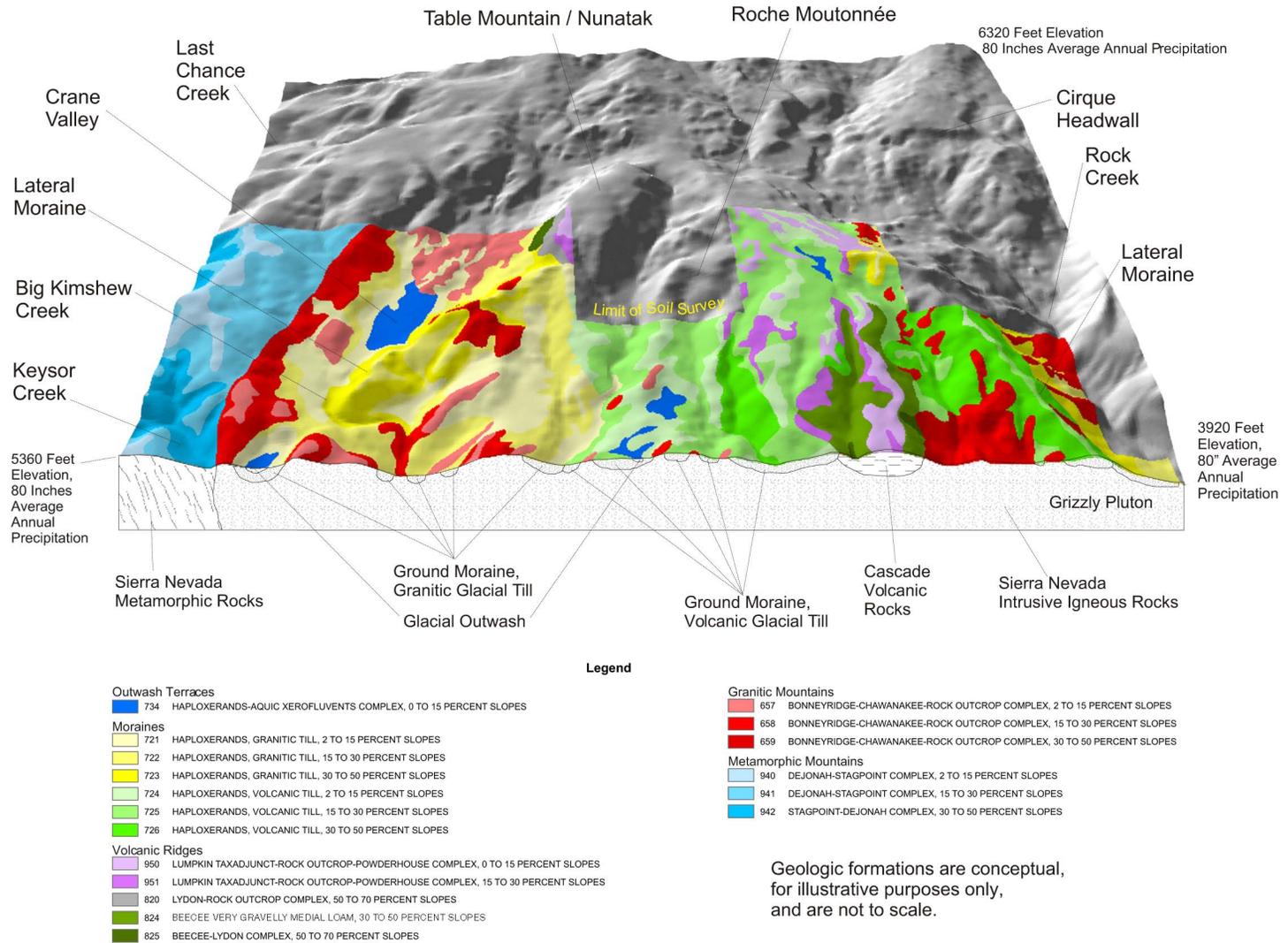
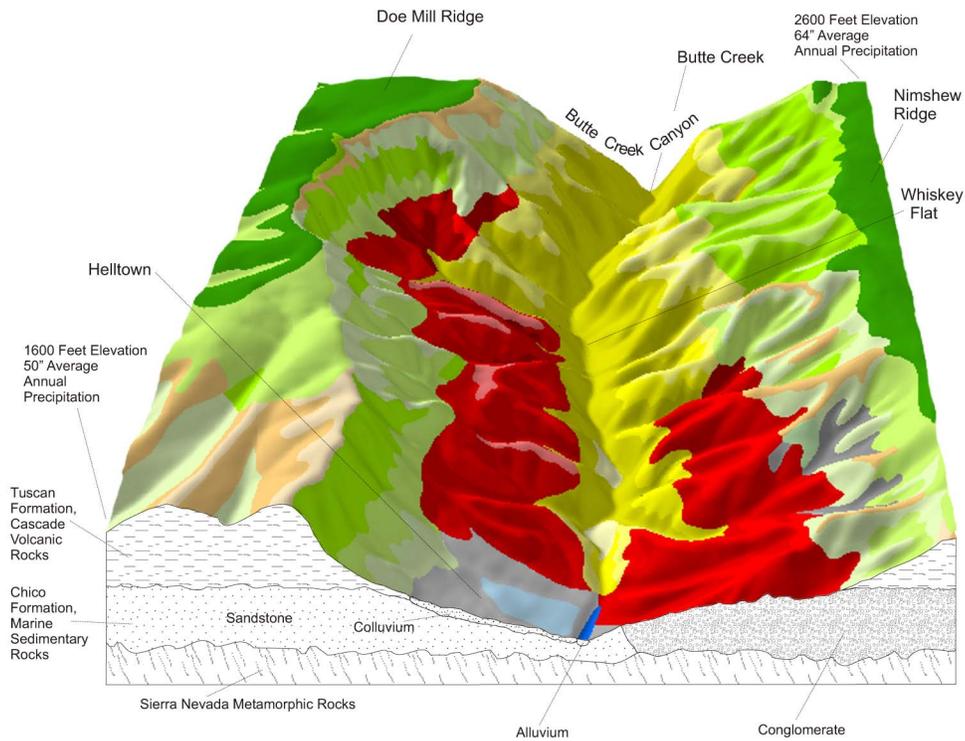


Figure 23.—Block diagram 7.



Legend

- Alluvium on Flood Plains**
 - 991 XEROLUVENTS, 0 TO 4 PERCENT SLOPES, FREQUENTLY FLOODED
- Colluvium on Foothills in Canyons**
 - 629 SLIDELAND GRAVELLY LOAM, 3 TO 15 PERCENT SLOPES
 - 643 CHINACAMP GRAVELLY LOAM, 15 TO 30 PERCENT SLOPES
 - 644 CHINACAMP GRAVELLY LOAM, 30 TO 50 PERCENT SLOPES
 - 645 CHINACAMP GRAVELLY LOAM, 50 TO 70 PERCENT SLOPES
- Residuum and Colluvium on Volcanic Ridges**
 - 623 XERORTHENTS, SHALLOW-TYPIC HAPLOXERALS-ROCK OUTCROP, CLIFFS, COMPLEX, 30 TO 50 PERCENT SLOPES
 - 624 ULTIC HAPLOXERALS, MESIC - ROCKSTRIPE COMPLEX, 2 TO 15 PERCENT SLOPES
 - 625 ULTIC HAPLOXERALS, MESIC - ROCKSTRIPE COMPLEX, 15 TO 30 PERCENT SLOPES
 - 626 ULTIC HAPLOXERALS-ROCKSTRIPE-ROCK OUTCROP, CLIFFS, COMPLEX, 30 TO 50 PERCENT SLOPES
 - 627 ULTIC HAPLOXERALS-ROCKSTRIPE-ROCK OUTCROP, CLIFFS, COMPLEX, 50 TO 70 PERCENT SLOPES
 - 628 ROCKSTRIPE-ULTIC HAPLOXERALS-ROCK OUTCROP, CLIFFS, COMPLEX, 70 TO 100 PERCENT SLOPES
 - 650 SCHOTT VERY GRAVELLY LOAM, 3 TO 15 PERCENT SLOPES
 - 651 SCHOTT VERY GRAVELLY LOAM, 15 TO 30 PERCENT SLOPES
 - 652 SCHOTT-ROCK OUTCROP COMPLEX, 30 TO 50 PERCENT SLOPES
 - 829 PARADISO LOAM, 2 TO 15 PERCENT SLOPES
 - 830 PARADISO LOAM, 15 TO 30 PERCENT SLOPES
- Residuum and Colluvium on Marine Conglomerate in Canyons**
 - 632 ULTIC HAPLOXERALS, CONGLOMERATE, COMPLEX, 3 TO 15 PERCENT SLOPES
 - 633 ULTIC HAPLOXERALS, CONGLOMERATE, COMPLEX, 15 TO 30 PERCENT SLOPES
 - 634 ULTIC HAPLOXERALS, CONGLOMERATE, COMPLEX, 30 TO 50 PERCENT SLOPES
 - 635 ULTIC HAPLOXERALS, CONGLOMERATE, COMPLEX, 50 TO 70 PERCENT SLOPES
- Residuum and Colluvium on Metamorphic Rocks in Canyons**
 - 670 OROSHORE-MOUNTHOPE-DUNSTONE COMPLEX, 15 TO 30 PERCENT SLOPES
 - 671 OROSHORE-MOUNTHOPE-DUNSTONE COMPLEX, 30 TO 50 PERCENT SLOPES
 - 672 OROSHORE-MOUNTHOPE-DUNSTONE COMPLEX, 50 TO 70 PERCENT SLOPES
 - 720 DYSTROXEREPTS-HAPLOXERALS-ROCK OUTCROP COMPLEX, 70 TO 110 PERCENT SLOPES

Geologic formations are conceptual, for illustrative purposes only, and are not to scale.

Figure 24.—Block diagram 8.

steep canyons. The area of alluvium shown near the bottom of the diagram is a bar of sediment deposited in the flatter volcanic reach below the steeper metamorphic reach.

Block diagram 4 (figure 20).—This diagram shows the topographic difference between some of the volcanic Cascade and metamorphic Sierra Nevada landforms. Stream channels cut across the grain of the nearly vertically oriented metamorphic Sierra Nevada rocks. The resistance of the metamorphic rocks deflects the stream from side to side, forming an irregular topography. The volcanic flows traveled horizontally and buried the Sierra Nevada rocks, forming a dissected plateau.

Block diagram 5 (figure 21).—This diagram shows the relationships between the Cascade volcanic flows and the metamorphic and granitic Sierra Nevada rocks. The flatter volcanic flows on the left buried the folded metamorphic rocks in the middle. The uniform intrusive igneous rocks weather to soils that are less resistant to geologic erosion and produce subtle, more evenly developed relief.

Block diagram 6 (figure 22).—This diagram shows the transition from the volcanic foothills to the flatter topography of the strath terraces adjacent to the Sacramento Valley. In the steeper upper reaches, the stream channels are confined on the canyon bottoms and begin to migrate laterally as the gradient decreases. As the stream channels meander with lower energy, they deposit sediment, forming various alluvial soils and landforms over time.

Block diagram 7 (figure 23).—This diagram shows a series of glacial moraines. Early glaciers scoured and partially removed the original volcanic flows and produced glacial till derived mostly from volcanic rocks. Subsequent glaciers formed on the exposed underlying pluton and produced glacial till derived mostly from intrusive igneous rocks.

Block diagram 8 (figure 24).—This diagram shows the stretch of Butte Creek Canyon where the creek has cut through volcanic flows, exposing underlying marine sedimentary rocks and Sierran metamorphic rocks. The upstream portion of the marine sedimentary rocks is conglomerate, the gravelly and cobbly facies. The downstream portion is sandstone, the sand facies. The conglomerate erodes one clast at a time and forms steep ravines. The sandstone holds water and often gives way in landslides and becomes buried by the colluvium from the rocks above.

100—Anita-Galt complex, 0 to 3 percent slopes

Map Unit Setting

General location: Northwestern Butte County

Major uses: Livestock grazing, wildlife habitat, and watershed

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 170 to 340 feet (52 to 104 meters)

Mean annual precipitation: 23 to 27 inches (584 to 686 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 250 days

Map Unit Composition

Anita clay—60 percent

Galt clay—25 percent

Minor components—15 percent

Characteristics of Anita Clay

Slope: 0 to 3 percent

Geomorphic position: Drainageways and depressions on fan terraces

Parent material: Clayey alluvium over cemented, loamy alluvium derived from volcanic rocks

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Clay

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, well rounded gravel, 0 to 25 percent well rounded cobbles, 0 to 2 percent well rounded stones

Depth to a restrictive feature (duripan): 10 to 20 inches

Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Occasional

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 20 inches

Available water capacity: Very low (about 2.2 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 6s-5

Land capability, nonirrigated: 6s-5

Storie index: 3 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

A1—0 to 1 inch; clay

A2—1 to 3 inches; clay

Bss1—3 to 10 inches; clay

Bss2—10 to 15 inches; clay

2Bkqm—15 to 20 inches; duripan

Characteristics of Galt Clay

Slope: 0 to 3 percent

Geomorphic position: Drainageways and depressions on fan terraces

Parent material: Clayey alluvium over cemented, loamy alluvium derived from volcanic rocks

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Clay

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (duripan): 20 to 40 inches

Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Occasional

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 40 inches

Available water capacity: Low (about 4.8 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Storie index: 10 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

- A1—0 to 3 inches; clay
- A2—3 to 13 inches; clay
- Bss—13 to 29 inches; clay
- Bkss—29 to 32 inches; clay
- 2Bkqm—32 to 39 inches; duripan

Minor Components in Map Unit 100**Bosquejo clay and similar soils***Composition:* 3 percent*Slope:* 0 to 3 percent*Geomorphic position:* Drainageways and depressions on fan terraces*Hydric soil status:* Hydric**Areas where a duripan or volcanic sediments crop out***Composition:* 2 percent*Slope:* 0 to 3 percent*Geomorphic position:* Fan terraces*Hydric soil status:* Not hydric**Igo loam and similar soils***Composition:* 2 percent*Slope:* 0 to 3 percent*Geomorphic position:* Fan terraces*Hydric soil status:* Not hydric**Tuscan gravelly loam and similar soils***Composition:* 2 percent*Slope:* 0 to 3 percent*Geomorphic position:* Fan terraces*Hydric soil status:* Not hydric**Soils that are frequently ponded for long periods***Composition:* 2 percent*Slope:* 0 to 3 percent*Geomorphic position:* Vernal pools on fan terraces*Hydric soil status:* Hydric**Anita taxadjunct clay and similar soils***Composition:* 2 percent*Slope:* 0 to 3 percent*Geomorphic position:* Toeslopes on volcanic ridges*Hydric soil status:* Hydric**Soils that have a gravelly duripan***Composition:* 2 percent*Slope:* 0 to 3 percent*Geomorphic position:* Fan terraces*Hydric soil status:* Hydric**104—Bosquejo clay, 0 to 1 percent slopes*****Map Unit Setting****General location:* Northwestern Butte County*Major uses:* Row crops, grain crops, hay, and orchard crops*Major land resource area:* 17

Landscape: Sacramento Valley

Elevation: 110 to 190 feet (35 to 59 meters)

Mean annual precipitation: 21 to 25 inches (533 to 635 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 240 to 250 days

Map Unit Composition

Bosquejo clay—85 percent

Minor components—15 percent

Characteristics of Bosquejo Clay

Slope: 0 to 1 percent

Geomorphic position: Interfan basins

Parent material: Clayey alluvium over loamy alluvium derived from volcanic rocks

Observed vegetation: Row crops and prune and almond orchards

Texture of the surface layer: Clay

Percentage of the surface covered by rock fragments: None

Restrictive feature: None identified

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Rare

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 12 to 60 inches

Available water capacity: High (about 9.7 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 2w-2

Land capability, nonirrigated: 3w-2

Storie index: 35 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

Ap—0 to 8 inches; clay

Bss1—8 to 19 inches; clay

Bss2—19 to 24 inches; clay

2Bk—24 to 37 inches; silty clay

2Bw1—37 to 44 inches; clay loam

2Bw2—44 to 46 inches; loam

2Bq—46 to 60 inches; loam

Minor Components in Map Unit 104

Busacca clay loam and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Distal alluvial fans

Hydric soil status: Not hydric

Galt clay and similar soils

Composition: 3 percent

Slope: 0 to 1 percent

Geomorphic position: Fan terraces

Hydric soil status: Hydric

Haploxerolls clay loam and similar soils*Composition:* 3 percent*Slope:* 0 to 1 percent*Geomorphic position:* Alluvial fans*Hydric soil status:* Not hydric**Conejo clay loam and similar soils***Composition:* 2 percent*Slope:* 0 to 1 percent*Geomorphic position:* Distal alluvial fans*Hydric soil status:* Not hydric**Kusalslough silt loam and similar soils***Composition:* 1 percent*Slope:* 0 to 1 percent*Geomorphic position:* Flood plains*Hydric soil status:* Not hydric**Edjobe silty clay and similar soils***Composition:* 1 percent*Slope:* 0 to 1 percent*Geomorphic position:* Flood basins*Hydric soil status:* Hydric**105—Busacca clay loam, 0 to 1 percent slopes*****Map Unit Setting****General location:* Northwestern Butte County*Major uses:* Irrigated pasture, row crops, grain crops, orchard crops, and homesite development*Major land resource area:* 17*Landscape:* Sacramento Valley*Elevation:* 120 to 245 feet (37 to 75 meters)*Mean annual precipitation:* 20 to 27 inches (508 to 686 millimeters)*Mean annual air temperature:* 61 to 63 degrees F (16 to 17 degrees C)*Frost-free period:* 245 to 255 days***Map Unit Composition***

Busacca clay loam—85 percent

Minor components—15 percent

Characteristics of Busacca Clay Loam*Slope:* 0 to 1 percent*Geomorphic position:* Distal alluvial fans*Parent material:* Clayey alluvium over loamy alluvium derived from igneous, metamorphic, and sedimentary rocks*Observed vegetation:* Almond and prune orchards, pasture grasses, wheat, and valley oak*Texture of the surface layer:* Clay loam*Percentage of the surface covered by rock fragments:* None*Restrictive feature:* None identified*Shrink-swell potential:* Moderate (LEP of 3 to less than 6)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* Rare

Annual ponding frequency: Occasional
Depth to a water table (zone of saturation): 30 to 80 inches
Available water capacity: Very high (about 11.3 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Negligible

Interpretive groups

Land capability, irrigated: 2s-2
Land capability, nonirrigated: 3s-2
Storie index: 76 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile

Ap—0 to 3 inches; clay loam
 A—3 to 8 inches; clay loam
 Bw1—8 to 16 inches; clay loam
 Bw2—16 to 28 inches; silty clay loam
 Bw3—28 to 43 inches; silty clay loam
 Bw4—43 to 60 inches; clay loam
 Bw5—60 to 72 inches; clay loam

Minor Components in Map Unit 105

Bosquejo clay and similar soils

Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Interfan basins
Hydric soil status: Not hydric

Conejo clay loam and similar soils

Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Distal alluvial fans
Hydric soil status: Not hydric

Edjobe silty clay and similar soils

Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

108—Tuscan-Igo-Anita complex, 0 to 3 percent slopes

Map Unit Setting

General location: Northwestern Butte County
Major uses: Livestock grazing, wildlife habitat, and watershed
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 170 to 195 feet (52 to 60 meters)
Mean annual precipitation: 23 inches (584 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 250 days

Map Unit Composition

Tuscan gravelly loam—45 percent

Igo gravelly loam—20 percent
 Anita clay—15 percent
 Minor components—20 percent

Characteristics of Tuscan Gravelly Loam

Slope: 0 to 3 percent
Geomorphic position: Fan terraces
Parent material: Loamy alluvium over clayey alluvium over cemented, gravelly alluvium derived from volcanic rocks
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 25 percent medium, rounded gravel, 0 to 5 percent rounded cobbles
Depth to a restrictive feature (duripan): 10 to 20 inches
Shrink-swell potential: High (LEP of 6 to 9)
Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 2 to 20 inches
Available water capacity: Very low (about 1.5 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7s-8
Land capability, nonirrigated: 7s-8
Storie index: 6 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile

A—0 to 2 inches; gravelly loam
 Bt1—2 to 4 inches; clay loam
 Bt2—4 to 7 inches; gravelly clay
 Bt3—7 to 11 inches; cobbly clay
 2Bqm—11 inches; cemented, gravelly duripan

Characteristics of Igo Gravelly Loam

Slope: 0 to 3 percent
Geomorphic position: Fan terraces
Parent material: Loamy alluvium over cemented, gravelly alluvium derived from volcanic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 2 to 50 percent medium, rounded gravel, 0 to 5 percent rounded cobbles
Depth to a restrictive feature (duripan): 4 to 10 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)
Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 2 to 10 inches
Available water capacity: Very low (about 1.3 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

*Interpretive groups**Land capability, irrigated:* 7s-8*Land capability, nonirrigated:* 7s-8*Storie index:* 5 (revised)*Hydric soil status:* Not hydric*Hydrologic soil group:* D*Typical profile*

A—0 to 1 inch; gravelly loam

Bt1—1 to 5 inches; gravelly clay loam

Bt2—5 to 9 inches; gravelly clay loam

2Bqm—9 inches; duripan

Characteristics of Anita Clay*Slope:* 0 to 3 percent*Geomorphic position:* Depressions and swales on fan terraces*Parent material:* Clayey alluvium over cemented, loamy alluvium derived from volcanic rocks*Observed vegetation:* Annual grasses and forbs*Texture of the surface layer:* Clay*Percentage of the surface covered by rock fragments:* 0 to 10 percent coarse, well rounded gravel, 0 to 25 percent well rounded cobbles, 0 to 2 percent well rounded stones*Depth to a restrictive feature (duripan):* 10 to 20 inches*Shrink-swell potential:* Very high (LEP of more than 9)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* None*Annual ponding frequency:* Frequent*Depth to a water table (zone of saturation):* 0 to 20 inches*Available water capacity:* Very low (about 2.2 inches)*Natural drainage class:* Poorly drained*Surface runoff (bare conditions):* Very high*Interpretive groups**Land capability, irrigated:* 6s-5*Land capability, nonirrigated:* 6s-5*Storie index:* 3 (revised)*Hydric soil status:* Hydric*Hydrologic soil group:* D*Typical profile*

A1—0 to 1 inch; clay

A2—1 to 3 inches; clay

Bss1—3 to 10 inches; clay

Bss2—10 to 15 inches; clay

2Bkqm—15 to 20 inches; duripan

Minor Components in Map Unit 108**Redtough and similar soils***Composition:* 11 percent*Slope:* 0 to 3 percent*Geomorphic position:* Fan terraces*Hydric soil status:* Not hydric**Areas where a duripan or volcanic sediments crop out***Composition:* 5 percent

Slope: 0 to 3 percent
Geomorphic position: Fan terraces
Hydric soil status: Not hydric

Soils that formed in human-transported fill more than 60 inches thick

Composition: 2 percent
Slope: 0 to 3 percent
Geomorphic position: Ripped and leveled fan terraces
Hydric soil status: Not hydric

Tuscan taxadjunct and similar soils

Composition: 2 percent
Slope: 0 to 3 percent
Geomorphic position: Fan terraces
Hydric soil status: Not hydric

109—Bosquejo clay loam, 0 to 1 percent slopes

Map Unit Setting

General location: Northwestern Butte County
Major uses: Orchard and grain crops
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 140 to 200 feet (43 to 62 meters)
Mean annual precipitation: 22 to 24 inches (559 to 610 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 240 to 250 days

Map Unit Composition

Bosquejo clay loam—85 percent
 Minor components—15 percent

Characteristics of Bosquejo Clay Loam

Slope: 0 to 1 percent
Geomorphic position: Interfan basins
Parent material: Clayey alluvium over loamy alluvium derived from volcanic rocks
Observed vegetation: Grain crops and prune and almond orchards
Texture of the surface layer: Clay loam
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)
Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
 Annual flooding frequency: Rare
 Annual ponding frequency: Occasional
 Depth to a water table (zone of saturation): 12 to 60 inches
 Available water capacity: High (about 9.4 inches)
 Natural drainage class: Somewhat poorly drained
 Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 2w-2
Land capability, nonirrigated: 3w-2
Storie index: 62 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

Ap—0 to 5 inches; clay loam

Bss1—5 to 24 inches; clay

Bss2—24 to 40 inches; clay

2Bw—40 to 60 inches; loam

Minor Components in Map Unit 109

Haploxerolls clay loam and similar soils

Composition: 10 percent

Slope: 0 to 1 percent

Geomorphic position: Alluvial fans

Hydric soil status: Not hydric

Soils that are occasionally flooded

Composition: 3 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Hydric soil status: Not hydric

Bosquejo taxadjunct clay and similar soils

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Stream terraces

Hydric soil status: Not hydric

110—Bosquejo silt loam, 0 to 1 percent slopes, overwash, occasionally flooded

Map Unit Setting

General location: Northwestern Butte County

Major uses: Row crops and orchard crops

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 131 to 135 feet (40 to 41 meters)

Mean annual precipitation: 21 to 22 inches (533 to 559 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 240 to 250 days

Map Unit Composition

Bosquejo silt loam, overwash, occasionally flooded—90 percent

Minor components—10 percent

Characteristics of Bosquejo Silt Loam, Overwash, Occasionally Flooded

Slope: 0 to 1 percent

Geomorphic position: Flood plains

Parent material: Silty alluvium derived from igneous, metamorphic, and sedimentary rocks over clayey alluvium over loamy alluvium derived from volcanic rocks

Observed vegetation: Row crops, almond orchards, and walnut orchards

Texture of the surface layer: Silt loam

Percentage of the surface covered by rock fragments: None

Restrictive feature: None identified

Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Occasional

Annual ponding frequency: Occasional

Depth to a water table (zone of saturation): 12 to 60 inches

Available water capacity: Very high (about 10.3 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Negligible

Interpretive groups

Land capability, irrigated: 2w-2

Land capability, nonirrigated: 3w-2

Storie index: 69 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

Ap—0 to 8 inches; silt loam

2Ab—8 to 22 inches; clay

2Bssb—22 to 40 inches; clay

3Bwb1—40 to 55 inches; clay loam

3Bwb2—55 to 70 inches; clay loam

Minor Components in Map Unit 110

Bosquejo clay and similar soils

Composition: 3 percent

Slope: 0 to 1 percent

Geomorphic position: Interfan basins

Hydric soil status: Not hydric

Parrott silt loam and similar soils

Composition: 3 percent

Slope: 0 to 1 percent

Geomorphic position: Flood plains

Hydric soil status: Not hydric

Busacca clay loam and similar soils

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Distal alluvial fans

Hydric soil status: Not hydric

Conejo clay loam and similar soils

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Distal alluvial fans

Hydric soil status: Not hydric

111yu—Auburn-Sobrante complex, 8 to 15 percent slopes

Map Unit Setting

General location: Yuba County and southeastern Butte County

Major uses: Woodland, livestock grazing, homesite development, wildlife habitat, and irrigated pasture

Major land resource area: 18

Landscape: Northern Sierra Nevada foothills

Elevation: 25 to 1,095 feet (8 to 335 meters)

Mean annual precipitation: 22 to 28 inches (558 to 711 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 250 to 270 days

Map Unit Composition

Auburn loam—40 percent

Sobrante loam—40 percent

Minor components—20 percent

Characteristics of Auburn Loam

Slope: 8 to 15 percent

Geomorphic position: Convex ridgetops and the upper side slopes on metamorphic hills

Parent material: Fine-loamy residuum weathered from greenstone

Observed vegetation: Blue oak and annual grasses and forbs

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (lithic bedrock): 10 to 28 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 2.7 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 4e-8

Land capability, nonirrigated: 4e-8

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A to Bw₂—0 to 17 inches; loam

R—17 inches; bedrock

Characteristics of Sobrante Loam

Slope: 8 to 15 percent

Geomorphic position: The lower side slopes and toeslopes on metamorphic hills

Parent material: Fine-loamy residuum weathered from greenstone

Observed vegetation: Blue oak, annual grasses and forbs, and scattered foothill pine

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature: 20 to 40 inches to paralithic bedrock; 20 to 40 inches to lithic bedrock

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed
Available water capacity: Low (about 4.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 3e-8
Land capability, nonirrigated: 3e-8
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

A—0 to 5 inches; loam
 Bt1 and Bt2—5 to 27 inches; clay loam
 Cr—27 to 39 inches; soft or weathered bedrock
 R—39 inches; bedrock

Minor Components in Map Unit 111yu

Argonaut and similar soils

Composition: 4 percent
Slope: 8 to 15 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

Dunstone and similar soils

Composition: 4 percent
Slope: 8 to 15 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

Loafercreek and similar soils

Composition: 3 percent
Slope: 8 to 15 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

Rock outcrop

Composition: 3 percent
Slope: 8 to 15 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

Timbuctoo and similar soils

Composition: 3 percent
Slope: 8 to 15 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

Loamy soils that are less than 10 inches deep to bedrock

Composition: 3 percent
Slope: 8 to 15 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

114yu—Auburn-Sobrante complex, gravelly, 8 to 15 percent slopes

Map Unit Setting

General location: Yuba County and southeastern Butte County

Major uses: Woodland, livestock grazing, homesite development, wildlife habitat, and irrigated pasture

Major land resource area: 18

Landscape: Northern Sierra Nevada foothills

Elevation: 295 to 1,945 feet (91 to 594 meters)

Mean annual precipitation: 26 to 35 inches (660 to 889 millimeters)

Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)

Frost-free period: 230 to 260 days

Map Unit Composition

Auburn gravelly loam—40 percent

Sobrante gravelly loam—40 percent

Minor components—20 percent

Characteristics of Auburn Gravelly Loam

Slope: 8 to 15 percent

Geomorphic position: Convex ridgetops and the upper side slopes on metamorphic hills

Parent material: Fine-loamy residuum weathered from greenstone

Observed vegetation: Blue oak, interior live oak, foothill pine, shrubs, and annual grasses and forbs

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (lithic bedrock): 10 to 28 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 2.2 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 4e-8

Land capability, nonirrigated: 4e-8

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A to Bw2—0 to 17 inches; gravelly loam

R—17 inches; bedrock

Characteristics of Sobrante Gravelly Loam

Slope: 8 to 15 percent

Geomorphic position: Concave side slopes and toeslopes on metamorphic hills

Parent material: Fine-loamy residuum weathered from greenstone

Observed vegetation: Blue oak, interior live oak, foothill pine, shrubs, and annual grasses and forbs

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature: 20 to 40 inches to paralithic bedrock; 20 to 40 inches to lithic bedrock

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.5 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 3e-8

Land capability, nonirrigated: 3e-8

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 5 inches; gravelly loam

Bt1 to Bt3—5 to 35 inches; gravelly clay loam

Cr—35 to 40 inches; soft or weathered bedrock

R—40 inches; bedrock

Minor Components in Map Unit 114yu

Rock outcrop

Composition: 6 percent

Slope: 8 to 15 percent

Geomorphic position: Hills

Hydric soil status: Not hydric

Argonaut and similar soils

Composition: 4 percent

Slope: 8 to 15 percent

Geomorphic position: Hills

Hydric soil status: Not hydric

Timbuctoo and similar soils

Composition: 3 percent

Slope: 8 to 15 percent

Geomorphic position: Hills

Hydric soil status: Not hydric

Soils that are less than 10 inches deep to lithic bedrock

Composition: 3 percent

Slope: 8 to 15 percent

Geomorphic position: Hills

Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to paralithic bedrock

Composition: 2 percent

Slope: 8 to 15 percent

Geomorphic position: Hills

Hydric soil status: Not hydric

Soils that are 10 to 40 inches deep to bedrock and have a subsoil of clay loam*Composition:* 2 percent*Slope:* 8 to 15 percent*Geomorphic position:* Hills*Hydric soil status:* Not hydric**118—Xerorthents, tailings, 0 to 50 percent slopes*****Map Unit Setting****General location:* Central Butte County*Major uses:* Source of aggregate, recreation, wildlife habitat, and homesite development*Major land resource areas:* 17 and 18*Landscape:* Sacramento Valley, Butte Creek canyon bottoms in foothills*Elevation:* 85 to 1,335 feet (26 to 408 meters)*Mean annual precipitation:* 21 to 50 inches (533 to 1,270 millimeters)*Mean annual air temperature:* 57 to 63 degrees F (14 to 17 degrees C)*Frost-free period:* 240 to 260 days***Map Unit Composition***

Xerorthents, tailings—80 percent

Minor components—20 percent

Characteristics of Xerorthents, Tailings*Slope:* 0 to 50 percent*Geomorphic position:* Spoil piles on stream terraces and flood plains*Parent material:* Dredged spoil piles from gravelly alluvium derived from igneous, metamorphic, and sedimentary rocks*Observed vegetation:* None or scattered valley oak, cottonwood, California sycamore, willow, Pacific poison oak, blackberry, and annual grasses and forbs; in the Butte Creek canyon area, stands of foothill pine and interior live oak*Surface features:* Tailings consist of linear piles of gravel, cobbles, and stones 5 to 40 feet high. They include depressional areas that are often wet. Some areas have been leveled.*Texture of the surface layer:* Very gravelly sandy loam*Percentage of the surface covered by rock fragments:* 5 to 100 percent coarse, well rounded gravel, 10 to 100 percent well rounded cobbles, 0 to 50 percent subrounded stones*Restrictive feature:* None identified*Shrink-swell potential:* Low (LEP of less than 3)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Altered hydrology:* Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.*Annual flooding frequency:* Occasional*Annual ponding frequency:* None*Depth to a water table (zone of saturation):* 60 to 80 inches*Available water capacity:* Low (about 3.5 inches)*Natural drainage class:* Somewhat excessively drained*Surface runoff (bare conditions):* Very low

*Interpretive groups**Land capability, irrigated: 4e-7**Land capability, nonirrigated: 4e-7**Storie index: 34 (revised)**Hydric soil status: Hydric**Hydrologic soil group: A**Typical profile*

A—0 to 3 inches; very gravelly sandy loam

AC—3 to 8 inches; extremely gravelly sandy loam

C1—8 to 21 inches; loamy sand

C2—21 to 26 inches; loamy sand

C3—26 to 35 inches; loamy sand

C4—35 to 48 inches; loamy coarse sand

C5—48 to 59 inches; loamy sand

C6—59 to 81 inches; loamy sand

Minor Components in Map Unit 118**Soils that are in riparian areas***Composition: 5 percent**Slope: 0 to 2 percent**Geomorphic position: Flood plains**Hydric soil status: Hydric***Pits***Composition: 5 percent**Slope: 0 to 2 percent**Geomorphic position: Flood plains**Hydric soil status: Hydric***Xerofluvents, tailings, and similar soils***Composition: 3 percent**Slope: 0 to 2 percent**Geomorphic position: Flood plains**Hydric soil status: Hydric***Xeropsamments, tailings, and similar soils***Composition: 3 percent**Slope: 0 to 50 percent**Geomorphic position: Flood plains**Hydric soil status: Hydric***Haploxeralfs, terrace, and similar soils***Composition: 2 percent**Slope: 0 to 8 percent**Geomorphic position: Stream terraces**Hydric soil status: Not hydric***Soils that have a duripan***Composition: 2 percent**Slope: 0 to 8 percent**Geomorphic position: Edges of terraces**Hydric soil status: Hydric*

118co—Clear Lake clay, 0 to 2 percent slopes, frequently flooded

Map Unit Setting

General location: Northeastern Colusa County and southwestern Butte County

Major uses: Irrigated crops

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 25 to 55 feet (8 to 17 meters)

Mean annual precipitation: 14 to 16 inches (355 to 405 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 225 to 250 days

Map Unit Composition

Clear Lake clay, frequently flooded—90 percent

Minor components—10 percent

Characteristics of Clear Lake Clay, Frequently Flooded

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Parent material: Alluvium

Observed vegetation: Irrigated crops

Texture of the surface layer: Clay

Percentage of the surface covered by rock fragments: None

Restrictive feature: None identified

Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Flood-control structures along the Sacramento River have changed the frequency and duration of flooding and have lowered the water table. Drainage ditches for rice also have lowered the water table.

Annual flooding frequency: Frequent

Annual ponding frequency: None

Depth to a water table (zone of saturation): 48 to 72 inches

Available water capacity: High (about 8.9 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 4w-2

Land capability, nonirrigated: 4w-2

Storie index: 21.0 (historical number)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

Ap1—0 to 4 inches; clay

Ap2—4 to 10 inches; clay

Bss1—10 to 20 inches; clay

Bss2—20 to 34 inches; clay

Bss3—34 to 47 inches; clay

Bssk1—47 to 59 inches; clay

Bssk2—59 to 79 inches; clay

Minor Components in Map Unit 118co

Willows silty clay, frequently flooded, and similar soils

Composition: 6 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Hydric soil status: Hydric

Clear Lake clay, occasionally flooded, and similar soils

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Hydric soil status: Hydric

Soils in channels

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Channels

Hydric soil status: Hydric

119—Xerorthents, tailings-Urban land complex, 0 to 2 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Homesite development, wildlife habitat, and source of aggregate

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 85 to 180 feet (26 to 56 meters)

Mean annual precipitation: 21 to 26 inches (533 to 660 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 250 to 260 days

Map Unit Composition

Xerorthents, tailings—70 percent

Urban land—30 percent

Characteristics of Xerorthents, Tailings

Slope: 0 to 2 percent

Geomorphic position: Spoil piles on terraces and flood plains

Parent material: Dredged spoil piles from gravelly alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: None or scattered valley oak, cottonwood, California sycamore, willow, Pacific poison oak, blackberry, and annual grasses and forbs

Surface features: Tailings consist of linear piles of gravel, cobbles, and stones 5 to 40 feet high. They include depressional areas that are often wet. Some areas have been leveled.

Texture of the surface layer: Very gravelly sandy loam

Percentage of the surface covered by rock fragments: 5 to 100 percent coarse, well rounded gravel, 10 to 100 percent well rounded cobbles, 0 to 50 percent subrounded stones

Restrictive feature: None identified

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: Occasional

Annual ponding frequency: None

Depth to a water table (zone of saturation): 60 to 80 inches

Available water capacity: Low (about 3.5 inches)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): Very low

Interpretive groups

Land capability, irrigated: 4e-7

Land capability, nonirrigated: 4e-7

Storie index: 37 (revised)

Hydric soil status: Hydric

Hydrologic soil group: A

Typical profile

A—0 to 3 inches; very gravelly sandy loam

AC—3 to 8 inches; extremely gravelly sandy loam

C1—8 to 21 inches; loamy sand

C2—21 to 26 inches; loamy sand

C3—26 to 35 inches; loamy sand

C4—35 to 48 inches; loamy coarse sand

C5—48 to 59 inches; loamy sand

C6—59 to 81 inches; loamy sand

Characteristics of Urban Land

Slope: 0 to 2 percent

Geomorphic position: Leveled spoil piles on terraces and flood plains

Definition: Urban land generally is covered by streets, parking lots, sidewalks, buildings, and other structures.

119yu—Auburn-Sobrante-Rock outcrop complex, 30 to 50 percent slopes

Map Unit Setting

General location: Yuba County and southeastern Butte County

Major uses: Woodland, livestock grazing, and wildlife habitat

Major land resource area: 18

Landscape: Northern Sierra Nevada foothills

Elevation: 295 to 1,945 feet (91 to 594 meters)

Mean annual precipitation: 26 to 35 inches (660 to 889 millimeters)

Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)

Frost-free period: 230 to 260 days

Map Unit Composition

Auburn gravelly loam—30 percent

Sobrante gravelly loam—30 percent

Rock outcrop—20 percent

Minor components—20 percent

Characteristics of Auburn Gravelly Loam

Slope: 30 to 50 percent

Geomorphic position: Ridgetops and the upper side slopes on metamorphic hills

Parent material: Fine-loamy residuum weathered from greenstone

Observed vegetation: Blue oak, interior live oak, foothill pine, shrubs, and annual grasses and forbs

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (lithic bedrock): 10 to 28 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 2.2 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 6e-8

Land capability, nonirrigated: 6e-8

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A to Bw₂—0 to 17 inches; gravelly loam

R—17 inches; bedrock

Characteristics of Sobrante Gravelly Loam

Slope: 30 to 50 percent

Geomorphic position: The lower side slopes and toeslopes on metamorphic hills

Parent material: Fine-loamy residuum weathered from greenstone

Observed vegetation: Blue oak, interior live oak, foothill pine, shrubs, and annual grasses and forbs

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature: 20 to 40 inches to paralithic bedrock; 20 to 40 inches to lithic bedrock

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.5 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-8

Land capability, nonirrigated: 6e-8

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 5 inches; gravelly loam

Bt1 to Bt3—5 to 35 inches; gravelly clay loam
 Cr—35 to 40 inches; soft or weathered bedrock
 R—40 inches; bedrock

Characteristics of Rock Outcrop

Slope: 30 to 50 percent
Geomorphic position: Ridgetops and the upper side slopes on metamorphic hills
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 119yu

Hurleton and similar soils

Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

Mounthope and similar soils

Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

Timbuctoo and similar soils

Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

Loamy soils that are less than 10 inches deep to bedrock

Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

120—Gridley taxadjunct clay loam, 0 to 2 percent slopes

Map Unit Setting

General location: Southern Butte County and northern Sutter County
Major uses: Irrigated cropland, irrigated pasture, livestock grazing, homesite development, and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 55 to 85 feet (18 to 26 meters)
Mean annual precipitation: 18 to 20 inches (457 to 508 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 240 to 245 days

Map Unit Composition

Gridley taxadjunct clay loam—80 percent
 Minor components—20 percent

Characteristics of Gridley Taxadjunct Clay Loam

Slope: 0 to 2 percent
Geomorphic position: Low terraces

Parent material: Clayey and loamy alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Rice, prune orchards, and pasture species

Surface feature: Most areas have been leveled for agricultural production.

Texture of the surface layer: Clay loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (duripan): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Rare

Annual ponding frequency: Occasional

Depth to a water table (zone of saturation): 5 to 40 inches

Available water capacity: Low (about 3.9 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 3w-8

Land capability, nonirrigated: 3w-8

Storie index: 15 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 4 inches; clay loam

Bt1—4 to 9 inches; clay loam

Bt2—9 to 15 inches; clay loam

Btk—15 to 21 inches; clay loam

2Bkqm—21 to 60 inches; cemented coarse sandy loam

Minor Components in Map Unit 120

Neerdobe clay and similar soils

Composition: 5 percent

Slope: 0 to 2 percent

Geomorphic position: Flood basins

Hydric soil status: Hydric

Gridley clay loam, siltstone substratum, and similar soils

Composition: 3 percent

Slope: 0 to 2 percent

Geomorphic position: Low terraces

Hydric soil status: Not hydric

Gridley taxadjunct loam and similar soils

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Low terraces

Hydric soil status: Not hydric

Subaco taxadjunct clay and similar soils

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Flood basins

Hydric soil status: Hydric

Marcum clay loam and similar soils

Composition: 2 percent

Slope: 0 to 2 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

Tisdale clay loam and similar soils

Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

Sodic soils

Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

Gridley taxadjunct, frequently ponded, and similar soils

Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

121—Boga-Loemstone complex, 0 to 1 percent slopes

Map Unit Setting

General location: South-central Butte County and northern Sutter County
Major uses: Orchard crops, irrigated pasture, and homesite development
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 75 to 100 feet (23 to 32 meters)
Mean annual precipitation: 19 to 21 inches (483 to 533 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 240 to 250 days

Map Unit Composition

Boga loam—45 percent
 Loemstone loam—40 percent
 Minor components—15 percent

Characteristics of Boga Loam

Slope: 0 to 1 percent
Geomorphic position: Terraces along the Feather River
Parent material: Loamy alluvium over dense silty alluvium derived from igneous and metamorphic rocks
Observed vegetation: Walnut, kiwi, and peach orchards and valley oak
Surface feature: Most areas have been leveled for agricultural production.
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (dense material): 60 to 80 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: Occasional
Depth to a water table (zone of saturation): 20 to 80 inches

Available water capacity: Very high (about 12.0 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 2s-3

Land capability, nonirrigated: 3s-3

Storie index: 84 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

Ap1—0 to 3 inches; loam

Ap2—3 to 6 inches; loam

Bt1—6 to 14 inches; clay loam

Bt2—14 to 29 inches; clay loam

Bt3—29 to 53 inches; clay loam

Bt4—53 to 73 inches; loam

2Cd—73 to 80 inches; dense material

Characteristics of Loemstone Loam

Slope: 0 to 1 percent

Geomorphic position: Terraces along the Feather River

Parent material: Loamy alluvium over dense silty alluvium derived from igneous and metamorphic rocks

Observed vegetation: Walnut, peach, and kiwi orchards and valley oak

Surface feature: Most areas have been leveled for agricultural production.

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (dense material): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: Occasional

Depth to a water table (zone of saturation): 18 to 60 inches

Available water capacity: High (about 9.5 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 3s-3

Land capability, nonirrigated: 3s-3

Storie index: 54 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

Ap1—0 to 2 inches; loam

Ap2—2 to 4 inches; silt loam

Ap3—4 to 10 inches; silt loam

Bt1—10 to 18 inches; clay loam

Bt2—18 to 23 inches; silty clay loam

Bt3—23 to 32 inches; silt loam

Bt4—32 to 40 inches; silt loam

Bt5—40 to 48 inches; silt loam

2Cd—48 to 57 inches; dense material

Minor Components in Map Unit 121

Soils that are 20 to 40 inches deep to densic material

Composition: 4 percent

Slope: 0 to 1 percent

Geomorphic position: Stream terraces

Hydric soil status: Not hydric

Liveoak sandy clay loam and similar soils

Composition: 4 percent

Slope: 0 to 1 percent

Geomorphic position: Distributary channels

Hydric soil status: Not hydric

Soils that are 20 to 60 inches deep to a duripan

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Stream terraces

Hydric soil status: Not hydric

Tisdale clay loam and similar soils

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Stream terraces

Hydric soil status: Not hydric

Marcum loam and similar soils

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Terraces

Hydric soil status: Not hydric

Coarse-loamy soils

Composition: 1 percent

Slope: 0 to 1 percent

Geomorphic position: Distributary channels

Hydric soil status: Not hydric

121su—Columbia fine sandy loam, 0 to 2 percent slopes, frequently flooded

Map Unit Setting

General location: Sutter and Butte Counties

Major uses: Irrigated orchard crops and wildlife habitat

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 20 to 80 feet (7 to 25 meters)

Mean annual precipitation: 17 to 22 inches (431 to 559 millimeters)

Mean annual air temperature: 60 to 64 degrees F (16 to 18 degrees C)

Frost-free period: 260 to 280 days

Map Unit Composition

Columbia fine sandy loam, frequently flooded—80 percent

Minor components—20 percent

Characteristics of Columbia Fine Sandy Loam, Frequently Flooded

Slope: 0 to 2 percent

Geomorphic position: Flood plains

Parent material: Sandy alluvium derived from mixed sources

Observed vegetation: Mixed riparian vegetation and walnut orchards

Texture of the surface layer: Fine sandy loam

Percentage of the surface covered by rock fragments: None

Restrictive feature: None identified

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Frequent

Annual ponding frequency: None

Depth to a water table (zone of saturation): 36 to 60 inches

Available water capacity: Moderate (about 6.5 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Very low

Interpretive groups

Land capability, irrigated: 4w

Land capability, nonirrigated: 4w

Storie index: 53.0 (historical number)

Hydric soil status: Hydric

Hydrologic soil group: C

Typical profile

Ap or A—0 to 14 inches; fine sandy loam

C1 to C4—14 to 60 inches; stratified fine sandy loam to very fine sandy loam

Minor Components in Map Unit 121su

Holillipah and similar soils

Composition: 7 percent

Slope: 0 to 2 percent

Geomorphic position: Flood plains

Hydric soil status: Hydric

Tisdale and similar soils

Composition: 7 percent

Slope: 0 to 2 percent

Geomorphic position: Terraces

Hydric soil status: Not hydric

Shanghai and similar soils

Composition: 6 percent

Slope: 0 to 2 percent

Geomorphic position: Flood plains

Hydric soil status: Hydric

125—Gridley taxadjunct-Calcic Haploxerolls complex, 0 to 2 percent slopes

Map Unit Setting

General location: Southern Butte County

Major uses: Irrigated cropland, irrigated pasture, homesite development, and wildlife habitat

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 55 to 95 feet (18 to 30 meters)

Mean annual precipitation: 18 to 19 inches (457 to 483 millimeters)

Mean annual air temperature: 61 degrees F (16 degrees C)

Frost-free period: 240 to 245 days

Map Unit Composition

Gridley taxadjunct loam—65 percent

Calcic Haploxerolls sandy loam—20 percent

Minor components—15 percent

Characteristics of Gridley Taxadjunct Loam

Slope: 0 to 2 percent

Geomorphic position: Low terraces

Parent material: Loamy and clayey alluvium over cemented, loamy alluvium derived from igneous and metamorphic rocks

Observed vegetation: Rice and pasture species

Surface feature: Most areas have been leveled for agricultural production.

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (duripan): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Rare

Annual ponding frequency: Occasional

Depth to a water table (zone of saturation): 5 to 40 inches

Available water capacity: Low (about 3.9 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 3w-8

Land capability, nonirrigated: 3w-8

Storie index: 17 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 10 inches; loam

Bt—10 to 20 inches; clay loam

Btk—20 to 22 inches; clay

2Bkqm—22 to 60 inches; duripan

Characteristics of Calcic Haploxerolls Sandy Loam

Slope: 0 to 2 percent

Geomorphic position: Convex areas on low terraces

Parent material: Loamy alluvium over dense, loamy alluvium derived from igneous and metamorphic rocks

Observed vegetation: Rice and pasture species

Surface feature: Most areas have been leveled for agricultural production.

Texture of the surface layer: Sandy loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (dense material): 40 to 60 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Hydrology has been altered in areas leveled for agriculture.

Annual flooding frequency: Rare

Annual ponding frequency: None

Depth to a water table (zone of saturation): 30 to 60 inches

Available water capacity: Moderate (about 5.6 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Very low

Interpretive groups

Land capability, irrigated: 3s-6

Land capability, nonirrigated: 3s-6

Storie index: 67 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 5 inches; sandy loam

Ak—5 to 17 inches; sandy loam

Bk1—17 to 20 inches; sandy loam

Bk2—20 to 33 inches; sandy loam

C—33 to 44 inches; sandy loam

2Cd—44 to 72 inches; dense material

Minor Components in Map Unit 125

Subaco taxadjunct clay and similar soils

Composition: 5 percent

Slope: 0 to 2 percent

Geomorphic position: Flood basins

Hydric soil status: Hydric

Marcum clay loam and similar soils

Composition: 5 percent

Slope: 0 to 2 percent

Geomorphic position: Low terraces

Hydric soil status: Not hydric

Soils that are less than 20 inches deep to a duripan

Composition: 5 percent

Slope: 0 to 2 percent

Geomorphic position: Low terraces

Hydric soil status: Not hydric

126—Liveoak sandy loam, 0 to 2 percent slopes

Map Unit Setting

General location: South-central Butte County and northern Sutter County

Major uses: Irrigated crops and homesite development

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 85 to 110 feet (26 to 34 meters)

Mean annual precipitation: 19 to 21 inches (483 to 533 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 240 to 250 days

Map Unit Composition

Liveoak sandy loam—85 percent

Minor components—15 percent

Characteristics of Liveoak Sandy Loam

Slope: 0 to 2 percent

Geomorphic position: Distributary channels on terraces along the Feather River

Parent material: Loamy and sandy alluvium derived from igneous and metamorphic rocks

Observed vegetation: Alfalfa and peach, prune, and walnut orchards

Surface feature: Most areas have been leveled for agricultural production.

Texture of the surface layer: Sandy loam

Percentage of the surface covered by rock fragments: None

Restrictive feature: None identified

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Because of the protection provided by levees, water very rarely flows into distributary channels.

Annual flooding frequency: Very rare

Annual ponding frequency: None

Depth to a water table (zone of saturation): 11 to 40 inches

Available water capacity: Moderate (about 7.5 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Negligible

Interpretive groups

Land capability, irrigated: 2s-2

Land capability, nonirrigated: 3s-2

Storie index: 84 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Ap1—0 to 4 inches; sandy loam

Ap2—4 to 17 inches; sandy loam

Bw1—17 to 37 inches; sandy loam

Bw2—37 to 48 inches; sandy loam

Bw3—48 to 61 inches; sandy loam

C1—61 to 71 inches; sand

C2—71 to 75 inches; gravelly sand

Minor Components in Map Unit 126

Soils that have a light colored surface layer

Composition: 3 percent

Slope: 0 to 2 percent

Geomorphic position: Terraces

Hydric soil status: Not hydric

Boga loam and similar soils

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Stream terraces

Hydric soil status: Not hydric

Loemstone loam and similar soils*Composition:* 2 percent*Slope:* 0 to 2 percent*Geomorphic position:* Stream terraces*Hydric soil status:* Not hydric**Gridley taxadjunct clay loam and similar soils***Composition:* 2 percent*Slope:* 0 to 2 percent*Geomorphic position:* Terraces*Hydric soil status:* Not hydric**Xerofluvents, coarse-loamy, and similar soils***Composition:* 2 percent*Slope:* 0 to 2 percent*Geomorphic position:* Distributary channels*Hydric soil status:* Not hydric**Liveoak sandy clay loam and similar soils***Composition:* 2 percent*Slope:* 0 to 2 percent*Geomorphic position:* Distributary channels*Hydric soil status:* Not hydric**Urban land***Composition:* 2 percent*Slope:* 0 to 2 percent*Geomorphic position:* Leveled land**127—Gridley taxadjunct loam, 0 to 2 percent slopes*****Map Unit Setting****General location:* Southern Butte County and northern Sutter County*Major uses:* Irrigated crops, livestock grazing, irrigated pasture, homesite development, and wildlife habitat*Major land resource area:* 17*Landscape:* Sacramento Valley*Elevation:* 65 to 95 feet (20 to 30 meters)*Mean annual precipitation:* 18 to 21 inches (457 to 533 millimeters)*Mean annual air temperature:* 61 degrees F (16 degrees C)*Frost-free period:* 240 to 245 days***Map Unit Composition***

Gridley taxadjunct loam—85 percent

Minor components—15 percent

Characteristics of Gridley Taxadjunct Loam*Slope:* 0 to 2 percent*Geomorphic position:* Low terraces*Parent material:* Loamy and clayey alluvium over cemented, loamy alluvium derived from igneous and metamorphic rocks*Observed vegetation:* Rice and pasture species*Surface feature:* Most areas have been leveled for agricultural production.*Texture of the surface layer:* Loam*Percentage of the surface covered by rock fragments:* None

Depth to a restrictive feature (duripan): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Rare

Annual ponding frequency: Occasional

Depth to a water table (zone of saturation): 5 to 40 inches

Available water capacity: Low (about 3.9 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Very low

Interpretive groups

Land capability, irrigated: 3w-8

Land capability, nonirrigated: 3w-8

Storie index: 17 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 10 inches; loam

Bt—10 to 20 inches; clay loam

Btk—20 to 22 inches; clay

2Bkqm—22 to 60 inches; duripan

Minor Components in Map Unit 127

Soils that are frequently flooded

Composition: 5 percent

Slope: 0 to 2 percent

Geomorphic position: Channels on low terraces

Hydric soil status: Hydric

Mollic Haploxeralfs, fine-loamy, and similar soils

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Low terraces

Hydric soil status: Not hydric

Typic Argixerolls, fine-loamy, and similar soils

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Low terraces

Hydric soil status: Not hydric

Typic Haploxerolls, fine-loamy, and similar soils

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Low terraces

Hydric soil status: Not hydric

Soils that are less than 20 inches deep to a duripan

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Low terraces

Hydric soil status: Not hydric

Soils that are more than 40 inches deep to a duripan

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Low terraces

Hydric soil status: Not hydric

130—Eastbiggs loam, 0 to 2 percent slopes

Map Unit Setting

General location: Southern Butte County

Major uses: Cropland, livestock grazing, watershed, and wildlife habitat

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 85 to 120 feet (27 to 38 meters)

Mean annual precipitation: 21 to 23 inches (533 to 584 millimeters)

Mean annual air temperature: 61 degrees F (16 degrees C)

Frost-free period: 250 days

Map Unit Composition

Eastbiggs loam—80 percent

Minor components—20 percent

Characteristics of Eastbiggs Loam

Slope: 0 to 2 percent

Geomorphic position: Mounds on low terraces

Parent material: Loamy alluvium over clayey alluvium over cemented, loamy alluvium derived from igneous and metamorphic rocks

Observed vegetation: Annual grasses and forbs and some crops

Surface feature: Some areas have been leveled for agriculture.

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (duripan): 20 to 40 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Natural hydrology has been modified in areas leveled for agriculture.

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 14 to 40 inches

Available water capacity: Low (about 4.5 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Storie index: 22 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A1—0 to 3 inches; loam

A2—3 to 10 inches; loam

BAt—10 to 17 inches; loam

2Bt—17 to 27 inches; clay

3Bqm—27 to 34 inches; duripan

3Bq—34 to 60 inches; duripan

Minor Components in Map Unit 130

Galt clay and similar soils

Composition: 9 percent

Slope: 0 to 1 percent

Geomorphic position: Swales on low terraces

Hydric soil status: Hydric

Clayey soils that are 10 to 20 inches deep to a duripan

Composition: 3 percent

Slope: 0 to 1 percent

Geomorphic position: Swales on low terraces

Hydric soil status: Hydric

Loamy soils that are 10 to 20 inches deep to a duripan

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Swales on low terraces

Hydric soil status: Hydric

Kimball loam and similar soils

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Low terraces

Hydric soil status: Not hydric

Soils that are frequently ponded for long periods

Composition: 2 percent

Slope: 0 percent

Geomorphic position: Vernal pools on low terraces

Hydric soil status: Hydric

Soils that are rarely flooded

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Stream terraces

Hydric soil status: Not hydric

133—Eastbiggs-Galt complex, 0 to 3 percent slopes

Map Unit Setting

General location: Central and southern Butte County

Major uses: Livestock grazing, wildlife habitat, watershed, and some cropland

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 65 to 140 feet (21 to 43 meters)

Mean annual precipitation: 21 to 23 inches (533 to 584 millimeters)

Mean annual air temperature: 61 degrees F (16 degrees C)

Frost-free period: 250 days

Map Unit Composition

Eastbiggs loam—50 percent

Galt clay loam—40 percent

Minor components—10 percent

Characteristics of Eastbiggs Loam

Slope: 0 to 3 percent

Geomorphic position: Mounds on low terraces

Parent material: Loamy alluvium over clayey alluvium over cemented, loamy alluvium derived from igneous and metamorphic rocks

Observed vegetation: Annual grasses and forbs and some crops

Surface feature: Some areas have been leveled for agriculture.

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (duripan): 20 to 40 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Natural hydrology has been modified in areas leveled for agriculture.

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 14 to 40 inches

Available water capacity: Low (about 4.5 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Storie index: 21 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A1—0 to 3 inches; loam

A2—3 to 10 inches; loam

BAt—10 to 17 inches; loam

2Bt—17 to 27 inches; clay

3Bqm—27 to 34 inches; duripan

3Bq—34 to 60 inches; duripan

Characteristics of Galt Clay Loam

Slope: 0 to 3 percent

Geomorphic position: Drainageways and depressions on low terraces

Parent material: Clayey alluvium over cemented, loamy alluvium derived from igneous and metamorphic rocks

Observed vegetation: Annual grasses and forbs and some crops

Surface feature: Some areas have been leveled for agriculture.

Texture of the surface layer: Clay loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (duripan): 20 to 40 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: None

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 40 inches

Available water capacity: Moderate (about 5.2 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Storie index: 18 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

A—0 to 6 inches; clay loam

Bss1—6 to 20 inches; clay loam

Bss2—20 to 27 inches; clay

Bss3—27 to 30 inches; clay

2Bqm—30 inches; duripan

Minor Components in Map Unit 133

Kimball loam and similar soils

Composition: 3 percent

Slope: 0 to 3 percent

Geomorphic position: Low terraces

Hydric soil status: Not hydric

Esquon clay and similar soils

Composition: 3 percent

Slope: 0 to 3 percent

Geomorphic position: Drainageways and small basins on low terraces

Hydric soil status: Hydric

Wet soils

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Stream terraces

Hydric soil status: Hydric

Wilsoncreek loam and similar soils

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Flood plains

Hydric soil status: Not hydric

136—Duric Xerarents-Eastbiggs complex, 0 to 1 percent slopes, leveled

Map Unit Setting

General location: Central Butte County

Major uses: Irrigated crops

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 65 to 140 feet (21 to 43 meters)

Mean annual precipitation: 19 to 23 inches (483 to 584 millimeters)

Mean annual air temperature: 61 degrees F (16 degrees C)

Frost-free period: 240 to 250 days

Map Unit Composition

Duric Xerarents, cut—35 percent

Duric Xerarents, fill—30 percent

Eastbiggs fine sandy loam, leveled—25 percent

Minor components—10 percent

Characteristics of Duric Xerarents, Cut

Slope: 0 to 1 percent

Geomorphic position: Cut areas on low terraces

Parent material: Human-altered, clayey alluvium over cemented, loamy alluvium derived from igneous and metamorphic rocks

Observed vegetation: Rice and annual grasses and forbs

Surface features: The surface has been leveled for agricultural production. A typical pedon rarely occurs in this unit because of cuts and fills during leveling. Only remnant horizons or parts of the original soil remain. Surface horizons have been removed by leveling.

Texture of the surface layer: Clay loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (duripan): 6 to 21 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: None

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 21 inches

Available water capacity: Very low (about 2.3 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Storie index: 15 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

Bt1—0 to 3 inches; clay loam

Bt2—3 to 8 inches; clay loam

Bt3—8 to 10 inches; clay loam

2Bt4—10 to 13 inches; clay

3Bqm—13 inches; duripan

Characteristics of Duric Xerarents, Fill

Slope: 0 to 1 percent

Geomorphic position: Filled areas on low terraces

Parent material: Human-transported, clayey alluvium over cemented, loamy alluvium derived from igneous and metamorphic rocks

Observed vegetation: Rice and annual grasses and forbs

Surface features: The surface has been leveled for agricultural production. A typical pedon rarely occurs in this unit because of cuts and fills during leveling. Only remnant horizons or parts of the original soil remain. Human-transported fill has been deposited on natural soil horizons.

Texture of the surface layer: Clay loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (duripan): 24 to 80 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Natural hydrology has been modified by leveling.

Annual flooding frequency: None

Annual ponding frequency: Rare

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 7.1 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Negligible

Interpretive groups

Land capability, irrigated: 4w-5

Land capability, nonirrigated: 4w-5

Storie index: 63 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

Ap—0 to 5 inches; clay loam

Btb1—5 to 12 inches; clay loam

Btb2—12 to 16 inches; clay

Bqb—16 to 30 inches; cemented sandy loam

Btb3—30 to 38 inches; sandy clay loam

Btb4—38 to 48 inches; sandy clay loam

2Bqmb—48 inches; duripan

Characteristics of Eastbiggs Fine Sandy Loam, Leveled

Slope: 0 to 1 percent

Geomorphic position: Leveled mounds on low terraces

Parent material: Human-transported, loamy alluvium over clayey alluvium over cemented, loamy alluvium derived from igneous and metamorphic rocks

Observed vegetation: Rice and annual grasses and forbs

Surface features: The surface has been leveled for agricultural production. A typical pedon rarely occurs in this unit because of cuts and fills during leveling. Only remnant horizons or parts of the original soil remain.

Texture of the surface layer: Fine sandy loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (duripan): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Natural hydrology has been altered by leveling for agriculture.

Annual flooding frequency: None

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 14 to 40 inches

Available water capacity: Low (about 4.9 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): High

*Interpretive groups**Land capability, irrigated: 5w-2**Land capability, nonirrigated: 5w-2**Storie index: 24 (revised)**Hydric soil status: Not hydric**Hydrologic soil group: C**Typical profile*

Ap1—0 to 5 inches; fine sandy loam

Ap2—5 to 12 inches; fine sandy loam

Btb1—12 to 18 inches; sandy clay loam

Btb2—18 to 23 inches; sandy clay loam

Btb3—23 to 26 inches; clay loam

Btb4—26 to 30 inches; clay

2Bqmb—30 inches; duripan

Minor Components in Map Unit 136**Duric Xerarents, cut and fill with gravel, and similar soils***Composition: 5 percent**Slope: 0 to 1 percent**Geomorphic position: Leveled land on low terraces**Hydric soil status: Not hydric***Esquon, human-transported fill overburden, and similar soils***Composition: 3 percent**Slope: 0 to 1 percent**Geomorphic position: Filled drainageways and sloughs on low terraces**Hydric soil status: Hydric***Soils that formed in human-transported fill more than 60 inches thick***Composition: 2 percent**Slope: 0 to 1 percent**Geomorphic position: Fill on low terraces**Hydric soil status: Not hydric***138su—Liveoak sandy clay loam, 0 to 2 percent slopes*****Map Unit Setting****General location: Northern Sutter County and southern Butte County**Major uses: Irrigated crops and homesite development**Major land resource area: 17**Landscape: Sacramento Valley**Elevation: 15 to 95 feet (6 to 29 meters)**Mean annual precipitation: 17 to 21 inches (432 to 533 millimeters)**Mean annual air temperature: 61 to 64 degrees F (16 to 18 degrees C)**Frost-free period: 240 to 280 days****Map Unit Composition***

Liveoak sandy clay loam—85 percent

Minor components—15 percent

Characteristics of Liveoak Sandy Clay Loam*Slope: 0 to 2 percent**Geomorphic position: Low terraces**Parent material: Loamy alluvium derived from igneous and metamorphic rocks*

Observed vegetation: Alfalfa and peach, walnut, almond, and prune orchards

Surface feature: Most areas have been leveled for agricultural production.

Texture of the surface layer: Sandy clay loam

Percentage of the surface covered by rock fragments: None

Restrictive feature: None identified

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Because of the protection provided by levees, water very rarely flows into distributary channels.

Annual flooding frequency: Very rare

Annual ponding frequency: None

Depth to a water table (zone of saturation): 11 to 40 inches

Available water capacity: High (about 9.9 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Very low

Interpretive groups

Land capability, irrigated: 2s-2

Land capability, nonirrigated: 3s-2

Storie index: 84 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Ap1 and Ap2—0 to 13 inches; sandy clay loam

Bt1, Bt2, and BC—13 to 53 inches; sandy clay loam

C—53 to 60 inches; sandy loam

Minor Components in Map Unit 138su

Liveoak sandy loam and similar soils

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Terraces

Hydric soil status: Not hydric

Tisdale clay loam and similar soils

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Terraces

Hydric soil status: Not hydric

Boga loam and similar soils

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Terraces

Hydric soil status: Not hydric

Loemstone loam and similar soils

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Terraces

Hydric soil status: Not hydric

Soils that are more than 40 inches deep to a duripan

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Terraces

Hydric soil status: Not hydric

Gridley taxadjunct clay loam and similar soils

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Terraces

Hydric soil status: Not hydric

Soils that are more than 40 inches deep to a sandy substratum

Composition: 1 percent

Slope: 0 to 2 percent

Geomorphic position: Distributary channels

Hydric soil status: Not hydric

Soils that have a light colored surface layer

Composition: 1 percent

Slope: 0 to 2 percent

Geomorphic position: Terraces

Hydric soil status: Not hydric

Soils that do not have a water table

Composition: 1 percent

Slope: 0 to 2 percent

Geomorphic position: Terraces

Hydric soil status: Not hydric

139su—Liveoak-Galt taxadjuncts complex, 0 to 2 percent slopes, frequently flooded

Map Unit Setting

General location: Northwestern Sutter County and southwestern Butte County

Major uses: Irrigated crops

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 20 to 65 feet (7 to 20 meters)

Mean annual precipitation: 14 to 20 inches (355 to 508 millimeters)

Mean annual air temperature: 60 to 64 degrees F (16 to 18 degrees C)

Frost-free period: 260 to 280 days

Map Unit Composition

Liveoak taxadjunct loam, frequently flooded—45 percent

Galt taxadjunct clay loam, frequently flooded—40 percent

Minor components—15 percent

Characteristics of Liveoak Taxadjunct Loam, Frequently Flooded

Slope: 0 to 2 percent

Geomorphic position: Bars on flood plains

Parent material: Loamy alluvium derived from igneous and metamorphic rocks

Observed vegetation: Annual grasses, tules, and rice

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (duripan): 40 to 60 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Frequent

Annual ponding frequency: None

Depth to a water table (zone of saturation): 48 to 60 inches

Available water capacity: High (about 8.6 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 4w-2

Land capability, nonirrigated: 4w-2

Storie index: 31.0 (historical number)

Hydric soil status: Hydric

Hydrologic soil group: B

Typical profile

Ak—0 to 6 inches; loam

Bk and Bkq—6 to 54 inches; loam

Bkqm—54 to 63 inches; duripan

2C—63 to 73 inches; very fine sandy loam

Characteristics of Galt Taxadjunct Clay Loam, Frequently Flooded

Slope: 0 to 2 percent

Geomorphic position: Channels on flood plains

Parent material: Loamy alluvium derived from igneous and metamorphic rocks

Observed vegetation: Annual grasses, tules, and rice

Texture of the surface layer: Clay loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature: 20 to 35 inches to a duripan; 26 to 60 inches to densic material

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Frequent

Annual ponding frequency: None

Depth to a water table (zone of saturation): 12 to 24 inches

Available water capacity: Low (about 4.0 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Storie index: 14.0 (historical number)

Hydric soil status: Hydric

Hydrologic soil group: C

Typical profile

A1, A2, Bw, and Bk—0 to 21 inches; clay loam

Bkqm—21 to 22 inches; duripan

Ck—22 to 25 inches; loam

B'kqm—25 to 26 inches; duripan

Cd—26 inches; densic material

Minor Components in Map Unit 139su

Galt clay and similar soils

Composition: 4 percent

Slope: 0 to 2 percent
Geomorphic position: Flood plains
Hydric soil status: Hydric

Subaco clay and similar soils

Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Clear Lake clay and similar soils

Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Columbia and similar soils

Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Flood plains
Hydric soil status: Hydric

Gridley clay loam and similar soils

Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Terraces
Hydric soil status: Not hydric

Soils that are less than 20 inches deep to a duripan

Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Flood plains
Hydric soil status: Hydric

143su—Marcum-Gridley clay loams, 0 to 1 percent slopes

Map Unit Setting

General location: Sutter County and southern Butte County
Major uses: Irrigated and nonirrigated crops and homesite development
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 20 to 80 feet (7 to 25 meters)
Mean annual precipitation: 17 to 20 inches (431 to 508 millimeters)
Mean annual air temperature: 60 to 64 degrees F (16 to 18 degrees C)
Frost-free period: 260 to 280 days

Map Unit Composition

Marcum clay loam—45 percent
 Gridley clay loam—40 percent
 Minor components—15 percent

Characteristics of Marcum Clay Loam

Slope: 0 to 1 percent
Geomorphic position: Basin rims and terraces
Parent material: Loamy alluvium derived from mixed sources

Observed vegetation: Rice, prune orchards, corn, tomatoes, grain sorghum, safflower, and nonirrigated wheat and barley

Surface feature: Most areas have been leveled for agriculture.

Texture of the surface layer: Clay loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (paralithic bedrock): 40 to 80 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 7.4 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 2s-3

Land capability, nonirrigated: 3s-3

Storie index: 58.0 (historical number)

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

Ap or A—0 to 16 inches; clay loam

Bt1—16 to 28 inches; clay loam

Bt2—28 to 40 inches; clay

Bk—40 to 43 inches; clay loam

2Cr—43 to 62 inches; bedrock

Characteristics of Gridley Clay Loam

Slope: 0 to 1 percent

Geomorphic position: Basin rims and terraces

Parent material: Clayey alluvium derived from mixed sources

Observed vegetation: Rice, prune orchards, corn, tomatoes, grain sorghum, safflower, and nonirrigated wheat and barley

Surface feature: Most areas have been leveled for agriculture.

Texture of the surface layer: Clay loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.5 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 3s-3

Land capability, nonirrigated: 3s-3

Storie index: 44.0 (historical number)

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

Ap and A—0 to 19 inches; clay loam

Bt1 and Bt2—19 to 37 inches; clay

2Cr—37 inches; bedrock

Minor Components in Map Unit 143su**Liveoak and similar soils***Composition:* 3 percent*Slope:* 0 to 1 percent*Geomorphic position:* Terraces*Hydric soil status:* Not hydric**Tisdale and similar soils***Composition:* 3 percent*Slope:* 0 to 1 percent*Geomorphic position:* Terraces*Hydric soil status:* Not hydric**Capay and similar soils***Composition:* 2 percent*Slope:* 0 to 1 percent*Geomorphic position:* Basin rims*Hydric soil status:* Hydric**Conejo and similar soils***Composition:* 2 percent*Slope:* 0 to 1 percent*Geomorphic position:* Terraces*Hydric soil status:* Not hydric**Gridley and similar soils***Composition:* 2 percent*Slope:* 0 to 1 percent*Geomorphic position:* Terraces*Hydric soil status:* Not hydric**Oswald and similar soils***Composition:* 2 percent*Slope:* 0 to 1 percent*Geomorphic position:* Basin rims*Hydric soil status:* Hydric**Soils that are frequently ponded***Composition:* 1 percent*Slope:* 0 to 1 percent*Geomorphic position:* Basin rims*Hydric soil status:* Hydric**149yu—Flanly sandy loam, 8 to 15 percent slopes*****Map Unit Setting****General location:* Yuba County and southeastern Butte County*Major uses:* Woodland, livestock grazing, homesite development, irrigated pasture, and wildlife habitat*Major land resource area:* 18*Landscape:* Northern Sierra Nevada foothills

Elevation: 120 to 1,895 feet (38 to 579 meters)

Mean annual precipitation: 22 to 42 inches (559 to 1,067 millimeters)

Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)

Frost-free period: 235 to 255 days

Map Unit Composition

Flanly sandy loam—80 percent

Minor components—20 percent

Characteristics of Flanly Sandy Loam

Slope: 8 to 15 percent

Geomorphic position: Hills

Parent material: Residuum weathered from granodiorite

Observed vegetation: Interior live oak, blue oak, foothill pine, brush, annual grasses and forbs, and scattered ponderosa pine

Texture of the surface layer: Sandy loam

Percentage of the surface covered by rock fragments: 0 to 10 percent stones

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 5.8 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A and BA_t—0 to 9 inches; sandy loam

B_t1—9 to 16 inches; loam

B_t2 and B_t3—16 to 34 inches; loam

Cr—34 to 38 inches; bedrock

Minor Components in Map Unit 149yu

Orose and similar soils

Composition: 5 percent

Slope: 8 to 15 percent

Geomorphic position: Hills

Hydric soil status: Not hydric

Rackerby and similar soils

Composition: 5 percent

Slope: 8 to 15 percent

Geomorphic position: Hills

Hydric soil status: Not hydric

Swedesflat and similar soils

Composition: 5 percent

Slope: 8 to 15 percent

Geomorphic position: Hills
Hydric soil status: Not hydric

Verjeles and similar soils

Composition: 5 percent
Slope: 8 to 15 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

150—Columbia, 0 to 2 percent slopes, frequently flooded

Map Unit Setting

General location: Western and south-central Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 65 to 170 feet (20 to 52 meters)
Mean annual precipitation: 19 to 23 inches (483 to 584 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 240 to 250 days

Map Unit Composition

Columbia stratified sand to fine sandy loam—85 percent
 Minor components—15 percent

Characteristics of Columbia Stratified Sand to Fine Sandy Loam

Slope: 0 to 2 percent
Geomorphic position: Channels and sloughs on flood plains
Parent material: Stratified, sandy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Riparian species, including California sycamore, willows, black walnut, cottonwood, valley oak, wild grape, shrubs, and grasses
Surface feature: Flooding debris, such as logs, limbs, leaves, and grass, is deposited and moved across the surface annually.
Texture of the surface layer: Stratified sand to fine sandy loam
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
Annual flooding frequency: Frequent
Annual ponding frequency: None
Depth to a water table (zone of saturation): 20 to 72 inches
Available water capacity: Moderate (about 6.7 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very low

Interpretive groups

Land capability, irrigated: 4w-2
Land capability, nonirrigated: 4w-2

Storie index: 35 (revised)

Hydric soil status: Hydric

Hydrologic soil group: C

Typical profile

A—0 to 5 inches; stratified sand to fine sandy loam

C1—5 to 10 inches; stratified silt loam to sandy loam

C2—10 to 29 inches; loam

C3—29 to 37 inches; fine sandy loam

C4—37 to 46 inches; sand

C5—46 to 60 inches; stratified fine sandy loam to fine sand

Minor Components in Map Unit 150

Gianella fine sandy loam, loam, or silt loam and similar soils

Composition: 5 percent

Slope: 0 to 2 percent

Geomorphic position: Bars on flood plains

Hydric soil status: Hydric

Parrott silt loam and similar soils

Composition: 5 percent

Slope: 0 to 2 percent

Geomorphic position: Bars on flood plains

Hydric soil status: Hydric

Riverwash

Composition: 5 percent

Slope: 0 to 2 percent

Geomorphic position: Gravel bars in channels

Hydric soil status: Hydric

150su—Olashes sandy loam, 0 to 2 percent slopes

Map Unit Setting

General location: Northwestern Sutter County and southwestern Butte County

Major uses: Irrigated and nonirrigated crops and homesite development

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 45 to 750 feet (14 to 229 meters)

Mean annual precipitation: 16 to 19 inches (406 to 482 millimeters)

Mean annual air temperature: 57 to 63 degrees F (14 to 17 degrees C)

Frost-free period: 250 to 270 days

Map Unit Composition

Olashes sandy loam—85 percent

Minor components—15 percent

Characteristics of Olashes Sandy Loam

Slope: 0 to 2 percent

Geomorphic position: Alluvial fans

Parent material: Loamy alluvium derived from mixed sources

Observed vegetation: Almond, walnut, peach, and prune orchards, rice, and dry beans

Texture of the surface layer: Sandy loam

Percentage of the surface covered by rock fragments: None

Restrictive feature: None identified

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 8.1 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 1

Land capability, nonirrigated: 3c

Storie index: 86.0 (historical number)

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 4 inches; sandy loam

Bt1 and Bt2—4 to 52 inches; sandy clay loam

2C—52 to 60 inches; sand

Minor Components in Map Unit 150su

Oswald and similar soils

Composition: 8 percent

Slope: 0 to 2 percent

Geomorphic position: Basin rims

Hydric soil status: Hydric

Soils that are 40 to 60 inches deep to bedrock or a duripan

Composition: 5 percent

Slope: 0 to 2 percent

Geomorphic position: Alluvial fans

Hydric soil status: Not hydric

Subaco and similar soils

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Basin rims

Hydric soil status: Hydric

151yu—Flanly sandy loam, 30 to 50 percent slopes

Map Unit Setting

General location: Yuba County and southeastern Butte County

Major uses: Woodland, livestock grazing, and wildlife habitat

Major land resource area: 18

Landscape: Northern Sierra Nevada foothills

Elevation: 120 to 1,895 feet (38 to 579 meters)

Mean annual precipitation: 22 to 42 inches (559 to 1,067 millimeters)

Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)

Frost-free period: 235 to 255 days

Map Unit Composition

Flanly sandy loam—80 percent
 Minor components—20 percent

Characteristics of Flanly Sandy Loam

Slope: 30 to 50 percent
Geomorphic position: Hills
Parent material: Residuum weathered from granodiorite
Observed vegetation: Interior live oak, blue oak, foothill pine, brush, annual grasses and forbs, and scattered ponderosa pine
Texture of the surface layer: Sandy loam
Percentage of the surface covered by rock fragments: 0 to 10 percent stones
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 5.8 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

A and BA_t—0 to 9 inches; sandy loam
 B_t1—9 to 16 inches; loam
 B_t2 and B_t3—16 to 34 inches; loam
 Cr—34 to 38 inches; soft or weathered bedrock

Minor Components in Map Unit 151yu

Hurleton and similar soils

Composition: 4 percent
Slope: 30 to 40 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

Orose and similar soils

Composition: 4 percent
Slope: 30 to 50 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

Rackerby and similar soils

Composition: 4 percent
Slope: 30 to 50 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

Sommeyflat and similar soils*Composition:* 4 percent*Slope:* 30 to 50 percent*Geomorphic position:* Hills*Hydric soil status:* Not hydric**Swedesflat and similar soils***Composition:* 4 percent*Slope:* 30 to 50 percent*Geomorphic position:* Hills*Hydric soil status:* Not hydric**152—Gianella fine sandy loam, 0 to 1 percent slopes, frequently flooded*****Map Unit Setting****General location:* Western and southern Butte County*Major uses:* Orchard crops, row crops, wildlife habitat, and watershed*Major land resource area:* 17*Landscape:* Sacramento Valley*Elevation:* 75 to 160 feet (23 to 49 meters)*Mean annual precipitation:* 20 to 22 inches (508 to 559 millimeters)*Mean annual air temperature:* 61 to 63 degrees F (16 to 17 degrees C)*Frost-free period:* 240 to 245 days***Map Unit Composition***

Gianella fine sandy loam, frequently flooded—85 percent

Minor components—15 percent

Characteristics of Gianella Fine Sandy Loam, Frequently Flooded*Slope:* 0 to 1 percent*Geomorphic position:* Bars on flood plains*Parent material:* Stratified, coarse-loamy alluvium derived from igneous, metamorphic, and sedimentary rocks*Observed vegetation:* Almond, walnut, and prune orchards; wheat; and, in riparian forest areas, valley oak, California boxelder, cottonwood, and willows*Surface feature:* Texture of the surface layer varies and may change because of deposition during periods of flooding.*Texture of the surface layer:* Fine sandy loam*Percentage of the surface covered by rock fragments:* 0 to 20 percent well rounded gravel*Restrictive feature:* None identified*Shrink-swell potential:* Low (LEP of less than 3)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* Frequent*Annual ponding frequency:* None*Depth to a water table (zone of saturation):* 33 to 80 inches*Available water capacity:* High (about 8.8 inches)*Natural drainage class:* Moderately well drained*Surface runoff (bare conditions):* Negligible*Interpretive groups**Land capability, irrigated:* 4w-2

Land capability, nonirrigated: 4w-2

Storie index: 66 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: A

Typical profile

A—0 to 6 inches; fine sandy loam

C1—6 to 15 inches; silt loam

C2—15 to 20 inches; fine sandy loam

C3—20 to 22 inches; silt loam

C4—22 to 27 inches; silt loam

C5—27 to 32 inches; fine sandy loam

C6—32 to 43 inches; fine sandy loam

C7—43 to 64 inches; fine sandy loam

C8—64 to 80 inches; loamy sand

Minor Components in Map Unit 152

Parrott silt loam, frequently flooded, and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Bars on flood plains

Hydric soil status: Not hydric

Soils that have a gravelly substratum

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Bars on flood plains

Hydric soil status: Not hydric

Frequently flooded Columbia and similar soils

Composition: 3 percent

Slope: 0 to 1 percent

Geomorphic position: Channels on flood plains

Hydric soil status: Hydric

Gianella fine sandy loam, occasionally flooded, and similar soils

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Bars on flood plains

Hydric soil status: Not hydric

153—Gianella sandy loam, 0 to 1 percent slopes, frequently flooded

Map Unit Setting

General location: Western Butte County

Major uses: Wildlife habitat and watershed

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 95 to 150 feet (30 to 47 meters)

Mean annual precipitation: 18 to 22 inches (457 to 559 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 240 to 245 days

Map Unit Composition

Gianella sandy loam, frequently flooded—85 percent
 Minor components—15 percent

Characteristics of Gianella Sandy Loam, Frequently Flooded

Slope: 0 to 1 percent

Geomorphic position: Bars on flood plains

Parent material: Stratified, coarse-loamy alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Annual grasses and forbs and, in riparian forest areas, valley oak, California boxelder, cottonwoods, and willows

Surface feature: Texture of the surface layer varies and may change because of deposition during periods of flooding.

Texture of the surface layer: Sandy loam

Percentage of the surface covered by rock fragments: 0 to 20 percent well rounded gravel

Restrictive feature: None identified

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Frequent

Annual ponding frequency: None

Depth to a water table (zone of saturation): 33 to 80 inches

Available water capacity: Moderate (about 7.0 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Negligible

Interpretive groups

Land capability, irrigated: 4w-2

Land capability, nonirrigated: 4w-2

Storie index: 63 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: A

Typical profile

A—0 to 6 inches; sandy loam

C1—6 to 17 inches; sandy loam

C2—17 to 24 inches; sandy loam

C3—24 to 29 inches; sandy loam

C4—29 to 32 inches; loamy sand

C5—32 to 43 inches; fine sandy loam

C6—43 to 57 inches; fine sandy loam

C7—57 to 67 inches; fine sandy loam

C8—67 to 68 inches; fine sandy loam

C9—68 to 71 inches; fine sandy loam

C10—71 to 80 inches; fine sandy loam

C11—80 to 84 inches; fine sandy loam

Minor Components in Map Unit 153

Frequently flooded Columbia and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Channels on flood plains

Hydric soil status: Hydric

Soils that have a gravelly substratum*Composition:* 5 percent*Slope:* 0 to 1 percent*Geomorphic position:* Bars on flood plains*Hydric soil status:* Not hydric**Riverwash***Composition:* 3 percent*Slope:* 0 to 1 percent*Geomorphic position:* Gravel bars in channels*Hydric soil status:* Hydric**Parrott silt loam, frequently flooded, and similar soils***Composition:* 2 percent*Slope:* 0 to 1 percent*Geomorphic position:* Bars on flood plains*Hydric soil status:* Not hydric**154—Gianella silt loam, 0 to 1 percent slopes, frequently flooded*****Map Unit Setting****General location:* Western Butte County*Major uses:* Orchard crops, row crops, wildlife habitat, and watershed*Major land resource area:* 17*Landscape:* Sacramento Valley*Elevation:* 85 to 160 feet (26 to 49 meters)*Mean annual precipitation:* 18 to 22 inches (457 to 559 millimeters)*Mean annual air temperature:* 61 to 63 degrees F (16 to 17 degrees C)*Frost-free period:* 240 to 245 days***Map Unit Composition***

Gianella silt loam, frequently flooded—85 percent

Minor components—15 percent

Characteristics of Gianella Silt Loam, Frequently Flooded*Slope:* 0 to 1 percent*Geomorphic position:* Bars on flood plains*Parent material:* Stratified, coarse-loamy alluvium derived from igneous, metamorphic, and sedimentary rocks*Observed vegetation:* Walnut, almond, and prune orchards; wheat; and, in riparian forest areas, valley oak, California boxelder, cottonwoods, and willows*Surface feature:* Texture of the surface layer varies and may change because of deposition during periods of flooding.*Texture of the surface layer:* Silt loam*Percentage of the surface covered by rock fragments:* 0 to 20 percent well rounded gravel*Restrictive feature:* None identified*Shrink-swell potential:* Low (LEP of less than 3)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* Frequent*Annual ponding frequency:* None*Depth to a water table (zone of saturation):* 33 to 80 inches

Available water capacity: High (about 8.8 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Negligible

Interpretive groups

Land capability, irrigated: 4w-2

Land capability, nonirrigated: 4w-2

Storie index: 66 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: A

Typical profile

A—0 to 2 inches; silt loam

C1—2 to 8 inches; loamy fine sand

C2—8 to 15 inches; fine sandy loam

C3—15 to 22 inches; very fine sandy loam

C4—22 to 31 inches; very fine sandy loam

C5—31 to 41 inches; very fine sandy loam

C6—41 to 50 inches; silt loam

C7—50 to 54 inches; silt loam

C8—54 to 64 inches; silt loam

C9—64 to 66 inches; silt loam

C10—66 to 69 inches; loam

C11—69 to 83 inches; loamy fine sand

Minor Components in Map Unit 154

Parrott silt loam, frequently flooded, and similar soils

Composition: 9 percent

Slope: 0 to 1 percent

Geomorphic position: Bars on flood plains

Hydric soil status: Not hydric

Frequently flooded Columbia and similar soils

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Channels on flood plains

Hydric soil status: Hydric

Soils that have a gravelly substratum

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Bars on flood plains

Hydric soil status: Not hydric

Gianella silt loam, occasionally flooded, and similar soils

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Bars on flood plains

Hydric soil status: Not hydric

158—Gianella fine sandy loam, 0 to 1 percent slopes, occasionally flooded

Map Unit Setting

General location: Western and southern Butte County

Major uses: Orchard crops, row crops, wildlife habitat, and watershed

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 65 to 170 feet (21 to 53 meters)

Mean annual precipitation: 19 to 23 inches (483 to 584 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 240 to 250 days

Map Unit Composition

Gianella fine sandy loam, occasionally flooded—85 percent

Minor components—15 percent

Characteristics of Gianella Fine Sandy Loam, Occasionally Flooded

Slope: 0 to 1 percent

Geomorphic position: Bars on flood plains

Parent material: Stratified, coarse-loamy alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Walnut, almond, and prune orchards; wheat; and, in riparian forest areas, valley oak, California boxelder, cottonwoods, and willows

Surface feature: Texture of the surface layer varies and may change because of deposition during periods of flooding.

Texture of the surface layer: Fine sandy loam

Percentage of the surface covered by rock fragments: 0 to 20 percent medium, well rounded gravel

Restrictive feature: None identified

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Occasional

Annual ponding frequency: None

Depth to a water table (zone of saturation): 33 to 80 inches

Available water capacity: High (about 8.0 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Negligible

Interpretive groups

Land capability, irrigated: 2w-2

Land capability, nonirrigated: 3w-2

Storie index: 80 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: A

Typical profile

Ap—0 to 3 inches; fine sandy loam

A—3 to 12 inches; fine sandy loam

C1—12 to 19 inches; loam

C2—19 to 28 inches; fine sandy loam

C3—28 to 48 inches; loam

C4—48 to 57 inches; sandy loam

C5—57 to 80 inches; loamy sand

Minor Components in Map Unit 158

Parrott silt loam, occasionally flooded, and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Bars on flood plains

Hydric soil status: Not hydric

Soils that have a gravelly substratum*Composition:* 4 percent*Slope:* 0 to 1 percent*Geomorphic position:* Bars on flood plains*Hydric soil status:* Not hydric**Frequently flooded Columbia and similar soils***Composition:* 3 percent*Slope:* 0 to 1 percent*Geomorphic position:* Channels on flood plains*Hydric soil status:* Hydric**Gianella fine sandy loam, frequently flooded, and similar soils***Composition:* 2 percent*Slope:* 0 to 1 percent*Geomorphic position:* Channels on flood plains*Hydric soil status:* Not hydric**Farwell loam and similar soils***Composition:* 1 percent*Slope:* 0 to 1 percent*Geomorphic position:* Edges of flood plains*Hydric soil status:* Not hydric**160—Gianella loam, 0 to 1 percent slopes, occasionally flooded*****Map Unit Setting****General location:* Western and southern Butte County*Major uses:* Orchard crops, wildlife habitat, and watershed*Major land resource area:* 17*Landscape:* Sacramento Valley*Elevation:* 95 to 150 feet (30 to 46 meters)*Mean annual precipitation:* 20 to 22 inches (515 to 559 millimeters)*Mean annual air temperature:* 61 to 63 degrees F (16 to 17 degrees C)*Frost-free period:* 240 to 250 days***Map Unit Composition***

Gianella loam, occasionally flooded—85 percent

Minor components—15 percent

Characteristics of Gianella Loam, Occasionally Flooded*Slope:* 0 to 1 percent*Geomorphic position:* Bars on flood plains*Parent material:* Stratified, coarse-loamy alluvium derived from igneous, metamorphic, and sedimentary rocks*Observed vegetation:* Walnut, almond, and prune orchards and, in riparian forest areas, valley oak, California boxelder, and willows*Surface feature:* Texture of the surface layer varies and may change because of deposition during periods of flooding.*Texture of the surface layer:* Loam*Percentage of the surface covered by rock fragments:* 0 to 20 percent rounded gravel*Restrictive feature:* None identified*Shrink-swell potential:* Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Occasional

Annual ponding frequency: None

Depth to a water table (zone of saturation): 33 to 80 inches

Available water capacity: High (about 8.3 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Negligible

Interpretive groups

Land capability, irrigated: 2w-2

Land capability, nonirrigated: 3w-2

Storie index: 80 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: A

Typical profile

Ap—0 to 18 inches; loam

C1—18 to 42 inches; fine sandy loam

C2—42 to 52 inches; fine sandy loam

C3—52 to 70 inches; loamy sand

Minor Components in Map Unit 160

Frequently flooded Columbia and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Channels on flood plains

Hydric soil status: Hydric

Parrott silt loam, occasionally flooded, and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Bars on flood plains

Hydric soil status: Not hydric

Soils that have a gravelly substratum

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Bars on flood plains

Hydric soil status: Not hydric

161—Gianella fine sandy loam, 0 to 1 percent slopes, rarely flooded

Map Unit Setting

General location: Southern Butte County

Major uses: Orchard crops

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 85 to 110 feet (27 to 35 meters)

Mean annual precipitation: 20 to 22 inches (515 to 559 millimeters)

Mean annual air temperature: 61 degrees F (16 degrees C)

Frost-free period: 250 days

Map Unit Composition

Gianella fine sandy loam, rarely flooded—90 percent
 Minor components—10 percent

Characteristics of Gianella Fine Sandy Loam, Rarely Flooded

Slope: 0 to 1 percent

Geomorphic position: Bars on flood plains

Parent material: Stratified, coarse-loamy alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Walnut orchards and valley oak

Texture of the surface layer: Fine sandy loam

Percentage of the surface covered by rock fragments: 0 to 20 percent medium, well rounded gravel

Restrictive feature: None identified

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Rare

Annual ponding frequency: None

Depth to a water table (zone of saturation): 33 to 80 inches

Available water capacity: High (about 8.0 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Negligible

Interpretive groups

Land capability, irrigated: 2s-4

Land capability, nonirrigated: 3s-4

Storie index: 85 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: A

Typical profile

Ap—0 to 3 inches; fine sandy loam

A—3 to 12 inches; fine sandy loam

C1—12 to 19 inches; loam

C2—19 to 28 inches; fine sandy loam

C3—28 to 48 inches; loam

C4—48 to 57 inches; sandy loam

C5—57 to 80 inches; loamy sand

Minor Components in Map Unit 161

Soils that have a gravelly substratum

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Bars on flood plains

Hydric soil status: Not hydric

Columbia taxadjunct very fine sandy loam and similar soils

Composition: 3 percent

Slope: 0 to 1 percent

Geomorphic position: Channels on flood plains

Hydric soil status: Hydric

Gianella fine sandy loam, occasionally flooded, and similar soils

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Bars on flood plains

Hydric soil status: Not hydric

162—Gianella loam, 0 to 1 percent slopes, rarely flooded

Map Unit Setting

General location: Southern Butte County

Major uses: Orchard crops

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 95 to 110 feet (29 to 34 meters)

Mean annual precipitation: 20 inches (515 millimeters)

Mean annual air temperature: 61 degrees F (16 degrees C)

Frost-free period: 250 days

Map Unit Composition

Gianella loam, rarely flooded—90 percent

Minor components—10 percent

Characteristics of Gianella Loam, Rarely Flooded

Slope: 0 to 1 percent

Geomorphic position: Bars on flood plains

Parent material: Stratified, coarse-loamy alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Walnut orchards and valley oak

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: 0 to 20 percent rounded gravel

Restrictive feature: None identified

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Rare

Annual ponding frequency: None

Depth to a water table (zone of saturation): 33 to 80 inches

Available water capacity: High (about 8.3 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Negligible

Interpretive groups

Land capability, irrigated: 2s-4

Land capability, nonirrigated: 3s-4

Storie index: 85 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: A

Typical profile

Ap—0 to 18 inches; loam

C1—18 to 42 inches; fine sandy loam

C2—42 to 52 inches; fine sandy loam

C3—52 to 70 inches; loamy sand

Minor Components in Map Unit 162

Soils that have a gravelly substratum

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Bars on flood plains

Hydric soil status: Not hydric

Columbia taxadjunct very fine sandy loam and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Channels on flood plains

Hydric soil status: Hydric

163yu—Holillipah loamy sand, 0 to 1 percent slopes, frequently flooded

Map Unit Setting

General location: Yuba County and southeastern Butte County

Major uses: Irrigated orchard crops and wildlife habitat

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 30 to 130 feet (10 to 40 meters)

Mean annual precipitation: 18 to 22 inches (457 to 559 millimeters)

Mean annual air temperature: 59 to 66 degrees F (15 to 19 degrees C)

Frost-free period: 250 to 290 days

Map Unit Composition

Holillipah loamy sand—85 percent

Minor components—15 percent

Characteristics of Holillipah Loamy Sand

Slope: 0 to 1 percent

Geomorphic position: Flood plains

Parent material: Sandy alluvium derived from mixed sources

Observed vegetation: Riparian trees, dense brush, and walnut orchards

Texture of the surface layer: Loamy sand

Percentage of the surface covered by rock fragments: None

Restrictive feature: None identified

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Frequent

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.7 inches)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): Very low

Interpretive groups

Land capability, irrigated: 4w-2

Land capability, nonirrigated: 4w-2

Storie index: 12.0 (historical number)

Hydric soil status: Hydric

Hydrologic soil group: A

Typical profile

Ap—0 to 6 inches; loamy sand

C1 to C8—6 to 66 inches; stratified sand to silt loam

Minor Components in Map Unit 163yu

Columbia and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Flood plains

Hydric soil status: Hydric

Occasionally flooded Holillipah and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Flood plains

Hydric soil status: Not hydric

Shanghai and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Flood plains

Hydric soil status: Not hydric

165yu—Holland-Hoda-Hotaw complex, 2 to 30 percent slopes

Map Unit Setting

General location: Yuba County and southeastern Butte County

Major uses: Timber production and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 2,000 to 3,795 feet (610 to 1,158 meters)

Mean annual precipitation: 50 to 75 inches (1,270 to 1,905 millimeters)

Mean annual air temperature: 54 to 57 degrees F (12 to 14 degrees C)

Frost-free period: 160 to 235 days

Map Unit Composition

Holland loam—40 percent

Hoda loam—25 percent

Hotaw loam—20 percent

Minor components—15 percent

Characteristics of Holland Loam

Slope: 2 to 30 percent

Geomorphic position: Granitic mountains

Parent material: Fine-loamy colluvium and residuum derived from granodiorite

Observed vegetation: Mixed conifers, hardwoods, shrubs, grasses, and forbs

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: None

Restrictive feature: None identified

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 9.3 inches)

Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

A1 and A2—0 to 15 inches; loam
 Bt1 to BCt—15 to 65 inches; clay loam

Characteristics of Hoda Loam

Slope: 2 to 30 percent
Geomorphic position: Granitic mountains
Parent material: Clayey colluvium and residuum weathered from granodiorite
Observed vegetation: Mixed conifers, hardwoods, shrubs, grasses, and forbs
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)
Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 9.0 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile

Oi—1 inch to 0; litter and duff.
 A—0 to 7 inches; loam
 Bt1—7 to 14 inches; loam
 Bt2 to BCt—14 to 72 inches; clay

Characteristics of Hotaw Loam

Slope: 2 to 30 percent
Geomorphic position: Granitic mountains
Parent material: Fine-loamy colluvium and residuum derived from granodiorite
Observed vegetation: Mixed conifers, hardwoods, shrubs, grasses, and forbs
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)
Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed

Available water capacity: Moderate (about 5.3 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A1 and A2—0 to 12 inches; loam

Bt—12 to 34 inches; sandy clay loam

Cr—34 inches; soft, weathered bedrock

Minor Components in Map Unit 165yu

Chaix and similar soils

Composition: 3 percent

Slope: 2 to 30 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

Musick and similar soils

Composition: 3 percent

Slope: 2 to 30 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

Surnuf gravelly loam and similar soils

Composition: 3 percent

Slope: 2 to 30 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

Altered soils in piles and windrows

Composition: 3 percent

Slope: 2 to 30 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

Wet soils and seeps

Composition: 3 percent

Slope: 2 to 30 percent

Geomorphic position: Mountains

Hydric soil status: Hydric

173yu—Hotaw-Chawanakee-Holland complex, 8 to 30 percent slopes

Map Unit Setting

General location: Yuba County and southeastern Butte County

Major uses: Timber production and wildlife habitat

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 1,195 to 3,095 feet (365 to 944 meters)

Mean annual precipitation: 50 to 70 inches (1,270 to 1,778 millimeters)

Mean annual air temperature: 54 to 57 degrees F (12 to 14 degrees C)

Frost-free period: 160 to 240 days

Map Unit Composition

Hotaw loam—45 percent

Chawanakee gravelly sandy loam—20 percent

Holland loam—15 percent

Minor components—20 percent

Characteristics of Hotaw Loam

Slope: 8 to 30 percent

Geomorphic position: Granitic mountains

Parent material: Fine-loamy colluvium and residuum weathered from granodiorite

Observed vegetation: Hardwoods, shrubs, and scattered ponderosa pine

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 5.3 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A1 and A2—0 to 12 inches; loam

Bt—12 to 34 inches; sandy clay loam

Cr—34 inches; soft, weathered bedrock

Characteristics of Chawanakee Gravelly Sandy Loam

Slope: 8 to 30 percent

Geomorphic position: Granitic mountains

Parent material: Coarse-loamy residuum weathered from granodiorite

Observed vegetation: Hardwoods, shrubs, and scattered ponderosa pine

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.1 inches)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): Very high

*Interpretive groups**Land capability, irrigated: 7e-1**Land capability, nonirrigated: 7e-1**Hydric soil status: Not hydric**Hydrologic soil group: C**Typical profile*

Oi—0 to 1 inch; slightly decomposed plant material

Oe—1 to 2 inches; moderately decomposed plant material

A—2 to 5 inches; gravelly sandy loam

Bw1—5 to 11 inches; gravelly sandy loam

Bw2—11 to 19 inches; gravelly sandy loam

Cr—19 inches; bedrock

Characteristics of Holland Loam*Slope: 8 to 30 percent**Geomorphic position: Granitic mountains**Parent material: Fine-loamy colluvium and residuum weathered from granodiorite**Observed vegetation: Ponderosa pine, incense cedar, hardwoods, and shrubs**Texture of the surface layer: Loam**Percentage of the surface covered by rock fragments: None**Restrictive feature: None identified**Shrink-swell potential: Moderate (LEP of 3 to less than 6)**Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)**Annual flooding frequency: None**Annual ponding frequency: None**Water table (zone of saturation): None observed**Available water capacity: High (about 9.3 inches)**Natural drainage class: Well drained**Surface runoff (bare conditions): Medium**Interpretive groups**Land capability, irrigated: 4e-1**Land capability, nonirrigated: 4e-1**Hydric soil status: Not hydric**Hydrologic soil group: B**Typical profile*

A1 and A2—0 to 15 inches; loam

Bt1 to BCt—15 to 65 inches; clay loam

Minor Components in Map Unit 173yu**Flanly and similar soils***Composition: 5 percent**Slope: 8 to 30 percent**Geomorphic position: Mountains**Hydric soil status: Not hydric***Rock outcrop***Composition: 5 percent**Slope: 8 to 30 percent**Geomorphic position: Mountains**Hydric soil status: Not hydric***Swedesflat and similar soils***Composition: 5 percent*

Slope: 8 to 30 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Coarse-loamy soils that are less than 20 inches deep to bedrock

Composition: 5 percent
Slope: 8 to 30 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

175—Farwell clay loam, 0 to 1 percent slopes

Map Unit Setting

General location: Western Butte County
Major uses: Row crops, orchard crops, and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 120 to 170 feet (37 to 53 meters)
Mean annual precipitation: 21 to 23 inches (533 to 584 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 245 to 250 days

Map Unit Composition

Farwell clay loam, rarely flooded—85 percent
 Minor components—15 percent

Characteristics of Farwell Clay Loam, Rarely Flooded

Slope: 0 to 2 percent
Geomorphic position: Margins between distal alluvial fans and flood plains
Parent material: Fine-loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Walnut and almond orchards and valley oak
Surface feature: Most areas have been leveled for agriculture.
Texture of the surface layer: Clay loam
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Rare
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very high (about 11.7 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Very low

Interpretive groups

Land capability, irrigated: 1
Land capability, nonirrigated: 3s-2
Storie index: 75 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Ap—0 to 5 inches; clay loam

ABt—5 to 9 inches; clay loam
 Bt1—9 to 18 inches; clay loam
 Bt2—18 to 26 inches; clay loam
 Bt3—26 to 33 inches; clay loam
 2Btb1—33 to 43 inches; clay loam
 2Btb2—43 to 57 inches; clay loam
 2Btb3—57 to 72 inches; clay loam
 3Bwb—72 to 81 inches; loam

Minor Components in Map Unit 175

Gianella fine sandy loam or loam and similar soils

Composition: 5 percent

Slope: 0 to 2 percent

Geomorphic position: Bars on flood plains

Hydric soil status: Not hydric

Parrott silt loam and similar soils

Composition: 5 percent

Slope: 0 to 2 percent

Geomorphic position: Bars on flood plains

Hydric soil status: Not hydric

Areas with gravel and coarse sand on the surface

Composition: 3 percent

Slope: 0 to 2 percent

Geomorphic position: Channels on flood plains

Hydric soil status: Not hydric

Conejo clay loam or loam and similar soils

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Distal alluvial fans

Hydric soil status: Not hydric

176—Farwell loam, 0 to 1 percent slopes, occasionally flooded

Map Unit Setting

General location: Western Butte County

Major uses: Irrigated crops and orchard crops

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 150 to 170 feet (46 to 53 meters)

Mean annual precipitation: 21 to 23 inches (533 to 584 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 245 to 250 days

Map Unit Composition

Farwell loam, occasionally flooded—85 percent

Minor components—15 percent

Characteristics of Farwell Loam, Occasionally Flooded

Slope: 0 to 2 percent

Geomorphic position: Margins between distal alluvial fans and flood plains

Parent material: Fine-loamy alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Almond and walnut orchards and valley oak

Surface feature: Most areas have been leveled for agriculture.

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: None

Restrictive feature: None identified

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Dams and levees along the Sacramento River and its tributaries, drainage ditches, and leveling for agriculture have altered the hydrology, modifying the frequency and duration of saturation, ponding, and flooding.

Annual flooding frequency: Occasional

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very high (about 10.6 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Very low

Interpretive groups

Land capability, irrigated: 2s-2

Land capability, nonirrigated: 3s-2

Storie index: 79 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Ap—0 to 6 inches; loam

A1—6 to 20 inches; loam

A2—20 to 36 inches; loam

Btb—36 to 50 inches; clay loam

Bwb—50 to 60 inches; loam

Minor Components in Map Unit 176

Conejo clay loam and similar soils

Composition: 8 percent

Slope: 0 to 2 percent

Geomorphic position: Distal alluvial fans

Hydric soil status: Not hydric

Gianella fine sandy loam and similar soils

Composition: 3 percent

Slope: 0 to 2 percent

Geomorphic position: Bars on flood plains

Hydric soil status: Not hydric

Parrott silt loam and similar soils

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Bars on flood plains

Hydric soil status: Not hydric

Soils that have a sandy or gravelly substratum

Composition: 1 percent

Slope: 0 to 2 percent

Geomorphic position: Flood plains

Hydric soil status: Not hydric

Areas that have abandoned channels

Composition: 1 percent

Slope: 0 to 1 percent

Geomorphic position: Channels on flood plains

Hydric soil status: Not hydric

176yu—Jocal loam, 8 to 15 percent slopes

Map Unit Setting

General location: Yuba County and southeastern Butte County

Major uses: Timber production and homesite development

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 2,695 to 4,195 feet (822 to 1,280 meters)

Mean annual precipitation: 50 to 85 inches (1,270 to 2,159 millimeters)

Mean annual air temperature: 54 to 57 degrees F (12 to 14 degrees C)

Frost-free period: 160 to 230 days

Map Unit Composition

Jocal loam—80 percent

Minor components—20 percent

Characteristics of Jocal Loam

Slope: 8 to 15 percent

Geomorphic position: Metamorphic mountains

Parent material: Fine-loamy colluvium and residuum weathered from metasedimentary rocks

Observed vegetation: Mixed conifers, hardwoods, brush, grasses, and forbs

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: None

Restrictive feature: None identified

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 9.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A and Bt1—0 to 8 inches; loam

Bt2 to Bt6—8 to 73 inches; clay loam

Minor Components in Map Unit 176yu

Mariposa and similar soils

Composition: 10 percent

Slope: 8 to 15 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

Sites and similar soils

Composition: 5 percent

Slope: 8 to 15 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

Surnuf, high elevation, and similar soils

Composition: 5 percent

Slope: 8 to 15 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

177—Farwell silt loam, 0 to 1 percent slopes, occasionally flooded

Map Unit Setting

General location: Southwestern Butte County

Major uses: Irrigated row crops and orchard crops, nonirrigated grain and hay, livestock grazing, and wildlife habitat

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 95 to 120 feet (29 to 37 meters)

Mean annual precipitation: 18 to 21 inches (457 to 533 millimeters)

Mean annual air temperature: 61 degrees F (16 degrees C)

Frost-free period: 240 to 245 days

Map Unit Composition

Farwell silt loam, occasionally flooded—85 percent

Minor components—15 percent

Characteristics of Farwell Silt Loam, Occasionally Flooded

Slope: 0 to 2 percent

Geomorphic position: Margins between flood basins and flood plains

Parent material: Silty and loamy alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Annual grasses and forbs, beans, safflower, almond orchards, prune orchards, walnut orchards, and valley oak

Surface feature: Some areas have been leveled for agriculture.

Texture of the surface layer: Silt loam

Percentage of the surface covered by rock fragments: None

Restrictive feature: None identified

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Dams and levees along the Sacramento River and its tributaries, drainage ditches, and leveling for agriculture have altered the

hydrology, modifying the frequency and duration of saturation, ponding, and flooding.

Annual flooding frequency: Occasional

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very high (about 13.3 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Very low

Interpretive groups

Land capability, irrigated: 2s-2

Land capability, nonirrigated: 3s-2

Storie index: 79 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 6 inches; silt loam

ABt—6 to 11 inches; silty clay loam

Btb1—11 to 22 inches; silt loam

Btb2—22 to 33 inches; silty clay loam

Btb3—33 to 39 inches; silty clay loam

Btb4—39 to 49 inches; silt loam

Btb5—49 to 62 inches; loam and silty clay loam

Minor Components in Map Unit 177

Parrott silt loam and similar soils

Composition: 4 percent

Slope: 0 to 2 percent

Geomorphic position: Bars on flood plains

Hydric soil status: Not hydric

Dodgeland silty clay loam and similar soils

Composition: 4 percent

Slope: 0 to 2 percent

Geomorphic position: Margins between flood basins and flood plains

Hydric soil status: Hydric

Vermet silt loam and similar soils

Composition: 3 percent

Slope: 0 to 1 percent

Geomorphic position: Channels on flood plains

Hydric soil status: Hydric

Codora silty clay loam and similar soils

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Flood plains

Hydric soil status: Not hydric

Soils that have a sandy substratum

Composition: 1 percent

Slope: 0 to 1 percent

Geomorphic position: Flood plains

Hydric soil status: Not hydric

Areas with gravel and coarse sand on the surface

Composition: 1 percent

Slope: 0 to 1 percent
Geomorphic position: Channels on flood plains
Hydric soil status: Hydric

178—Arbuckle gravelly loam, 0 to 2 percent slopes

Map Unit Setting

General location: Western Butte County
Major uses: Livestock grazing, wildlife habitat, homesite development, and source of gravel
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 95 to 110 feet (30 to 34 meters)
Mean annual precipitation: 19 to 21 inches (483 to 533 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 240 to 245 days

Map Unit Composition

Arbuckle gravelly loam—87 percent
 Minor components—13 percent

Characteristics of Arbuckle Gravelly Loam

Slope: 0 to 2 percent
Geomorphic position: Low terraces
Parent material: Fine-loamy alluvium over gravelly alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Wild oat, Italian ryegrass, yellow starthistle, filaree, ripgut brome, soft chess, mouse barley, vetch, and curly dock
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 20 percent medium, subrounded gravel
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)
Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Rare
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 9.8 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very low

Interpretive groups

Land capability, irrigated: 2s-4
Land capability, nonirrigated: 3s-4
Storie index: 71 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

A1—0 to 4 inches; gravelly loam
 A2—4 to 9 inches; gravelly loam
 Bt1—9 to 20 inches; gravelly loam
 Bt2—20 to 32 inches; loam
 Bt3—32 to 49 inches; gravelly loam

2Bt4—49 to 68 inches; very gravelly sandy clay loam

2Bt5—68 to 86 inches; very gravelly sandy clay loam

Minor Components in Map Unit 178

Moda taxadjunct loam and similar soils

Composition: 3 percent

Slope: 0 to 2 percent

Geomorphic position: Low terraces

Hydric soil status: Not hydric

Oroville gravelly fine sandy loam and similar soils

Composition: 3 percent

Slope: 0 to 2 percent

Geomorphic position: Low terraces

Hydric soil status: Not hydric

Fernandez sandy loam and similar soils

Composition: 3 percent

Slope: 0 to 2 percent

Geomorphic position: Low terraces

Hydric soil status: Not hydric

Arbuckle gravelly sandy loam and similar soils

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Low terraces

Hydric soil status: Not hydric

Soils that are 40 to 80 inches deep to a duripan

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Low terraces

Hydric soil status: Not hydric

179—Moda taxadjunct-Arbuckle complex, 0 to 2 percent slopes

Map Unit Setting

General location: Western Butte County

Major uses: Livestock grazing and wildlife habitat

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 95 to 120 feet (30 to 37 meters)

Mean annual precipitation: 19 to 21 inches (483 to 533 millimeters)

Mean annual air temperature: 61 degrees F (16 degrees C)

Frost-free period: 240 to 245 days

Map Unit Composition

Moda taxadjunct loam—65 percent

Arbuckle gravelly loam—20 percent

Minor components—15 percent

Characteristics of Moda Taxadjunct Loam

Slope: 0 to 2 percent

Geomorphic position: Swales on low terraces

Parent material: Loamy alluvium over clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Soft chess, medusahead, Italian ryegrass, ripgut brome, purple needlegrass, coyote thistle, goldfields, popcorn flower, filaree, and yellow starthistle

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: 0 to 10 percent medium, subrounded gravel

Depth to a restrictive feature (duripan): 20 to 40 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: Rare

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 40 inches

Available water capacity: Low (about 3.6 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Storie index: 14 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

A1—0 to 2 inches; loam

A2—2 to 6 inches; loam

Bt1—6 to 13 inches; loam

2Bt2—13 to 22 inches; clay

2Bkqm—22 inches; duripan

Characteristics of Arbuckle Gravelly Loam

Slope: 0 to 2 percent

Geomorphic position: Mounds on low terraces

Parent material: Fine-loamy alluvium over gravelly alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Wild oat, Italian ryegrass, yellow starthistle, filaree, ripgut brome, soft chess, mouse barley, vetch, and curly dock

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 0 to 20 percent medium, subrounded gravel

Restrictive feature: None identified

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Rare

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 9.8 inches)

Natural drainage class: Well drained
Surface runoff (bare conditions): Very low

Interpretive groups

Land capability, irrigated: 2s-4
Land capability, nonirrigated: 3s-4
Storie index: 71 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

A1—0 to 4 inches; gravelly loam
 A2—4 to 9 inches; gravelly loam
 Bt1—9 to 20 inches; gravelly loam
 Bt2—20 to 32 inches; loam
 Bt3—32 to 49 inches; gravelly loam
 2Bt4—49 to 68 inches; very gravelly sandy clay loam
 2Bt5—68 to 86 inches; very gravelly sandy clay loam

Minor Components in Map Unit 179

Dodgeland silty clay loam and similar soils

Composition: 6 percent
Slope: 0 to 1 percent
Geomorphic position: Channels
Hydric soil status: Hydric

Farwell silty clay loam and similar soils

Composition: 5 percent
Slope: 0 to 2 percent
Geomorphic position: Margins between low terraces and flood plains
Hydric soil status: Not hydric

Soils that are frequently ponded for long periods

Composition: 4 percent
Slope: 0 to 1 percent
Geomorphic position: Vernal pools on low terraces
Hydric soil status: Hydric

180—Dodgeland silty clay loam, 0 to 5 percent slopes, occasionally flooded

Map Unit Setting

General location: Western Butte County
Major uses: Nonirrigated and irrigated crops, livestock grazing, and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 95 to 120 feet (29 to 37 meters)
Mean annual precipitation: 18 to 20 inches (457 to 508 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 240 days

Map Unit Composition

Dodgeland silty clay loam, occasionally flooded—85 percent
 Minor components—15 percent

Characteristics of Dodgeland Silty Clay Loam, Occasionally Flooded

Slope: 0 to 5 percent

Geomorphic position: Flood basins

Parent material: Silty and clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Rice, safflower, sunflowers, nonirrigated grain crops, soft chess, and filaree

Surface feature: Some areas have been leveled for agriculture.

Texture of the surface layer: Silty clay loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (duripan): 80 to 140 inches

Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: Occasional

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 80 inches

Available water capacity: High (about 9.5 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Storie index: 43 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

Ap1—0 to 4 inches; silty clay loam

Ap2—4 to 8 inches; silty clay

Bss1—8 to 18 inches; silty clay

Bss2—18 to 33 inches; silty clay

Bss3—33 to 45 inches; silty clay

Bkss—45 to 53 inches; silty clay

2Bw1—53 to 60 inches; silty clay loam

2Bw2—60 to 70 inches; silty clay loam

2Bw3—70 to 80 inches; silty clay loam

Minor Components in Map Unit 180

Vermet silty clay loam and similar soils

Composition: 5 percent

Slope: 0 to 5 percent

Geomorphic position: Channels on flood plains

Hydric soil status: Hydric

Parrott silt loam and similar soils

Composition: 3 percent

Slope: 0 to 5 percent

Geomorphic position: Bars on flood plains

Hydric soil status: Not hydric

Edjobe silty clay and similar soils*Composition:* 2 percent*Slope:* 0 to 5 percent*Geomorphic position:* Flood basins*Hydric soil status:* Hydric**Dodgeland silt loam or sandy clay loam, overwash, and similar soils***Composition:* 3 percent*Slope:* 0 to 5 percent*Geomorphic position:* Flood basins*Hydric soil status:* Hydric**Farwell silt loam and similar soils***Composition:* 2 percent*Slope:* 0 to 5 percent*Geomorphic position:* Margins of flood plains and flood basins*Hydric soil status:* Not hydric**181—Dodgeland silty clay loam, 0 to 1 percent slopes, frequently flooded*****Map Unit Setting****General location:* Western Butte County*Major uses:* Livestock grazing and wildlife habitat*Major land resource area:* 17*Landscape:* Sacramento Valley*Elevation:* 95 to 110 feet (29 to 35 meters)*Mean annual precipitation:* 18 to 19 inches (457 to 483 millimeters)*Mean annual air temperature:* 61 degrees F (16 degrees C)*Frost-free period:* 240 days***Map Unit Composition***

Dodgeland silty clay loam, frequently flooded—80 percent

Minor components—20 percent

Characteristics of Dodgeland Silty Clay Loam, Frequently Flooded*Slope:* 0 to 1 percent*Geomorphic position:* Channels on flood basins*Parent material:* Silty and clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks*Observed vegetation:* Fitch spikeweed, Italian ryegrass, filaree, soft chess, and hardstem tule*Surface feature:* A few areas have been leveled for agriculture.*Texture of the surface layer:* Silty clay loam*Percentage of the surface covered by rock fragments:* None*Depth to a restrictive feature (duripan):* 80 to 140 inches*Shrink-swell potential:* Very high (LEP of more than 9)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Altered hydrology:* Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: Frequent
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 80 inches
Available water capacity: High (about 9.5 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Storie index: 43 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile

Ap1—0 to 4 inches; silty clay loam
 Ap2—4 to 8 inches; silty clay
 Bss1—8 to 18 inches; silty clay
 Bss2—18 to 33 inches; silty clay
 Bss3—33 to 45 inches; silty clay
 Bkss—45 to 53 inches; silty clay
 2Bw1—53 to 60 inches; silty clay loam
 2Bw2—60 to 70 inches; silty clay loam
 2Bw3—70 to 80 inches; silty clay loam

Minor Components in Map Unit 181

Vermet and similar soils

Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Channels along margins of flood plains and flood basins
Hydric soil status: Hydric

Parrott and similar soils

Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Margins of flood plains and flood basins
Hydric soil status: Not hydric

Farwell silt loam and similar soils

Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Margins of flood plains and flood basins
Hydric soil status: Not hydric

Edjobe and similar soils

Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Areas that have been scoured by flooding

Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Channels on flood basins
Hydric soil status: Hydric

188yu—Mariposa taxadjunct gravelly loam, 15 to 30 percent slopes

Map Unit Setting

General location: Yuba County and southeastern Butte County

Major uses: Timber production and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 2,000 to 4,195 feet (610 to 1,280 meters)

Mean annual precipitation: 50 to 80 inches (1,270 to 2,032 millimeters)

Mean annual air temperature: 54 to 57 degrees F (12 to 14 degrees C)

Frost-free period: 160 to 230 days

Map Unit Composition

Mariposa taxadjunct gravelly loam—80 percent

Minor components—20 percent

Characteristics of Mariposa Taxadjunct Gravelly Loam

Slope: 15 to 30 percent

Geomorphic position: Metamorphic mountains

Parent material: Gravelly and loamy colluvium derived from metamorphic rocks

Observed vegetation: Mixed conifers, hardwoods, brush, grasses, and forbs

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (lithic bedrock): 15 to 35 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 2.7 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A—0 to 4 inches; gravelly loam

Bt1 to Bt3—4 to 23 inches; gravelly clay loam

R—23 inches; bedrock

Minor Components in Map Unit 188yu

Rock outcrop

Composition: 10 percent

Slope: 15 to 30 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

Jocal and similar soils*Composition:* 5 percent*Slope:* 15 to 30 percent*Geomorphic position:* Mountains*Hydric soil status:* Not hydric**Sites and similar soils***Composition:* 5 percent*Slope:* 15 to 30 percent*Geomorphic position:* Mountains*Hydric soil status:* Not hydric**189—Esquon silt loam, 0 to 1 percent slopes, overwash*****Map Unit Setting****General location:* Southwestern Butte County*Major uses:* Irrigated cropland and wildlife habitat*Major land resource area:* 17*Landscape:* Sacramento Valley*Elevation:* 65 to 75 feet (21 to 24 meters)*Mean annual precipitation:* 19 inches (483 millimeters)*Mean annual air temperature:* 61 degrees F (16 degrees C)*Frost-free period:* 240 days***Map Unit Composition***

Esquon silt loam, overwash—90 percent

Minor components—10 percent

Characteristics of Esquon Silt Loam, Overwash*Slope:* 0 to 1 percent*Geomorphic position:* Flood basins*Parent material:* Silty alluvium over clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks*Observed vegetation:* Rice and annual grasses and forbs*Surface features:* Overwash originating from the Cherokee Gold Mine occurs as layers of silt loam and very fine loamy sand that buried the natural surface layer of clay.

The surface has been laser-leveled for rice production.

Texture of the surface layer: Silt loam*Percentage of the surface covered by rock fragments:* None*Depth to a restrictive feature (duripan):* 40 to 60 inches*Shrink-swell potential:* Very high (LEP of more than 9)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Altered hydrology:* Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.*Annual flooding frequency:* Rare*Annual ponding frequency:* Frequent*Depth to a water table (zone of saturation):* 0 to 60 inches*Available water capacity:* High (about 9.8 inches)*Natural drainage class:* Poorly drained*Surface runoff (bare conditions):* High

Interpretive groups

Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Storie index: 49 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile

Ap1—0 to 4 inches; silt loam
 Ap2—4 to 9 inches; silt loam
 C—9 to 15 inches; stratified very fine sandy loam to silt loam
 Bssb1—15 to 35 inches; silty clay
 Bssb2—35 to 48 inches; silty clay
 Bkb—48 to 60 inches; silty clay loam
 2Bkqmb—60 inches; duripan

Minor Components in Map Unit 189**Neerdobe silt loam, overwash, and similar soils**

Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Soils that are less than 40 inches deep to a duripan

Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Soils that have overwash as much as 30 inches thick

Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

189yu—Mariposa taxadjunct gravelly loam, 30 to 50 percent slopes***Map Unit Setting***

General location: Yuba County and southeastern Butte County
Major uses: Timber production and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,000 to 4,195 feet (610 to 1,280 meters)
Mean annual precipitation: 50 to 80 inches (1,270 to 2,032 millimeters)
Mean annual air temperature: 54 to 57 degrees F (12 to 14 degrees C)
Frost-free period: 160 to 230 days

Map Unit Composition

Mariposa taxadjunct gravelly loam—80 percent
 Minor components—20 percent

Characteristics of Mariposa Taxadjunct Gravelly Loam

Slope: 30 to 50 percent

Geomorphic position: Metamorphic mountains

Parent material: Gravelly and loamy colluvium derived from metamorphic rocks

Observed vegetation: Mixed conifers, hardwoods, brush, grasses, and forbs

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (lithic bedrock): 15 to 35 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 2.7 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A—0 to 4 inches; gravelly loam

Bt1 to Bt3—4 to 23 inches; gravelly clay loam

R—23 inches; bedrock

Minor Components in Map Unit 189yu

Rock outcrop

Composition: 10 percent

Slope: 30 to 50 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

Sites and similar soils

Composition: 5 percent

Slope: 30 to 50 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

Surnuf and similar soils

Composition: 5 percent

Slope: 30 to 50 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

196yu—Mildred cobbly loam, 30 to 50 percent slopes

Map Unit Setting

General location: Yuba County and southeastern Butte County

Major uses: Wildlife habitat and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 1,495 to 3,240 feet (457 to 988 meters)

Mean annual precipitation: 35 to 62 inches (889 to 1,574 millimeters)

Mean annual air temperature: 55 to 59 degrees F (13 to 15 degrees C)

Frost-free period: 190 to 230 days

Map Unit Composition

Mildred cobbly loam—80 percent

Minor components—20 percent

Characteristics of Mildred Cobbly Loam

Slope: 30 to 50 percent

Geomorphic position: Mountains

Parent material: Clayey colluvium and residuum weathered from intrusive igneous rocks

Observed vegetation: Interior live oak, MacNab cypress, brush, grasses, and scattered black oak and ponderosa pine

Texture of the surface layer: Cobbly loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 3.3 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 3 inches; cobbly loam

Bt—3 to 9 inches; cobbly clay loam

2Bt and 2BCt—9 to 23 inches; clay

2Cr—23 inches; bedrock

Minor Components in Map Unit 196yu

Surnuf and similar soils

Composition: 10 percent

Slope: 30 to 50 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

Flanly and similar soils

Composition: 5 percent

Slope: 30 to 50 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

Fine textured soils that are 10 to 20 or 40 to 60 inches deep

Composition: 5 percent

Slope: 30 to 50 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

200—Parrott silt loam, 0 to 2 percent slopes, occasionally flooded

Map Unit Setting

General location: Western Butte County

Major uses: Orchard crops, nonirrigated crops, and wildlife habitat

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 95 to 155 feet (30 to 48 meters)

Mean annual precipitation: 18 to 22 inches (457 to 559 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 240 to 245 days

Map Unit Composition

Parrott silt loam, occasionally flooded—85 percent

Minor components—15 percent

Characteristics of Parrott Silt Loam, Occasionally Flooded

Slope: 0 to 2 percent

Geomorphic position: Bars on flood plains

Parent material: Silty alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Walnut and almond orchards, safflower, wheat, valley oak, cottonwood, California wild grape, Pacific poison oak, blue elderberry, coyote brush, and creeping wildrye

Surface features: Most areas have been leveled for agriculture. Natural bar-and-channel topography remains in some areas.

Texture of the surface layer: Silt loam

Percentage of the surface covered by rock fragments: None

Restrictive feature: None identified

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Dams and levees along the Sacramento River and its tributaries, drainage ditches, and leveling for agriculture have altered the hydrology, modifying the frequency and duration of saturation, ponding, and flooding. During exceptionally wet winters, the water table may be as high as 8 to 30 inches from December through March.

Annual flooding frequency: Occasional

Annual ponding frequency: Occasional

Depth to a water table (zone of saturation): 60 to 89 inches

Available water capacity: Very high (about 11.1 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very low

Interpretive groups

Land capability, irrigated: 3w-2

Land capability, nonirrigated: 3w-2

Storie index: 83 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A1—0 to 2 inches; silt loam

A2—2 to 8 inches; silt loam

Bw1—8 to 20 inches; silt loam
 Bw2—20 to 37 inches; silt loam
 Bw3—37 to 49 inches; silt loam
 Bw4—49 to 63 inches; silt loam
 C—63 to 89 inches; silt loam

Minor Components in Map Unit 200

Gianella fine sandy loam or loam and similar soils

Composition: 5 percent
Slope: 0 to 2 percent
Geomorphic position: Bars on flood plains
Hydric soil status: Not hydric

Kusalslough silty clay loam and similar soils

Composition: 4 percent
Slope: 0 to 2 percent
Geomorphic position: Margins between alluvial fans and flood plains
Hydric soil status: Not hydric

Vermet silt loam and similar soils

Composition: 3 percent
Slope: 0 to 2 percent
Geomorphic position: Channels on flood plains
Hydric soil status: Hydric

Conejo clay loam and similar soils

Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Alluvial fans adjacent to flood plains
Hydric soil status: Not hydric

Soils that have stratified textures

Composition: 1 percent
Slope: 0 to 2 percent
Geomorphic position: Filled channels on flood plains
Hydric soil status: Hydric

201—Parrott silt loam, 0 to 2 percent slopes, frequently flooded

Map Unit Setting

General location: Western Butte County
Major uses: Orchard crops, nonirrigated crops, and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 85 to 170 feet (27 to 52 meters)
Mean annual precipitation: 18 to 23 inches (457 to 584 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 240 to 245 days

Map Unit Composition

Parrott silt loam, frequently flooded—85 percent
 Minor components—15 percent

Characteristics of Parrott Silt Loam, Frequently Flooded

Slope: 0 to 2 percent

Geomorphic position: Bars on flood plains

Parent material: Silty alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Walnut and almond orchards, safflower, wheat, valley oak, cottonwood, California wild grape, Pacific poison oak, blue elderberry, coyote brush, and creeping wildrye

Surface features: Most areas have been leveled for agriculture. Natural bar-and-channel topography remains in some areas.

Texture of the surface layer: Silt loam

Percentage of the surface covered by rock fragments: None

Restrictive feature: None identified

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding. During exceptionally wet winters, the water table may be as high as 8 to 30 inches from December through March.

Annual flooding frequency: Frequent

Annual ponding frequency: Occasional

Depth to a water table (zone of saturation): 60 to 89 inches

Available water capacity: Very high (about 11.1 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very low

Interpretive groups

Land capability, irrigated: 4w-2

Land capability, nonirrigated: 4w-2

Storie index: 65 (revised)

Hydric soil status: Hydric

Hydrologic soil group: B

Typical profile

A1—0 to 2 inches; silt loam

A2—2 to 8 inches; silt loam

Bw1—8 to 20 inches; silt loam

Bw2—20 to 37 inches; silt loam

Bw3—37 to 49 inches; silt loam

Bw4—49 to 63 inches; silt loam

C—63 to 89 inches; silt loam

Minor Components in Map Unit 201

Gianella fine sandy loam or loam and similar soils

Composition: 5 percent

Slope: 0 to 2 percent

Geomorphic position: Bars on flood plains

Hydric soil status: Hydric

Kusalslough silty clay loam and similar soils

Composition: 5 percent

Slope: 0 to 2 percent

Geomorphic position: Margins of flood basins, alluvial fans, and flood plains

Hydric soil status: Hydric

Soils that formed in stratified fill

Composition: 3 percent

Slope: 0 to 2 percent

Geomorphic position: Abandoned channels on flood plains

Hydric soil status: Hydric

Conejo clay loam and similar soils

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Distal alluvial fans

Hydric soil status: Not hydric

203—Kusalslough silty clay loam, 0 to 1 percent slopes, occasionally flooded

Map Unit Setting

General location: Northwestern Butte County

Major uses: Orchard crops and row crops

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 120 to 140 feet (37 to 43 meters)

Mean annual precipitation: 21 to 22 inches (533 to 559 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 240 to 250 days

Map Unit Composition

Kusalslough silty clay loam, occasionally flooded—85 percent

Minor components—15 percent

Characteristics of Kusalslough Silty Clay Loam, Occasionally Flooded

Slope: 0 to 1 percent

Geomorphic position: Flood plains

Parent material: Silty alluvium over clayey alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Almond and walnut orchards and row crops

Texture of the surface layer: Silty clay loam

Percentage of the surface covered by rock fragments: None

Restrictive feature: None identified

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Occasional

Annual ponding frequency: Occasional

Depth to a water table (zone of saturation): 14 to 72 inches

Available water capacity: Very high (about 10.7 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Negligible

Interpretive groups

Land capability, irrigated: 2w-2

Land capability, nonirrigated: 3w-2

Storie index: 62 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile

Ap1—0 to 4 inches; silty clay loam
 Ap2—4 to 12 inches; silty clay loam
 Bw—12 to 21 inches; silty clay loam
 Ab—21 to 31 inches; silty clay loam
 Bwb1—31 to 41 inches; silty clay loam
 Bwb2—41 to 57 inches; silty clay
 Bwb3—57 to 69 inches; silty clay
 Bwb4—69 to 80 inches; silty clay

Minor Components in Map Unit 203

Bosquejo silt loam, overwash, occasionally flooded, and similar soils

Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Flood plains
Hydric soil status: Not hydric

Bosquejo clay and similar soils

Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Interfan basins
Hydric soil status: Not hydric

Busacca clay loam and similar soils

Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Distal alluvial fans
Hydric soil status: Not hydric

Parrott silt loam, occasionally flooded, and similar soils

Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Flood plains
Hydric soil status: Not hydric

205—Parrott-Vermet complex, 0 to 2 percent slopes, frequently flooded

Map Unit Setting

General location: Western Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 85 to 140 feet (26 to 44 meters)
Mean annual precipitation: 18 to 22 inches (457 to 559 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 240 to 245 days

Map Unit Composition

Parrott silt loam, frequently flooded—50 percent

Vermet silt loam, frequently flooded—35 percent

Minor components—15 percent

Characteristics of Parrott Silt Loam, Frequently Flooded

Slope: 0 to 2 percent

Geomorphic position: Bars on flood plains

Parent material: Silty alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Valley oak, cottonwood, California wild grape, Pacific poison oak, blue elderberry, coyote brush, and creeping wildrye

Surface features: Most areas have been leveled for agriculture. Natural bar-and-channel topography remains in some areas.

Texture of the surface layer: Silt loam

Percentage of the surface covered by rock fragments: None

Restrictive feature: None identified

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding. During exceptionally wet winters, the water table may be as high as 8 to 30 inches from December through March.

Annual flooding frequency: Frequent

Annual ponding frequency: Occasional

Depth to a water table (zone of saturation): 60 to 89 inches

Available water capacity: Very high (about 11.1 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very low

Interpretive groups

Land capability, irrigated: 4w-2

Land capability, nonirrigated: 4w-2

Storie index: 65 (revised)

Hydric soil status: Hydric

Hydrologic soil group: B

Typical profile

A1—0 to 2 inches; silt loam

A2—2 to 8 inches; silt loam

Bw1—8 to 20 inches; silt loam

Bw2—20 to 37 inches; silt loam

Bw3—37 to 49 inches; silt loam

Bw4—49 to 63 inches; silt loam

C—63 to 89 inches; silt loam

Characteristics of Vermet Silt Loam, Frequently Flooded

Slope: 0 to 2 percent

Geomorphic position: Channels on flood plains

Parent material: Silty alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Valley oak, cottonwood, California wild grape, Pacific poison oak, blue elderberry, coyote brush, and creeping wildrye

Surface features: The surface has been leveled for agriculture. Natural bar-and-channel topography remains in some areas.

Texture of the surface layer: Silt loam

Percentage of the surface covered by rock fragments: 0 to 20 percent fine, well rounded gravel

Restrictive feature: None identified

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding. During exceptionally wet winters, the water table may be as high as 8 to 30 inches from December through March.

Annual flooding frequency: Frequent

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 80 inches

Available water capacity: Very high (about 11.6 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Storie index: 34 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

A1—0 to 2 inches; silt loam

A2—2 to 8 inches; silt loam

A3—8 to 13 inches; silt loam

Bw1—13 to 16 inches; silty clay loam

Bw2—16 to 26 inches; silty clay loam

Bw3—26 to 41 inches; silty clay loam

Bw4—41 to 62 inches; silty clay loam

Bw5—62 to 72 inches; silty clay loam

Minor Components in Map Unit 205

Columbia sand and similar soils

Composition: 8 percent

Slope: 0 to 2 percent

Geomorphic position: Channels on flood plains

Hydric soil status: Hydric

Riverwash

Composition: 7 percent

Slope: 0 to 2 percent

Geomorphic position: Gravel bars in channels

Hydric soil status: Hydric

206—Islandbar-Chawanakee complex, 3 to 15 percent slopes

Map Unit Setting

General location: Eastern Butte County

Major uses: Timber production, homesite development, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 2,400 to 2,795 feet (732 to 853 meters)

Mean annual precipitation: 50 to 60 inches (1,270 to 1,524 millimeters)

Mean annual air temperature: 54 to 57 degrees F (12 to 14 degrees C)

Frost-free period: 190 to 235 days

Map Unit Composition

Islandbar sandy loam—60 percent

Chawanakee gravelly sandy loam—30 percent

Minor components—10 percent

Characteristics of Islandbar Sandy Loam

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on granitic mountains

Parent material: Coarse-loamy residuum weathered from quartz diorite or trondhjemite

Observed vegetation: Ponderosa pine, incense cedar, canyon live oak, tanoak, Douglas-fir, California black oak, Pacific poison oak, whiteleaf manzanita, deerbrush, and toyon

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 10 percent coarse, subrounded gravel

Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 5.7 inches)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: A

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A1—2 to 5 inches; sandy loam

A2—5 to 9 inches; sandy loam

Bw1—9 to 27 inches; sandy loam

Bw2—27 to 36 inches; sandy loam

Bw3—36 to 47 inches; sandy loam

Bw4—47 to 58 inches; sandy loam

C1—58 to 62 inches; loamy sand

C2—62 to 72 inches; extremely gravelly loamy sand

Characteristics of Chawanakee Gravelly Sandy Loam

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on granitic mountains

Parent material: Coarse-loamy residuum weathered from quartz diorite or trondhjemite

Observed vegetation: Ponderosa pine, whiteleaf manzanita, canyon live oak, incense

cedar, sugar pine, California black oak, Douglas-fir, deerbrush, and California buckthorn

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent subrounded gravel, 0 to 5 percent subrounded boulders

Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.4 inches)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

Oe—1 to 2 inches; moderately decomposed plant material

A—2 to 5 inches; gravelly sandy loam

Bw1—5 to 11 inches; gravelly sandy loam

Bw2—11 to 19 inches; gravelly sandy loam

Cr—19 inches; bedrock

Minor Components in Map Unit 206

Rock outcrop

Composition: 3 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on granitic mountains

Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to bedrock

Composition: 3 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on granitic mountains

Hydric soil status: Not hydric

Featherfalls sandy loam and similar soils

Composition: 2 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on granitic mountains

Hydric soil status: Not hydric

Soils that are 20 to 40 inches deep to bedrock

Composition: 2 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on granitic mountains

Hydric soil status: Not hydric

207—Islandbar-Chawanakee complex, 15 to 30 percent slopes

Map Unit Setting

General location: Eastern Butte County

Major uses: Timber production, homesite development, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 2,200 to 3,040 feet (671 to 927 meters)

Mean annual precipitation: 50 to 65 inches (1,270 to 1,651 millimeters)

Mean annual air temperature: 54 to 57 degrees F (12 to 14 degrees C)

Frost-free period: 190 to 235 days

Map Unit Composition

Islandbar sandy loam—60 percent

Chawanakee gravelly sandy loam—30 percent

Minor components—10 percent

Characteristics of Islandbar Sandy Loam

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and shoulder slopes on granitic mountains

Parent material: Coarse-loamy residuum and colluvium derived from trondhjemite or quartz diorite

Observed vegetation: Ponderosa pine, incense cedar, canyon live oak, tanoak, Douglas-fir, California black oak, Pacific poison oak, whiteleaf manzanita, deerbrush, and toyon

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 10 percent coarse, subrounded gravel

Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 5.7 inches)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: A

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A1—2 to 5 inches; sandy loam

A2—5 to 9 inches; sandy loam

Bw1—9 to 27 inches; sandy loam

Bw2—27 to 36 inches; sandy loam

Bw3—36 to 47 inches; sandy loam

- Bw4—47 to 58 inches; sandy loam
 C1—58 to 62 inches; loamy sand
 C2—62 to 72 inches; extremely gravelly loamy sand

Characteristics of Chawanakee Gravelly Sandy Loam

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and shoulder slopes on granitic mountains

Parent material: Coarse-loamy residuum and colluvium weathered from trondhjemite or quartz diorite

Observed vegetation: Ponderosa pine, whiteleaf manzanita, canyon live oak, incense cedar, sugar pine, California black oak, Douglas-fir, deerbrush, and California buckthorn

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent subrounded gravel, 0 to 5 percent subrounded boulders

Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.4 inches)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

Oe—1 to 2 inches; moderately decomposed plant material

A—2 to 5 inches; gravelly sandy loam

Bw1—5 to 11 inches; gravelly sandy loam

Bw2—11 to 19 inches; gravelly sandy loam

Cr—19 inches; bedrock

Minor Components in Map Unit 207

Rock outcrop

Composition: 3 percent

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and shoulder slopes on granitic mountains

Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to bedrock

Composition: 3 percent

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and shoulder slopes on granitic mountains

Hydric soil status: Not hydric

Soils that are 20 to 40 inches deep to bedrock

Composition: 3 percent

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and shoulder slopes on granitic mountains

Hydric soil status: Not hydric

Featherfalls sandy loam and similar soils

Composition: 1 percent

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and shoulder slopes on granitic mountains

Hydric soil status: Not hydric

208—Islandbar-Chawanakee complex, 30 to 50 percent slopes

Map Unit Setting

General location: Eastern Butte County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 2,115 to 2,765 feet (646 to 844 meters)

Mean annual precipitation: 50 to 65 inches (1,270 to 1,651 millimeters)

Mean annual air temperature: 54 to 57 degrees F (12 to 14 degrees C)

Frost-free period: 190 to 235 days

Map Unit Composition

Islandbar sandy loam—60 percent

Chawanakee gravelly sandy loam—30 percent

Minor components—10 percent

Characteristics of Islandbar Sandy Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes on granitic mountains

Parent material: Coarse-loamy colluvium derived from trondhjemite or quartz diorite

Observed vegetation: Ponderosa pine, incense cedar, canyon live oak, tanoak, Douglas-fir, California black oak, Pacific poison oak, whiteleaf manzanita, deerbrush, and toyon

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 10 percent coarse, subrounded gravel

Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 5.7 inches)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: A

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material
 A1—2 to 5 inches; sandy loam
 A2—5 to 9 inches; sandy loam
 Bw1—9 to 27 inches; sandy loam
 Bw2—27 to 36 inches; sandy loam
 Bw3—36 to 47 inches; sandy loam
 Bw4—47 to 58 inches; sandy loam
 C1—58 to 62 inches; loamy sand
 C2—62 to 72 inches; extremely gravelly loamy sand

Characteristics of Chawanakee Gravelly Sandy Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes on granitic mountains

Parent material: Coarse-loamy residuum and colluvium weathered from trondhjemite or quartz diorite

Observed vegetation: Ponderosa pine, whiteleaf manzanita, canyon live oak, incense cedar, sugar pine, California black oak, Douglas-fir, deerbrush, and California buckthorn

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent subrounded gravel, 0 to 5 percent subrounded boulders

Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.4 inches)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
 Oe—1 to 2 inches; moderately decomposed plant material
 A—2 to 5 inches; gravelly sandy loam
 Bw1—5 to 11 inches; gravelly sandy loam
 Bw2—11 to 19 inches; gravelly sandy loam
 Cr—19 inches; bedrock

Minor Components in Map Unit 208**Rock outcrop**

Composition: 4 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

Soils that are 20 to 40 inches deep to bedrock

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to bedrock

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

Featherfalls sandy loam and similar soils

Composition: 1 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

209—Islandbar-Chawanakee complex, 50 to 70 percent slopes

Map Unit Setting

General location: Eastern Butte County

Major uses: Wildlife habitat and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 1,715 to 2,000 feet (524 to 610 meters)

Mean annual precipitation: 55 to 60 inches (1,397 to 1,524 millimeters)

Mean annual air temperature: 57 degrees F (14 degrees C)

Frost-free period: 220 days

Map Unit Composition

Islandbar sandy loam—60 percent

Chawanakee gravelly sandy loam—30 percent

Minor components—10 percent

Characteristics of Islandbar Sandy Loam

Slope: 50 to 70 percent

Geomorphic position: Backslopes on granitic mountains

Parent material: Coarse-loamy colluvium derived from trondhjemite

Observed vegetation: Ponderosa pine, incense cedar, canyon live oak, tanoak, Douglas-fir, California black oak, Pacific poison oak, whiteleaf manzanita, deerbrush, and toyon

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 10 percent coarse, subrounded gravel

Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 5.7 inches)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material
 A1—2 to 5 inches; sandy loam
 A2—5 to 9 inches; sandy loam
 Bw1—9 to 27 inches; sandy loam
 Bw2—27 to 36 inches; sandy loam
 Bw3—36 to 47 inches; sandy loam
 Bw4—47 to 58 inches; sandy loam
 C1—58 to 62 inches; loamy sand
 C2—62 to 72 inches; extremely gravelly loamy sand

Characteristics of Chawanakee Gravelly Sandy Loam

Slope: 50 to 70 percent

Geomorphic position: Backslopes on granitic mountains

Parent material: Coarse-loamy colluvium and residuum weathered from trondhjemite

Observed vegetation: Ponderosa pine, whiteleaf manzanita, canyon live oak, incense cedar, sugar pine, California black oak, Douglas-fir, deerbrush, and California buckthorn

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 5 percent subrounded boulders

Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.4 inches)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
 Oe—1 to 2 inches; moderately decomposed plant material
 A—2 to 5 inches; gravelly sandy loam
 Bw1—5 to 11 inches; gravelly sandy loam
 Bw2—11 to 19 inches; gravelly sandy loam
 Cr—19 inches; bedrock

Minor Components in Map Unit 209**Rock outcrop**

Composition: 4 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on granitic mountains

Hydric soil status: Not hydric

Soils that are 20 to 40 inches deep to bedrock

Composition: 3 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on granitic mountains

Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to bedrock

Composition: 2 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on granitic mountains

Hydric soil status: Not hydric

Featherfalls sandy loam and similar soils

Composition: 1 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on granitic mountains

Hydric soil status: Not hydric

210—Featherfalls-Islandbar complex, 2 to 15 percent slopes

Map Unit Setting

General location: Eastern Butte County

Major uses: Timber production, wildlife habitat, watershed, and homesite development

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 2,000 to 2,995 feet (610 to 914 meters)

Mean annual precipitation: 50 to 60 inches (1,270 to 1,524 millimeters)

Mean annual air temperature: 54 to 55 degrees F (12 to 13 degrees C)

Frost-free period: 180 to 235 days

Map Unit Composition

Featherfalls sandy loam—50 percent

Islandbar sandy loam—35 percent

Minor components—15 percent

Characteristics of Featherfalls Sandy Loam

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and side slopes on granitic mountains

Parent material: Fine-loamy colluvium and residuum weathered from trondhjemite or quartz diorite

Observed vegetation: Douglas-fir, ponderosa pine, California black oak, incense cedar, Pacific madrone, tanoak, Pacific poison oak, California honeysuckle, and whiteleaf manzanita

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 25 percent subrounded boulders

Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 8.1 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
 A1—1 to 4 inches; sandy loam
 A2—4 to 7 inches; sandy loam
 Bt1—7 to 17 inches; sandy clay loam
 Bt2—17 to 24 inches; sandy clay loam
 Bt3—24 to 32 inches; sandy clay loam
 Bt4—32 to 42 inches; sandy clay loam
 BCt1—42 to 61 inches; paracobbly sandy clay loam
 BCt2—61 to 72 inches; paracobbly sandy clay loam
 Crt—72 to 80 inches; very paragravelly sandy clay loam

Characteristics of Islandbar Sandy Loam

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and side slopes on granitic mountains

Parent material: Coarse-loamy colluvium and residuum weathered from trondhjemite or quartz diorite

Observed vegetation: Ponderosa pine, incense cedar, canyon live oak, tanoak, Douglas-fir, California black oak, Pacific poison oak, whiteleaf manzanita, deerbrush, and toyon

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 10 percent coarse, subrounded gravel

Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 5.7 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material
 A1—2 to 5 inches; sandy loam
 A2—5 to 9 inches; sandy loam
 Bw1—9 to 27 inches; sandy loam

Bw2—27 to 36 inches; sandy loam
 Bw3—36 to 47 inches; sandy loam
 Bw4—47 to 58 inches; sandy loam
 C1—58 to 62 inches; loamy sand
 C2—62 to 72 inches; extremely gravelly loamy sand

Minor Components in Map Unit 210

Fine-loamy soils that are 40 to 60 inches deep to densic bedrock

Composition: 5 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and side slopes on granitic mountains

Hydric soil status: Not hydric

Coarse-loamy soils that are 40 to 60 inches deep to densic bedrock

Composition: 4 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and side slopes on granitic mountains

Hydric soil status: Not hydric

Haploxerults, fine-loamy, more than 35 percent clay in the subsoil, and similar soils

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and side slopes on granitic mountains

Hydric soil status: Not hydric

Chawanakee and similar soils

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and side slopes on granitic mountains

Hydric soil status: Not hydric

Soils that are underlain by paralithic bedrock

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and side slopes on granitic mountains

Hydric soil status: Not hydric

211—Featherfalls-Islandbar complex, 15 to 30 percent slopes

Map Unit Setting

General location: Eastern Butte County

Major uses: Timber production, wildlife habitat, watershed, and homesite development

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 2,000 to 3,175 feet (610 to 968 meters)

Mean annual precipitation: 50 to 65 inches (1,270 to 1,651 millimeters)

Mean annual air temperature: 54 to 57 degrees F (12 to 14 degrees C)

Frost-free period: 180 to 235 days

Map Unit Composition

Featherfalls sandy loam—50 percent

Islandbar sandy loam—35 percent

Minor components—15 percent

Characteristics of Featherfalls Sandy Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes on granitic mountains

Parent material: Fine-loamy colluvium derived from trondhjemite or quartz diorite

Observed vegetation: Douglas-fir, ponderosa pine, California black oak, incense cedar, Pacific madrone, tanoak, Pacific poison oak, California honeysuckle, and whiteleaf manzanita

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 25 percent subrounded boulders

Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 8.1 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A1—1 to 4 inches; sandy loam

A2—4 to 7 inches; sandy loam

Bt1—7 to 17 inches; sandy clay loam

Bt2—17 to 24 inches; sandy clay loam

Bt3—24 to 32 inches; sandy clay loam

Bt4—32 to 42 inches; sandy clay loam

BCt1—42 to 61 inches; paracobbly sandy clay loam

BCt2—61 to 72 inches; paracobbly sandy clay loam

Crt—72 to 80 inches; very paragravelly sandy clay loam

Characteristics of Islandbar Sandy Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes on granitic mountains

Parent material: Coarse-loamy colluvium derived from trondhjemite or quartz diorite

Observed vegetation: Ponderosa pine, incense cedar, canyon live oak, tanoak, Douglas-fir, California black oak, Pacific poison oak, whiteleaf manzanita, deerbrush, and toyon

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 10 percent coarse, subrounded gravel

Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 5.7 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material
A1—2 to 5 inches; sandy loam
A2—5 to 9 inches; sandy loam
Bw1—9 to 27 inches; sandy loam
Bw2—27 to 36 inches; sandy loam
Bw3—36 to 47 inches; sandy loam
Bw4—47 to 58 inches; sandy loam
C1—58 to 62 inches; loamy sand
C2—62 to 72 inches; extremely gravelly loamy sand

Minor Components in Map Unit 211

Fine-loamy soils that are 40 to 60 inches deep to densic bedrock

Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Coarse-loamy soils that are 40 to 60 inches deep to densic bedrock

Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Haploxerults, fine-loamy, more than 35 percent clay in the subsoil, and similar soils

Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Chawanakee and similar soils

Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Soils that are underlain by paralithic bedrock

Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

212—Featherfalls-Islandbar complex, 30 to 50 percent slopes

Map Unit Setting

General location: Eastern Butte County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 1,840 to 2,995 feet (561 to 914 meters)

Mean annual precipitation: 50 to 65 inches (1,270 to 1,651 millimeters)

Mean annual air temperature: 54 to 57 degrees F (12 to 14 degrees C)

Frost-free period: 170 to 235 days

Map Unit Composition

Featherfalls sandy loam—50 percent

Islandbar sandy loam—35 percent

Minor components—15 percent

Characteristics of Featherfalls Sandy Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes on granitic mountains

Parent material: Fine-loamy colluvium and residuum weathered from trondhjemite or quartz diorite

Observed vegetation: Douglas-fir, ponderosa pine, California black oak, incense cedar, Pacific madrone, tanoak, Pacific poison oak, California honeysuckle, and whiteleaf manzanita

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 25 percent subrounded boulders

Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 8.1 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A1—1 to 4 inches; sandy loam

A2—4 to 7 inches; sandy loam

Bt1—7 to 17 inches; sandy clay loam

Bt2—17 to 24 inches; sandy clay loam

Bt3—24 to 32 inches; sandy clay loam

Bt4—32 to 42 inches; sandy clay loam

BCt1—42 to 61 inches; paracobbly sandy clay loam

BCT2—61 to 72 inches; paracobbly sandy clay loam
 CRT—72 to 80 inches; very paragravelly sandy clay loam

Characteristics of Islandbar Sandy Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes on granitic mountains

Parent material: Coarse-loamy colluvium and residuum weathered from trondhjemite or quartz diorite

Observed vegetation: Ponderosa pine, incense cedar, canyon live oak, tanoak, Douglas-fir, California black oak, Pacific poison oak, whiteleaf manzanita, deerbrush, and toyon

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 10 percent coarse, subrounded gravel

Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 5.7 inches)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: A

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A1—2 to 5 inches; sandy loam

A2—5 to 9 inches; sandy loam

Bw1—9 to 27 inches; sandy loam

Bw2—27 to 36 inches; sandy loam

Bw3—36 to 47 inches; sandy loam

Bw4—47 to 58 inches; sandy loam

C1—58 to 62 inches; loamy sand

C2—62 to 72 inches; extremely gravelly loamy sand

Minor Components in Map Unit 212

Fine-loamy soils that are 40 to 60 inches deep to densic bedrock

Composition: 5 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

Coarse-loamy soils that are 40 to 60 inches deep to densic bedrock

Composition: 4 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

Haploxerults, fine-loamy, more than 35 percent clay in the subsoil, and similar soils

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

Chawanakee and similar soils

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

Soils that are underlain by paralithic bedrock

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

213—Featherfalls-Islandbar complex, 50 to 70 percent slopes

Map Unit Setting

General location: Eastern Butte County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 895 to 3,020 feet (274 to 922 meters)

Mean annual precipitation: 50 to 65 inches (1,270 to 1,651 millimeters)

Mean annual air temperature: 54 to 57 degrees F (12 to 14 degrees C)

Frost-free period: 170 to 235 days

Map Unit Composition

Featherfalls sandy loam—45 percent

Islandbar sandy loam—35 percent

Minor components—20 percent

Characteristics of Featherfalls Sandy Loam

Slope: 50 to 70 percent

Geomorphic position: Side slopes on granitic mountains

Parent material: Fine-loamy colluvium and residuum weathered from trondhjemite or quartz diorite

Observed vegetation: Douglas-fir, ponderosa pine, California black oak, incense cedar, Pacific madrone, tanoak, Pacific poison oak, California honeysuckle, and whiteleaf manzanita

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 25 percent subrounded boulders

Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed
Available water capacity: High (about 8.1 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
 A1—1 to 4 inches; sandy loam
 A2—4 to 7 inches; sandy loam
 Bt1—7 to 17 inches; sandy clay loam
 Bt2—17 to 24 inches; sandy clay loam
 Bt3—24 to 32 inches; sandy clay loam
 Bt4—32 to 42 inches; sandy clay loam
 BCt1—42 to 61 inches; paracobbly sandy clay loam
 BCt2—61 to 72 inches; paracobbly sandy clay loam
 Crt—72 to 80 inches; very paragravelly sandy clay loam

Characteristics of Islandbar Sandy Loam

Slope: 50 to 70 percent

Geomorphic position: Side slopes on granitic mountains

Parent material: Coarse-loamy colluvium and residuum weathered from trondhjemite or quartz diorite

Observed vegetation: Ponderosa pine, incense cedar, canyon live oak, tanoak, Douglas-fir, California black oak, Pacific poison oak, whiteleaf manzanita, deerbrush, and toyon

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 10 percent coarse, subrounded gravel

Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 5.7 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material
 A1—2 to 5 inches; sandy loam
 A2—5 to 9 inches; sandy loam
 Bw1—9 to 27 inches; sandy loam
 Bw2—27 to 36 inches; sandy loam

Bw3—36 to 47 inches; sandy loam
 Bw4—47 to 58 inches; sandy loam
 C1—58 to 62 inches; loamy sand
 C2—62 to 72 inches; extremely gravelly loamy sand

Minor Components in Map Unit 213

Chawanakee and similar soils

Composition: 5 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Fine-loamy soils that are 40 to 60 inches deep to densic bedrock

Composition: 5 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Coarse-loamy soils that are 40 to 60 inches deep to densic bedrock

Composition: 5 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Soils that are underlain by paralithic bedrock

Composition: 3 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Haploxerults, fine-loamy, more than 35 percent clay in the subsoil, and similar soils

Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

214—Crystalhill-Oregongulch-Craigsaddle-Rock outcrop complex, 2 to 15 percent slopes

Map Unit Setting

General location: East-central Butte County
Major uses: Wildlife habitat, watershed, homesite development, and recreation
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 895 to 2,595 feet (274 to 792 meters)
Mean annual precipitation: 40 to 55 inches (1,016 to 1,397 millimeters)
Mean annual air temperature: 55 to 61 degrees F (13 to 16 degrees C)
Frost-free period: 230 to 260 days

Map Unit Composition

Crystalhill gravelly coarse sandy loam—35 percent
 Oregongulch gravelly sandy loam—20 percent
 Craigsaddle coarse sandy loam—20 percent

Rock outcrop—10 percent
 Minor components—15 percent

Characteristics of Crystalhill Gravelly Coarse Sandy Loam

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and side slopes on granitic hills

Parent material: Coarse-loamy colluvium and residuum weathered from trondhjemite

Observed vegetation: Live oak, California black oak, whiteleaf manzanita, toyon, buckbrush, foothill pine, Pacific poison oak, deerbrush, Pacific madrone, scrub oak, and scattered ponderosa pine and incense cedar; Douglas-fir in draws

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subangular gravel

Depth to a restrictive feature (densic bedrock): 60 to 80 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 5.0 inches)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): Very low

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: A

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 7 inches; gravelly coarse sandy loam

Bw1—7 to 14 inches; gravelly coarse sandy loam

Bw2—14 to 22 inches; gravelly coarse sandy loam

Bw3—22 to 33 inches; gravelly sandy loam

Bw4—33 to 44 inches; gravelly sandy loam

BC—44 to 66 inches; sandy loam

Cdt—66 inches; bedrock

Characteristics of Oregongulch Gravelly Sandy Loam

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and side slopes on granitic hills

Parent material: Coarse-loamy colluvium and residuum weathered from trondhjemite

Observed vegetation: Live oak, California black oak, whiteleaf manzanita, toyon, buckbrush, foothill pine, Pacific poison oak, deerbrush, Pacific madrone, scrub oak, and scattered ponderosa pine and incense cedar; Douglas-fir in draws

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 40 percent medium, angular gravel

Depth to a restrictive feature (densic bedrock): 20 to 40 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.9 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
 A—1 to 4 inches; gravelly sandy loam
 Bw1—4 to 7 inches; gravelly sandy loam
 Bw2—7 to 13 inches; gravelly sandy loam
 Bw3—13 to 18 inches; gravelly sandy loam
 C—18 to 24 inches; very gravelly sandy loam
 Cdt—24 to 60 inches; bedrock

Characteristics of Craigsaddle Coarse Sandy Loam

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and side slopes on granitic hills

Parent material: Fine-loamy colluvium and residuum weathered from trondhjemite

Observed vegetation: Live oak, California black oak, whiteleaf manzanita, toyon, buckbrush, foothill pine, Pacific poison oak, deerbrush, Pacific madrone, scrub oak, and scattered ponderosa pine and incense cedar; Douglas-fir in draws

Texture of the surface layer: Coarse sandy loam

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subangular gravel

Depth to a restrictive feature (densic bedrock): 40 to 60 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.4 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very low

Interpretive groups

Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

A—0 to 5 inches; coarse sandy loam
 Bw1—5 to 11 inches; sandy loam
 Bw2—11 to 17 inches; sandy loam
 Bw3—17 to 21 inches; sandy loam
 Bt1—21 to 31 inches; sandy loam
 Bt2—31 to 51 inches; sandy loam
 BCt—51 to 58 inches; gravelly sandy loam
 Cdt—58 to 80 inches; bedrock

Characteristics of Rock Outcrop

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and side slopes on granitic hills

Surface runoff (bare conditions): Very high

Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 214

Stony or bouldery soils

Composition: 3 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and side slopes on granitic hills

Hydric soil status: Not hydric

Aquic Haploxerepts, coarse-loamy, and similar soils

Composition: 3 percent

Slope: 2 to 15 percent

Geomorphic position: Drainageways on granitic hills

Hydric soil status: Not hydric

Soils that are 20 to 40 inches deep to paralithic bedrock

Composition: 3 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and side slopes on granitic hills

Hydric soil status: Not hydric

Alluvial soils in riparian areas

Composition: 3 percent

Slope: 2 to 15 percent

Geomorphic position: Drainageways on granitic hills

Hydric soil status: Not hydric

Lamellic Haploxerepts with densic bedrock at a depth of 40 to 60 inches and similar soils

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and side slopes on granitic hills

Hydric soil status: Not hydric

Soils that are more than 60 inches deep to densic bedrock

Composition: 1 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and side slopes on granitic hills

Hydric soil status: Not hydric

215—Crystalhill-Oregongulch-Craigsaddle-Rock outcrop complex, 15 to 30 percent slopes

Map Unit Setting

General location: East-central Butte County

Major uses: Wildlife habitat, watershed, homesite development, and recreation

Major land resource area: 18

Landscape: Northern Sierra Nevada foothills

Elevation: 895 to 2,000 feet (274 to 610 meters)

Mean annual precipitation: 40 to 55 inches (1,016 to 1,397 millimeters)

Mean annual air temperature: 55 to 61 degrees F (13 to 16 degrees C)

Frost-free period: 230 to 260 days

Map Unit Composition

Crystalhill gravelly coarse sandy loam—35 percent

Oregongulch gravelly sandy loam—20 percent

Craigsaddle coarse sandy loam—20 percent

Rock outcrop—10 percent

Minor components—15 percent

Characteristics of Crystalhill Gravelly Coarse Sandy Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes on granitic hills

Parent material: Coarse-loamy colluvium and residuum weathered from trondhjemite

Observed vegetation: Live oak, California black oak, whiteleaf manzanita, toyon, buckbrush, foothill pine, Pacific poison oak, deerbrush, Pacific madrone, scrub oak, and scattered ponderosa pine and incense cedar; Douglas-fir in draws

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subangular gravel

Depth to a restrictive feature (densic bedrock): 60 to 80 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 5.0 inches)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: A

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 7 inches; gravelly coarse sandy loam

Bw1—7 to 14 inches; gravelly coarse sandy loam

Bw2—14 to 22 inches; gravelly coarse sandy loam

Bw3—22 to 33 inches; gravelly sandy loam

Bw4—33 to 44 inches; gravelly sandy loam

BC—44 to 66 inches; sandy loam

Cdt—66 inches; bedrock

Characteristics of Oregongulch Gravelly Sandy Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes on granitic hills

Parent material: Coarse-loamy colluvium and residuum weathered from trondhjemite

Observed vegetation: Live oak, California black oak, whiteleaf manzanita, toyon, buckbrush, foothill pine, Pacific poison oak, deerbrush, Pacific madrone, scrub oak, and scattered ponderosa pine and incense cedar; Douglas-fir in draws

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 40 percent medium, angular gravel

Depth to a restrictive feature (densic bedrock): 20 to 40 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.9 inches)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 4 inches; gravelly sandy loam

Bw1—4 to 7 inches; gravelly sandy loam

Bw2—7 to 13 inches; gravelly sandy loam

Bw3—13 to 18 inches; gravelly sandy loam

C—18 to 24 inches; very gravelly sandy loam

Cdt—24 to 60 inches; bedrock

Characteristics of Craigsaddle Coarse Sandy Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes on granitic hills

Parent material: Fine-loamy colluvium and residuum weathered from trondhjemite

Observed vegetation: Live oak, California black oak, whiteleaf manzanita, toyon, buckbrush, foothill pine, Pacific poison oak, deerbrush, Pacific madrone, scrub oak, and scattered ponderosa pine and incense cedar; Douglas-fir in draws

Texture of the surface layer: Coarse sandy loam

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subangular gravel

Depth to a restrictive feature (densic bedrock): 40 to 60 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.4 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 5 inches; coarse sandy loam

Bw1—5 to 11 inches; sandy loam
 Bw2—11 to 17 inches; sandy loam
 Bw3—17 to 21 inches; sandy loam
 Bt1—21 to 31 inches; sandy loam
 Bt2—31 to 51 inches; sandy loam
 BCt—51 to 58 inches; gravelly sandy loam
 Cdt—58 to 80 inches; bedrock

Characteristics of Rock Outcrop

Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic hills
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 215

Haploxeralfs, fine, and similar soils

Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic hills
Hydric soil status: Not hydric

Lamellic Haploxerepts, coarse-loamy, more than 60 inches deep to densic bedrock, and similar soils

Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic hills
Hydric soil status: Not hydric

Coarse-loamy soils that are 10 to 20 inches deep to bedrock

Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic hills
Hydric soil status: Not hydric

Fine-loamy soils that are 20 to 40 inches deep to densic bedrock

Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic hills
Hydric soil status: Not hydric

216—Crystalhill-Oregongulch-Craigsaddle-Rock outcrop complex, 30 to 50 percent slopes

Map Unit Setting

General location: East-central Butte County
Major uses: Wildlife habitat, watershed, and recreation
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 895 to 2,000 feet (274 to 610 meters)
Mean annual precipitation: 40 to 55 inches (1,016 to 1,397 millimeters)
Mean annual air temperature: 55 to 61 degrees F (13 to 16 degrees C)
Frost-free period: 230 to 260 days

Map Unit Composition

Crystalhill gravelly coarse sandy loam—35 percent
 Oregongulch gravelly sandy loam—20 percent
 Craigsaddle coarse sandy loam—20 percent
 Rock outcrop—10 percent
 Minor components—15 percent

Characteristics of Crystalhill Gravelly Coarse Sandy Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes on granitic hills

Parent material: Coarse-loamy colluvium and residuum weathered from trondhjemite

Observed vegetation: Live oak, California black oak, whiteleaf manzanita, toyon, buckbrush, foothill pine, Pacific poison oak, deerbrush, Pacific madrone, scrub oak, and scattered ponderosa pine and incense cedar; Douglas-fir in draws

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subangular gravel

Depth to a restrictive feature (densic bedrock): 60 to 80 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 5.0 inches)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: A

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 7 inches; gravelly coarse sandy loam

Bw1—7 to 14 inches; gravelly coarse sandy loam

Bw2—14 to 22 inches; gravelly coarse sandy loam

Bw3—22 to 33 inches; gravelly sandy loam

Bw4—33 to 44 inches; gravelly sandy loam

BC—44 to 66 inches; sandy loam

Cdt—66 inches; bedrock

Characteristics of Oregongulch Gravelly Sandy Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes on granitic hills

Parent material: Coarse-loamy colluvium and residuum weathered from trondhjemite

Observed vegetation: Live oak, California black oak, whiteleaf manzanita, toyon, buckbrush, foothill pine, Pacific poison oak, deerbrush, Pacific madrone, scrub oak, and scattered ponderosa pine and incense cedar; Douglas-fir in draws

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 40 percent medium, angular gravel

Depth to a restrictive feature (densic bedrock): 20 to 40 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.9 inches)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 4 inches; gravelly sandy loam

Bw1—4 to 7 inches; gravelly sandy loam

Bw2—7 to 13 inches; gravelly sandy loam

Bw3—13 to 18 inches; gravelly sandy loam

C—18 to 24 inches; very gravelly sandy loam

Cdt—24 to 60 inches; bedrock

Characteristics of Craigsaddle Coarse Sandy Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes on granitic hills

Parent material: Fine-loamy colluvium and residuum weathered from trondhjemite

Observed vegetation: Live oak, California black oak, whiteleaf manzanita, toyon, buckbrush, foothill pine, Pacific poison oak, deerbrush, Pacific madrone, scrub oak, and scattered ponderosa pine and incense cedar; Douglas-fir in draws

Texture of the surface layer: Coarse sandy loam

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subangular gravel

Depth to a restrictive feature (densic bedrock): 40 to 60 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.4 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 5 inches; coarse sandy loam

Bw1—5 to 11 inches; sandy loam

Bw2—11 to 17 inches; sandy loam

Bw3—17 to 21 inches; sandy loam
 Bt1—21 to 31 inches; sandy loam
 Bt2—31 to 51 inches; sandy loam
 BCt—51 to 58 inches; gravelly sandy loam
 Cdt—58 to 80 inches; bedrock

Characteristics of Rock Outcrop

Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic hills
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 216

Haploxeralfs, fine, and similar soils

Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic hills
Hydric soil status: Not hydric

Lamellic Haploxerepts, coarse-loamy, more than 60 inches deep to densic bedrock, and similar soils

Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic hills
Hydric soil status: Not hydric

Coarse-loamy soils that are more than 60 inches deep to bedrock

Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic hills
Hydric soil status: Not hydric

Coarse-loamy soils that are 20 to 40 inches deep to bedrock

Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic hills
Hydric soil status: Not hydric

217—Crystalhill-Oregongulch-Craigsaddle-Rock outcrop complex, 50 to 70 percent slopes

Map Unit Setting

General location: East-central Butte County
Major uses: Wildlife habitat, watershed, and recreation
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 1,200 to 2,000 feet (366 to 610 meters)
Mean annual precipitation: 40 to 55 inches (1,016 to 1,397 millimeters)
Mean annual air temperature: 55 to 61 degrees F (13 to 16 degrees C)
Frost-free period: 230 to 260 days

Map Unit Composition

Crystalhill gravelly coarse sandy loam—35 percent
 Oregongulch gravelly sandy loam—20 percent

Craigsaddle coarse sandy loam—20 percent
 Rock outcrop—10 percent
 Minor components—15 percent

Characteristics of Crystalhill Gravelly Coarse Sandy Loam

Slope: 50 to 70 percent

Geomorphic position: Side slopes on granitic hills

Parent material: Coarse-loamy colluvium derived from trondhjemite

Observed vegetation: Live oak, California black oak, whiteleaf manzanita, toyon, buckbrush, foothill pine, Pacific poison oak, deerbrush, Pacific madrone, scrub oak, and scattered ponderosa pine and incense cedar; Douglas-fir in draws

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subangular gravel

Depth to a restrictive feature (densic bedrock): 60 to 80 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 5.0 inches)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: A

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 7 inches; gravelly coarse sandy loam

Bw1—7 to 14 inches; gravelly coarse sandy loam

Bw2—14 to 22 inches; gravelly coarse sandy loam

Bw3—22 to 33 inches; gravelly sandy loam

Bw4—33 to 44 inches; gravelly sandy loam

BC—44 to 66 inches; sandy loam

Cdt—66 inches; bedrock

Characteristics of Oregongulch Gravelly Sandy Loam

Slope: 50 to 70 percent

Geomorphic position: Side slopes on granitic hills

Parent material: Coarse-loamy colluvium derived from trondhjemite

Observed vegetation: Live oak, California black oak, whiteleaf manzanita, toyon, buckbrush, foothill pine, Pacific poison oak, deerbrush, Pacific madrone, scrub oak, and scattered ponderosa pine and incense cedar; Douglas-fir in draws

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 40 percent medium, angular gravel

Depth to a restrictive feature (densic bedrock): 20 to 40 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.9 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
 A—1 to 4 inches; gravelly sandy loam
 Bw1—4 to 7 inches; gravelly sandy loam
 Bw2—7 to 13 inches; gravelly sandy loam
 Bw3—13 to 18 inches; gravelly sandy loam
 C—18 to 24 inches; very gravelly sandy loam
 Cdt—24 to 60 inches; bedrock

Characteristics of Craigsaddle Coarse Sandy Loam

Slope: 50 to 70 percent
Geomorphic position: Side slopes on granitic hills
Parent material: Fine-loamy colluvium derived from trondhjemite
Observed vegetation: Live oak, California black oak, whiteleaf manzanita, toyon, buckbrush, foothill pine, Pacific poison oak, deerbrush, Pacific madrone, scrub oak, and scattered ponderosa pine and incense cedar; Douglas-fir in draws
Texture of the surface layer: Coarse sandy loam
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subangular gravel
Depth to a restrictive feature (densic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)
Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.4 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

A—0 to 5 inches; coarse sandy loam
 Bw1—5 to 11 inches; sandy loam
 Bw2—11 to 17 inches; sandy loam
 Bw3—17 to 21 inches; sandy loam
 Bt1—21 to 31 inches; sandy loam
 Bt2—31 to 51 inches; sandy loam
 BCt—51 to 58 inches; gravelly sandy loam
 Cdt—58 to 80 inches; bedrock

Characteristics of Rock Outcrop

Slope: 50 to 70 percent

Geomorphic position: Side slopes on granitic hills

Surface runoff (bare conditions): Very high

Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 217

Haploxeralfs, fine, and similar soils

Composition: 5 percent

Slope: 50 to 70 percent

Geomorphic position: Side slopes on granitic hills

Hydric soil status: Not hydric

Lamellic Haploxerepts, coarse-loamy, more than 60 inches deep to densic bedrock, and similar soils

Composition: 3 percent

Slope: 50 to 70 percent

Geomorphic position: Side slopes on granitic hills

Hydric soil status: Not hydric

Coarse-loamy soils that are less than 20 inches deep to densic bedrock

Composition: 3 percent

Slope: 50 to 70 percent

Geomorphic position: Side slopes on granitic hills

Hydric soil status: Not hydric

Coarse-loamy soils that are 20 to 40 inches deep to bedrock

Composition: 2 percent

Slope: 50 to 70 percent

Geomorphic position: Side slopes on granitic hills

Hydric soil status: Not hydric

Coarse-loamy soils that are more than 60 inches deep to bedrock

Composition: 2 percent

Slope: 50 to 70 percent

Geomorphic position: Side slopes on granitic hills

Hydric soil status: Not hydric

218—Rock outcrop-Lithic Xerorthents-Chawanakee complex, 12 to 50 percent slopes

Map Unit Setting

General location: East-central Butte County

Major uses: Wildlife habitat, watershed, and limited timber production

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 2,115 to 2,915 feet (646 to 890 meters)

Mean annual precipitation: 50 to 60 inches (1,270 to 1,524 millimeters)

Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)

Frost-free period: 200 to 240 days

Map Unit Composition

Rock outcrop (quartz diorite)—60 percent

Lithic Xerorthents gravelly sandy loam, mesic—20 percent

Chawanakee gravelly sandy loam—15 percent
 Minor components—5 percent

Characteristics of Rock Outcrop (Quartz Diorite)

Slope: 12 to 50 percent

Geomorphic position: Ridgetops and side slopes on granitic mountains

Surface runoff (bare conditions): Very high

Definition: Rock outcrop consists of exposures of bedrock with no soil.

Characteristics of Lithic Xerorthents Gravelly Sandy Loam, Mesic

Slope: 12 to 50 percent

Geomorphic position: Ridgetops and side slopes on granitic mountains

Parent material: Coarse-loamy colluvium and residuum weathered from intrusive igneous rocks

Observed vegetation: Canyon live oak, whiteleaf manzanita, California black oak, and scattered conifers

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 15 to 50 percent coarse, subrounded gravel, 0 to 30 percent subrounded cobbles, 0 to 50 percent subrounded stones, 0 to 50 percent subrounded boulders

Depth to a restrictive feature (lithic bedrock): 5 to 10 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 0.6 inch)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 4 inches; gravelly sandy loam

Bw—4 to 8 inches; sandy loam

R—8 inches; bedrock

Characteristics of Chawanakee Gravelly Sandy Loam

Slope: 12 to 50 percent

Geomorphic position: Ridgetops and side slopes on granitic mountains

Parent material: Coarse-loamy colluvium and residuum weathered from intrusive igneous rocks

Observed vegetation: Ponderosa pine, whiteleaf manzanita, canyon live oak, incense cedar, sugar pine, California black oak, Douglas-fir, deerbrush, and California buckthorn

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent subrounded gravel, 0 to 5 percent subrounded boulders

Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.4 inches)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

Oe—1 to 2 inches; moderately decomposed plant material

A—2 to 5 inches; gravelly sandy loam

Bw1—5 to 11 inches; gravelly sandy loam

Bw2—11 to 19 inches; gravelly sandy loam

Cr—19 inches; bedrock

Minor Components in Map Unit 218

Loamy-skeletal soils that are 20 to 40 inches deep to bedrock

Composition: 5 percent

Slope: 12 to 50 percent

Geomorphic position: Ridgetops and side slopes on granitic mountains

Hydric soil status: Not hydric

219—Rock outcrop-Lithic Xerorthents-Chawanakee complex, 50 to 70 percent slopes

Map Unit Setting

General location: East-central Butte County

Major uses: Wildlife habitat, watershed, and limited timber production

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 2,555 to 4,395 feet (780 to 1,341 meters)

Mean annual precipitation: 50 to 80 inches (1,270 to 2,032 millimeters)

Mean annual air temperature: 50 to 57 degrees F (10 to 14 degrees C)

Frost-free period: 110 to 240 days

Map Unit Composition

Rock outcrop (quartz diorite)—60 percent

Lithic Xerorthents gravelly sandy loam, mesic—20 percent

Chawanakee gravelly sandy loam—15 percent

Minor components—5 percent

Characteristics of Rock Outcrop (Quartz Diorite)

Slope: 50 to 70 percent

Geomorphic position: Side slopes on granitic mountains

Surface runoff (bare conditions): Very high

Definition: Rock outcrop consists of exposures of bedrock with no soil.

Characteristics of Lithic Xerorthents Gravelly Sandy Loam, Mesic

Slope: 50 to 70 percent

Geomorphic position: Side slopes on granitic mountains

Parent material: Coarse-loamy colluvium derived from intrusive igneous rocks

Observed vegetation: Canyon live oak, whiteleaf manzanita, California black oak, and scattered conifers

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 15 to 50 percent coarse, subrounded gravel, 0 to 30 percent subrounded cobbles, 0 to 50 percent subrounded stones, 0 to 50 percent subrounded boulders

Depth to a restrictive feature (lithic bedrock): 5 to 10 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 0.6 inch)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 4 inches; gravelly sandy loam

Bw—4 to 8 inches; sandy loam

R—8 inches; bedrock

Characteristics of Chawanakee Gravelly Sandy Loam

Slope: 50 to 70 percent

Geomorphic position: Side slopes on granitic mountains

Parent material: Coarse-loamy colluvium derived from intrusive igneous rocks

Observed vegetation: Ponderosa pine, whiteleaf manzanita, canyon live oak, incense cedar, sugar pine, California black oak, Douglas-fir, deerbrush, and California buckthorn

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent subrounded gravel, 0 to 5 percent subrounded boulders

Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.4 inches)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

Oe—1 to 2 inches; moderately decomposed plant material

A—2 to 5 inches; gravelly sandy loam

Bw1—5 to 11 inches; gravelly sandy loam

Bw2—11 to 19 inches; gravelly sandy loam

Cr—19 inches; bedrock

Minor Components in Map Unit 219

Loamy-skeletal soils that are 20 to 40 inches deep to bedrock

Composition: 5 percent

Slope: 50 to 70 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

220—Esquon-Clear Lake complex, 0 to 1 percent slopes, frequently flooded

Map Unit Setting

General location: Southwestern Butte County

Major uses: Wildlife habitat

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 55 to 70 feet (18 to 22 meters)

Mean annual precipitation: 18 inches (457 millimeters)

Mean annual air temperature: 59 to 61 degrees F (15 to 16 degrees C)

Frost-free period: 240 days

Map Unit Composition

Esquon clay, frequently flooded—60 percent

Clear Lake silty clay loam, overwash—30 percent

Minor components—10 percent

Characteristics of Esquon Clay, Frequently Flooded

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Parent material: Clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Tules, swamp timothy, smartweed, sourdock, spike rush, bulrush, arnica ssp., bermudagrass, and cattails

Surface features: The surface has been leveled for agriculture. Surface polygonal cracking occurs during dry periods.

Texture of the surface layer: Clay

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (duripan): 40 to 60 inches

Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural

depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: Frequent

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 60 inches

Available water capacity: High (about 7.7 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Storie index: 24 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

A—0 to 10 inches; clay

Bkss1—10 to 22 inches; clay

Bkss2—22 to 40 inches; clay

Bk—40 to 50 inches; clay loam

2Bkqm—50 inches; duripan

Characteristics of Clear Lake Silty Clay Loam, Overwash

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Parent material: Flood-deposited, silty alluvium over silty and clayey alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Tules, swamp timothy, smartweed, sourdock, spike rush, bulrush, arnica ssp., bermudagrass, and cattails

Surface feature: The surface layer of silty clay loam is flood-deposited overwash.

Texture of the surface layer: Silty clay loam

Percentage of the surface covered by rock fragments: None

Restrictive feature: None identified

Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: Frequent

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 80 inches

Available water capacity: High (about 9.6 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Storie index: 31 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

A—0 to 0.5 inch; silty clay loam
 Ab—0.5 inch to 7 inches; clay
 Bgb1—7 to 19 inches; clay
 Bgb2—19 to 29 inches; clay
 Bkssb1—29 to 40 inches; clay
 Bkssb2—40 to 55 inches; clay
 Bkssb3—55 to 80 inches; clay

Minor Components in Map Unit 220**Clear Lake clay and similar soils***Composition:* 5 percent*Slope:* 0 to 1 percent*Geomorphic position:* Flood basins*Hydric soil status:* Hydric**Esquon soils with a duripan at a depth of more than 60 inches and similar soils***Composition:* 3 percent*Slope:* 0 to 1 percent*Geomorphic position:* Flood basins*Hydric soil status:* Hydric**Soils that are continuously saturated***Composition:* 2 percent*Slope:* 0 to 1 percent*Geomorphic position:* Channels on flood basins*Hydric soil status:* Hydric**221yu—Sites loam, 3 to 8 percent slopes*****Map Unit Setting****General location:* Yuba County and southeastern Butte County*Major uses:* Timber production, livestock grazing, and homesite development*Major land resource area:* 22A*Landscape:* Northern Sierra Nevada Mountains*Elevation:* 1,995 to 4,195 feet (609 to 1,280 meters)*Mean annual precipitation:* 50 to 80 inches (1,270 to 2,032 millimeters)*Mean annual air temperature:* 50 to 57 degrees F (10 to 14 degrees C)*Frost-free period:* 130 to 190 days***Map Unit Composition***

Sites loam—85 percent

Minor components—15 percent

Characteristics of Sites Loam*Slope:* 3 to 8 percent*Geomorphic position:* Metamorphic mountains*Parent material:* Clayey residuum weathered from metamorphic rocks*Observed vegetation:* Mixed conifers, hardwoods, brush, grasses, and forbs*Texture of the surface layer:* Loam*Percentage of the surface covered by rock fragments:* None*Depth to a restrictive feature (paralithic bedrock):* 60 to 80 inches*Shrink-swell potential:* Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 9.3 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 2e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A—0 to 6 inches; loam

Bt1—6 to 16 inches; clay loam

Bt2 to Bt4—16 to 51 inches; clay

Bt5—51 to 61 inches; clay loam

Cr—61 inches; bedrock

Minor Components in Map Unit 221yu

Mariposa and similar soils

Composition: 5 percent

Slope: 3 to 8 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

Sites gravelly loam and similar soils

Composition: 5 percent

Slope: 3 to 8 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

Rogerville silt loam and similar soils

Composition: 3 percent

Slope: 3 to 8 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

Soils that are wet

Composition: 2 percent

Slope: 3 to 8 percent

Geomorphic position: Mountains

Hydric soil status: Hydric

222yu—Sites loam, 8 to 15 percent slopes

Map Unit Setting

General location: Yuba County and southeastern Butte County

Major uses: Timber production, livestock grazing, and homesite development

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 1,995 to 4,195 feet (609 to 1,280 meters)

Mean annual precipitation: 50 to 85 inches (1,270 to 2,159 millimeters)

Mean annual air temperature: 50 to 57 degrees F (10 to 14 degrees C)

Frost-free period: 130 to 190 days

Map Unit Composition

Sites loam—85 percent

Minor components—15 percent

Characteristics of Sites Loam

Slope: 8 to 15 percent

Geomorphic position: Metamorphic mountains

Parent material: Clayey residuum weathered from metamorphic rocks

Observed vegetation: Mixed conifers, hardwoods, brush, grasses, and forbs

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (paralithic bedrock): 60 to 80 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 9.3 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A—0 to 6 inches; loam

Bt1—6 to 16 inches; clay loam

Bt2 to Bt4—16 to 51 inches; clay

Bt5—51 to 61 inches; clay loam

Cr—61 inches; bedrock

Minor Components in Map Unit 222yu

Mariposa and similar soils

Composition: 5 percent

Slope: 8 to 15 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

Sites gravelly loam, bedrock substratum, and similar soils

Composition: 3 percent

Slope: 8 to 15 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

Soils that are wet

Composition: 3 percent

Slope: 8 to 15 percent

Geomorphic position: Mountains

Hydric soil status: Hydric

Powellton and similar soils*Composition:* 2 percent*Slope:* 8 to 15 percent*Geomorphic position:* Mountains*Hydric soil status:* Not hydric**Toadtown and similar soils***Composition:* 2 percent*Slope:* 8 to 15 percent*Geomorphic position:* Mountains*Hydric soil status:* Not hydric**225yu—Sites gravelly loam, bedrock substratum, 3 to 8 percent slopes*****Map Unit Setting****General location:* Yuba County and southeastern Butte County*Major uses:* Timber production, livestock grazing, and homesite development*Major land resource area:* 22A*Landscape:* Northern Sierra Nevada Mountains*Elevation:* 2,000 to 4,195 feet (610 to 1,280 meters)*Mean annual precipitation:* 50 to 80 inches (1,270 to 2,032 millimeters)*Mean annual air temperature:* 50 to 57 degrees F (10 to 14 degrees C)*Frost-free period:* 130 to 190 days***Map Unit Composition***

Sites gravelly loam, bedrock substratum—80 percent

Minor components—20 percent

Characteristics of Sites Gravelly Loam, Bedrock Substratum*Slope:* 3 to 8 percent*Geomorphic position:* Metamorphic mountains*Parent material:* Clayey residuum weathered from metamorphic rocks*Observed vegetation:* Mixed conifers, hardwoods, brush, grasses, and forbs*Texture of the surface layer:* Gravelly loam*Percentage of the surface covered by rock fragments:* None*Depth to a restrictive feature (paralithic bedrock):* 40 to 60 inches*Shrink-swell potential:* Moderate (LEP of 3 to less than 6)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* None*Annual ponding frequency:* None*Water table (zone of saturation):* None observed*Available water capacity:* Very high (about 15.1 inches)*Natural drainage class:* Well drained*Surface runoff (bare conditions):* Medium***Interpretive groups****Land capability, irrigated:* 2e-1*Land capability, nonirrigated:* 3e-1*Hydric soil status:* Not hydric*Hydrologic soil group:* C***Typical profile***

A—0 to 5 inches; gravelly loam

Bt1 to Bt5—5 to 53 inches; gravelly clay loam and gravelly clay
Cr—53 inches; bedrock

Minor Components in Map Unit 225yu

Mariposa and similar soils

Composition: 5 percent

Slope: 3 to 8 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

Powellton and similar soils

Composition: 5 percent

Slope: 3 to 8 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

Very deep Sites and similar soils

Composition: 5 percent

Slope: 3 to 8 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

Toadtown and similar soils

Composition: 5 percent

Slope: 3 to 8 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

226yu—Sites gravelly loam, bedrock substratum, 8 to 15 percent slopes

Map Unit Setting

General location: Yuba County and southeastern Butte County

Major uses: Timber production and homesite development

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 2,000 to 4,195 feet (610 to 1,280 meters)

Mean annual precipitation: 50 to 80 inches (1,270 to 2,032 millimeters)

Mean annual air temperature: 50 to 57 degrees F (10 to 14 degrees C)

Frost-free period: 130 to 190 days

Map Unit Composition

Sites gravelly loam, bedrock substratum—80 percent

Minor components—20 percent

Characteristics of Sites Gravelly Loam, Bedrock Substratum

Slope: 8 to 15 percent

Geomorphic position: Metamorphic mountains

Parent material: Clayey residuum weathered from metamorphic rocks

Observed vegetation: Mixed conifers, hardwoods, brush, grasses, and forbs

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very high (about 15.1 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A—0 to 5 inches; gravelly loam

Bt1 to Bt5—5 to 53 inches; gravelly clay and gravelly clay loam

Cr—53 inches; bedrock

Minor Components in Map Unit 226yu

Mariposa and similar soils

Composition: 4 percent

Slope: 8 to 15 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

Woodleaf and similar soils

Composition: 4 percent

Slope: 8 to 15 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

Powellton and similar soils

Composition: 4 percent

Slope: 8 to 15 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

Very deep Sites and similar soils

Composition: 4 percent

Slope: 15 to 30 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

Toadtown and similar soils

Composition: 4 percent

Slope: 8 to 15 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

227yu—Sites gravelly loam, bedrock substratum, 15 to 30 percent slopes

Map Unit Setting

General location: Yuba County and southeastern Butte County

Major uses: Timber production and homesite development

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 2,000 to 4,195 feet (610 to 1,280 meters)

Mean annual precipitation: 50 to 80 inches (1,270 to 2,032 millimeters)

Mean annual air temperature: 50 to 57 degrees F (10 to 14 degrees C)

Frost-free period: 130 to 190 days

Map Unit Composition

Sites gravelly loam, bedrock substratum—80 percent

Minor components—20 percent

Characteristics of Sites Gravelly Loam, Bedrock Substratum

Slope: 15 to 30 percent

Geomorphic position: Metamorphic mountains

Parent material: Clayey residuum weathered from metamorphic rocks

Observed vegetation: Mixed conifers, hardwoods, brush, grasses, and forbs

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very high (about 15.1 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A—0 to 5 inches; gravelly loam

Bt1 to Bt5—5 to 53 inches; gravelly clay and gravelly clay loam

Cr—53 inches; bedrock

Minor Components in Map Unit 227yu

Mariposa and similar soils

Composition: 4 percent

Slope: 15 to 30 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

Woodleaf and similar soils

Composition: 4 percent

Slope: 15 to 30 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

Powellton and similar soils

Composition: 4 percent

Slope: 15 to 30 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

Very deep Sites and similar soils

Composition: 4 percent

Slope: 15 to 30 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

Toadtown and similar soils

Composition: 4 percent

Slope: 15 to 30 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

242yu—Surnuf gravelly loam, 8 to 15 percent slopes

Map Unit Setting

General location: Yuba County and southeastern Butte County

Major uses: Timber production, livestock grazing, and homesite development

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 1,400 to 3,320 feet (427 to 1,012 meters)

Mean annual precipitation: 35 to 66 inches (889 to 1,676 millimeters)

Mean annual air temperature: 54 to 59 degrees F (12 to 15 degrees C)

Frost-free period: 170 to 240 days

Map Unit Composition

Surnuf loam—80 percent

Minor components—20 percent

Characteristics of Surnuf Loam

Slope: 8 to 15 percent

Geomorphic position: Metamorphic mountains

Parent material: Clayey colluvium and residuum weathered from gabbrodiorite

Observed vegetation: Ponderosa pine, incense cedar, California black oak, and brush

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (abrupt textural change): 12 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 2.0 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A and BA_t—0 to 12 inches; loam
 B_t1 to BC_t—12 to 77 inches; clay loam and clay

Minor Components in Map Unit 242yu**Mildred and similar soils**

Composition: 4 percent
Slope: 8 to 15 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Sites and similar soils

Composition: 4 percent
Slope: 8 to 15 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Mounthope and similar soils

Composition: 4 percent
Slope: 8 to 15 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Sommeyflat and similar soils

Composition: 4 percent
Slope: 8 to 15 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Clayey soils that are 40 to 60 inches deep to bedrock

Composition: 4 percent
Slope: 8 to 15 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

243yu—Surnuf gravelly loam, 15 to 30 percent slopes**Map Unit Setting**

General location: Yuba County and southeastern Butte County
Major uses: Timber production, livestock grazing, and homesite development
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 1,400 to 3,320 feet (427 to 1,012 meters)
Mean annual precipitation: 35 to 66 inches (889 to 1,676 millimeters)
Mean annual air temperature: 54 to 59 degrees F (12 to 15 degrees C)
Frost-free period: 170 to 240 days

Map Unit Composition

Surnuf loam—80 percent
 Minor components—20 percent

Characteristics of Surnuf Loam

Slope: 15 to 30 percent
Geomorphic position: Metamorphic mountains
Parent material: Clayey colluvium and residuum weathered from gabbrodiorite

Observed vegetation: Ponderosa pine, incense cedar, California black oak, and brush

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (abrupt textural change): 12 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 2.0 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A and BA_t—0 to 12 inches; loam

B_t1 to BC_t—12 to 77 inches; clay and clay loam

Minor Components in Map Unit 243yu

Mildred and similar soils

Composition: 4 percent

Slope: 15 to 30 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

Sites and similar soils

Composition: 4 percent

Slope: 15 to 30 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

Mounthope and similar soils

Composition: 4 percent

Slope: 15 to 30 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

Sommeyflat and similar soils

Composition: 4 percent

Slope: 15 to 30 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

Clayey soils that are 40 to 60 inches deep to bedrock

Composition: 4 percent

Slope: 15 to 30 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

244yu—Surnuf gravelly loam, 30 to 50 percent slopes

Map Unit Setting

General location: Yuba County and southeastern Butte County

Major uses: Timber production and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 1,400 to 3,320 feet (427 to 1,012 meters)

Mean annual precipitation: 35 to 66 inches (889 to 1,676 millimeters)

Mean annual air temperature: 54 to 59 degrees F (12 to 15 degrees C)

Frost-free period: 170 to 240 days

Map Unit Composition

Surnuf loam—80 percent

Minor components—20 percent

Characteristics of Surnuf Loam

Slope: 30 to 50 percent

Geomorphic position: Metamorphic mountains

Parent material: Clayey colluvium and residuum weathered from gabbrodiorite

Observed vegetation: Ponderosa pine, incense cedar, California black oak, and brush

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (abrupt textural change): 12 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 2.0 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A and BA_t—0 to 12 inches; loam

B_t1 to BC_t—12 to 77 inches; clay loam and clay

Minor Components in Map Unit 244yu

Mildred and similar soils

Composition: 4 percent

Slope: 30 to 50 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

Sites and similar soils

Composition: 4 percent

Slope: 30 to 50 percent

Geomorphic position: Mountains

Hydric soil status: Not hydric

Mounthope and similar soils*Composition:* 4 percent*Slope:* 30 to 50 percent*Geomorphic position:* Mountains*Hydric soil status:* Not hydric**Sommeyflat and similar soils***Composition:* 4 percent*Slope:* 30 to 50 percent*Geomorphic position:* Mountains*Hydric soil status:* Not hydric**Clayey soils that are 40 to 60 inches deep to bedrock***Composition:* 4 percent*Slope:* 30 to 50 percent*Geomorphic position:* Mountains*Hydric soil status:* Not hydric**245—Surnuf gravelly loam, 50 to 70 percent slopes*****Map Unit Setting****General location:* Southeastern Butte County*Major uses:* Timber production, wildlife habitat, and watershed*Major land resource area:* 22A*Landscape:* Northern Sierra Nevada Mountains*Elevation:* 1,245 to 2,795 feet (381 to 853 meters)*Mean annual precipitation:* 60 to 65 inches (1,524 to 1,651 millimeters)*Mean annual air temperature:* 55 degrees F (13 degrees C)*Frost-free period:* 190 days***Map Unit Composition***

Surnuf loam—80 percent

Minor components—20 percent

Characteristics of Surnuf Loam*Slope:* 50 to 70 percent*Geomorphic position:* Side slopes in canyons on metamorphic mountains*Parent material:* Clayey colluvium derived from gabbrodiorite*Observed vegetation:* Ponderosa pine, incense cedar, California black oak, Douglas-fir, whiteleaf manzanita, Pacific madrone, and Pacific poison oak*Texture of the surface layer:* Loam*Percentage of the surface covered by rock fragments:* None*Depth to a restrictive feature (abrupt textural change):* 12 inches*Shrink-swell potential:* Low (LEP of less than 3)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* None*Annual ponding frequency:* None*Water table (zone of saturation):* None observed*Available water capacity:* Very low (about 2.0 inches)*Natural drainage class:* Well drained*Surface runoff (bare conditions):* High*Interpretive groups**Land capability, irrigated:* 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A and BA_t—0 to 12 inches; loam

B_t1 to BC_t—12 to 77 inches; clay and clay loam

Minor Components in Map Unit 245

Sites and similar soils

Composition: 5 percent

Slope: 50 to 70 percent

Geomorphic position: Side slopes in canyons on metamorphic mountains

Hydric soil status: Not hydric

Griffgulch and similar soils

Composition: 5 percent

Slope: 50 to 70 percent

Geomorphic position: Side slopes in canyons on metamorphic mountains

Hydric soil status: Not hydric

Mounthope and similar soils

Composition: 5 percent

Slope: 50 to 70 percent

Geomorphic position: Side slopes in canyons on metamorphic mountains

Hydric soil status: Not hydric

Soils that are 20 to 40 inches deep to bedrock

Composition: 5 percent

Slope: 50 to 70 percent

Geomorphic position: Side slopes in canyons on metamorphic mountains

Hydric soil status: Not hydric

248yu—Trainer loam, 0 to 1 percent slopes, occasionally flooded

Map Unit Setting

General location: Yuba County and southeastern Butte County

Major uses: Cropland and wildlife habitat

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 25 to 110 feet (9 to 35 meters)

Mean annual precipitation: 18 to 22 inches (457 to 559 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 250 to 290 days

Map Unit Composition

Trainer loam—85 percent

Minor components—15 percent

Characteristics of Trainer Loam

Slope: 0 to 2 percent

Geomorphic position: Stream terraces

Parent material: Mixed fine-loamy alluvium

Observed vegetation: Rice, grasses, forbs, scattered valley oak, cottonwood, and shrubs

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: None

Restrictive feature: None identified

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Occasional

Annual ponding frequency: None

Depth to a water table (zone of saturation): 36 to 60 inches

Available water capacity: Very high (about 10.2 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 2w-2

Land capability, nonirrigated: 3w-2

Storie index: 48.0 (historical number)

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Ap—0 to 4 inches; loam

A—4 to 9 inches; loam

Bt1—9 to 16 inches; loam

Bt2—16 to 23 inches; loam

Bt3—23 to 36 inches; sandy loam

BCt—36 to 48 inches; sandy loam

C1—48 to 59 inches; sandy loam

C2—59 to 66 inches; coarse sandy loam

Minor Components in Map Unit 248yu

Columbia and similar soils

Composition: 4 percent

Slope: 0 to 1 percent

Geomorphic position: Flood plains

Hydric soil status: Hydric

Kimball and similar soils

Composition: 3 percent

Slope: 0 to 1 percent

Geomorphic position: Terraces

Hydric soil status: Not hydric

San Joaquin and similar soils

Composition: 3 percent

Slope: 0 to 1 percent

Geomorphic position: Terraces

Hydric soil status: Not hydric

Soils that have a water table within a depth of 20 inches

Composition: 3 percent

Slope: 0 to 1 percent

Geomorphic position: Channels

Hydric soil status: Hydric

Wilsoncreek and similar soils*Composition:* 2 percent*Slope:* 0 to 1 percent*Geomorphic position:* Stream terraces*Hydric soil status:* Not hydric**250—Llanoseco silty clay loam, 0 to 2 percent slopes, occasionally flooded*****Map Unit Setting****General location:* Western Butte County*Major uses:* Nonirrigated crops and wildlife habitat*Major land resource area:* 17*Landscape:* Sacramento Valley*Elevation:* 95 to 105 feet (30 to 33 meters)*Mean annual precipitation:* 18 to 19 inches (457 to 483 millimeters)*Mean annual air temperature:* 61 degrees F (16 degrees C)*Frost-free period:* 240 days***Map Unit Composition***

Llanoseco silty clay loam, occasionally flooded—90 percent

Minor components—10 percent

Characteristics of Llanoseco Silty Clay Loam, Occasionally Flooded*Slope:* 0 to 1 percent*Geomorphic position:* Flood basins*Parent material:* Silty and clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks*Observed vegetation:* Wheat, annual grasses and forbs, and scattered valley oak*Surface feature:* During periods of flooding, thin layers of silt are deposited on the surface.*Texture of the surface layer:* Silty clay loam*Percentage of the surface covered by rock fragments:* None*Depth to a restrictive feature (duripan):* 60 to 120 inches*Shrink-swell potential:* High (LEP of 6 to 9)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Altered hydrology:* Dams and levees along the Sacramento River and its tributaries, drainage ditches, and leveling for agriculture have altered the hydrology, modifying the frequency and duration of saturation, ponding, and flooding.*Annual flooding frequency:* Occasional*Annual ponding frequency:* Rare*Depth to a water table (zone of saturation):* 40 to 91 inches*Available water capacity:* Very high (about 10.2 inches)*Natural drainage class:* Somewhat poorly drained*Surface runoff (bare conditions):* High***Interpretive groups****Land capability, irrigated:* 2w-2*Land capability, nonirrigated:* 3w-2*Storie index:* 63 (revised)*Hydric soil status:* Not hydric*Hydrologic soil group:* D

Typical profile

Ap—0 to 8 inches; silty clay loam
 2A—8 to 18 inches; silty clay loam
 3Bss1—18 to 28 inches; silty clay
 3Bss2—28 to 41 inches; silty clay
 3Bss3—41 to 57 inches; silty clay
 3Bss4—57 to 71 inches; silty clay
 3Bk1—71 to 83 inches; silty clay
 3Bk2—83 to 89 inches; silty clay
 4Bkqm—89 to 93 inches; duripan

Minor Components in Map Unit 250**Whitecabin and similar soils***Composition:* 7 percent*Slope:* 0 to 1 percent*Geomorphic position:* Flood basins*Hydric soil status:* Hydric**Soils in channels***Composition:* 2 percent*Slope:* 0 to 1 percent*Geomorphic position:* Channels on flood basins*Hydric soil status:* Hydric**Farwell silty clay and similar soils***Composition:* 1 percent*Slope:* 0 to 1 percent*Geomorphic position:* Margins of flood plains and flood basins*Hydric soil status:* Not hydric**252—Whitecabin-Ordferry silty clays, 0 to 1 percent slopes, occasionally flooded*****Map Unit Setting****General location:* West-central Butte County*Major uses:* Cropland and wildlife habitat*Major land resource area:* 17*Landscape:* Sacramento Valley*Elevation:* 95 to 100 feet (29 to 32 meters)*Mean annual precipitation:* 18 to 19 inches (457 to 482 millimeters)*Mean annual air temperature:* 59 to 61 degrees F (15 to 16 degrees C)*Frost-free period:* 240 days***Map Unit Composition***

Whitecabin silty clay, occasionally flooded—60 percent

Ordferry silty clay, occasionally flooded—25 percent

Minor components—15 percent

Characteristics of Whitecabin Silty Clay, Occasionally Flooded*Slope:* 0 to 1 percent*Geomorphic position:* Flood basins*Parent material:* Silty and clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Rice, pasture species, meadow barley, wildrye, curly dock, spikerush, dallisgrass, bermudagrass, cocklebur, Italian ryegrass, Fitch spikeweed, hayfield tarweed, filaree, soft chess, and prickly lettuce

Surface features: The surface has been leveled for agriculture. Slow-moving floodwaters carry sediment that is deposited in very small increments during each period of flooding. The surface layer may be silt loam or silty clay loam. Polygonal cracks open during dry periods.

Texture of the surface layer: Silty clay

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (duripan): 40 to 60 inches

Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: Occasional

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 53 inches

Available water capacity: High (about 8.5 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 3w-2

Land capability, nonirrigated: 3w-2

Storie index: 26 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

Ap—0 to 5 inches; silty clay

Bss1—5 to 13 inches; silty clay

Bss2—13 to 26 inches; silty clay

Bss3—26 to 35 inches; silty clay

Bkss—35 to 45 inches; silty clay

Bk—45 to 53 inches; silty clay

2Bkqm1—53 to 63 inches; duripan

2Bkqm2—63 to 72 inches; duripan

Characteristics of Ord ferry Silty Clay, Occasionally Flooded

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Parent material: Silty and clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Rice, pasture species, meadow barley, medusahead, ripgut brome, wildrye, curly dock, spikerush, cocklebur, Italian ryegrass, Fitch spikeweed, hayfield tarweed, and prickly lettuce

Surface features: The surface has been leveled for agriculture. Slow-moving floodwaters carry sediment that is deposited in very small increments during each period of flooding. The surface layer may be silt loam or silty clay loam. Polygonal cracks open during dry periods.

Texture of the surface layer: Silty clay

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (duripan): 20 to 40 inches

Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: Occasional

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 40 inches

Available water capacity: Low (about 4.3 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Storie index: 10 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

A1—0 to 3 inches; silty clay

A2—3 to 6 inches; silty clay

Bss1—6 to 13 inches; silty clay

Bss2—13 to 25 inches; silty clay

Bk—25 to 29 inches; silty clay

2Bkqm1—29 to 33 inches; duripan

2Bkqm2—33 to 40 inches; duripan

Minor Components in Map Unit 252

Clear Lake clay and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Hydric soil status: Hydric

Oroville taxadjunct, leveled, and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Terraces

Hydric soil status: Not hydric

Soils that are frequently flooded

Composition: 3 percent

Slope: 0 to 1 percent

Geomorphic position: Channels on flood basins

Hydric soil status: Hydric

Soils that are frequently ponded for long periods

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Vernal pools on flood basins

Hydric soil status: Hydric

252yu—Woodleaf gravelly loam, 3 to 15 percent slopes

Map Unit Setting

General location: Yuba County and southeastern Butte County

Major uses: Limited timber production and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 2,000 to 3,195 feet (610 to 975 meters)

Mean annual precipitation: 50 to 72 inches (1,270 to 1,829 millimeters)

Mean annual air temperature: 50 to 57 degrees F (10 to 14 degrees C)

Frost-free period: 140 to 190 days

Map Unit Composition

Woodleaf gravelly loam—80 percent

Minor components—20 percent

Characteristics of Woodleaf Gravelly Loam

Slope: 3 to 15 percent

Geomorphic position: Ultramafic mountains

Parent material: Clayey residuum weathered from ultramafic rocks

Observed vegetation: Mixed conifers, hardwoods, brush, grasses, and forbs

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (lithic bedrock): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.6 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A1 and A2—0 to 9 inches; gravelly loam

2Bt1 and 2Bt2—9 to 28 inches; very gravelly clay loam and very gravelly clay

R—28 inches; bedrock

Minor Components in Map Unit 252yu

Sites and similar soils

Composition: 4 percent

Slope: 3 to 15 percent

Geomorphic position: Metamorphic mountains

Hydric soil status: Not hydric

Mariposa and similar soils

Composition: 4 percent

Slope: 3 to 15 percent

Geomorphic position: Metamorphic mountains

Hydric soil status: Not hydric

Rock outcrop

Composition: 4 percent

Slope: 3 to 15 percent

Geomorphic position: Ultramafic mountains

Hydric soil status: Not hydric

Earlial and similar soils

Composition: 4 percent

Slope: 3 to 15 percent

Geomorphic position: Ultramafic mountains

Hydric soil status: Not hydric

Rogerville silt loam and similar soils

Composition: 4 percent

Slope: 3 to 15 percent

Geomorphic position: Ultramafic mountains

Hydric soil status: Not hydric

253yu—Woodleaf gravelly loam, 15 to 30 percent slopes

Map Unit Setting

General location: Yuba County and southeastern Butte County

Major uses: Limited timber production and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 2,000 to 3,195 feet (610 to 975 meters)

Mean annual precipitation: 50 to 72 inches (1,270 to 1,829 millimeters)

Mean annual air temperature: 50 to 57 degrees F (10 to 14 degrees C)

Frost-free period: 140 to 190 days

Map Unit Composition

Woodleaf gravelly loam—80 percent

Minor components—20 percent

Characteristics of Woodleaf Gravelly Loam

Slope: 15 to 30 percent

Geomorphic position: Ultramafic mountains

Parent material: Clayey residuum weathered from ultramafic rocks

Observed vegetation: Mixed conifers, hardwoods, brush, grasses, and forbs

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (lithic bedrock): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.6 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

*Interpretive groups**Land capability, irrigated: 7e-1**Land capability, nonirrigated: 7e-1**Hydric soil status: Not hydric**Hydrologic soil group: C**Typical profile*

A1 and A2—0 to 9 inches; gravelly loam

2Bt1 and 2Bt2—9 to 28 inches; very gravelly clay loam and very gravelly clay

R—28 inches; bedrock

Minor Components in Map Unit 253yu**Sites and similar soils***Composition: 4 percent**Slope: 15 to 30 percent**Geomorphic position: Metamorphic mountains**Hydric soil status: Not hydric***Mariposa and similar soils***Composition: 4 percent**Slope: 15 to 30 percent**Geomorphic position: Metamorphic mountains**Hydric soil status: Not hydric***Rock outcrop***Composition: 4 percent**Slope: 15 to 30 percent**Geomorphic position: Ultramafic mountains**Hydric soil status: Not hydric***Earlal and similar soils***Composition: 4 percent**Slope: 15 to 30 percent**Geomorphic position: Ultramafic mountains**Hydric soil status: Not hydric***Cerpone and similar soils***Composition: 4 percent**Slope: 15 to 30 percent**Geomorphic position: Ultramafic mountains**Hydric soil status: Not hydric***255—Whitecabin-Ordferry complex, 0 to 1 percent slopes, occasionally flooded****Map Unit Setting***General location: West-central Butte County**Major uses: Cropland, pasture, and wildlife habitat**Major land resource area: 17**Landscape: Sacramento Valley**Elevation: 95 to 105 feet (29 to 33 meters)**Mean annual precipitation: 18 to 19 inches (457 to 482 millimeters)**Mean annual air temperature: 59 to 61 degrees F (15 to 16 degrees C)**Frost-free period: 240 days*

Map Unit Composition

Whitecabin silty clay loam, occasionally flooded—60 percent

Ordferri silty clay, occasionally flooded—30 percent

Minor components—10 percent

Characteristics of Whitecabin Silty Clay Loam, Occasionally Flooded

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Parent material: Silty and clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Rice, meadow barley, wildrye, curly dock, spikerush, dallisgrass, bermudagrass, cocklebur, Italian ryegrass, Fitch spikeweed, hayfield tarweed, filaree, soft chess, and prickly lettuce

Surface features: The surface has been leveled for agriculture. Slow-moving floodwaters carry sediment that is deposited in very small increments during each period of flooding. The surface layer may be silt loam or silty clay loam. Polygonal cracks open during dry periods.

Texture of the surface layer: Silty clay loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (duripan): 40 to 60 inches

Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: Occasional

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 53 inches

Available water capacity: Moderate (about 7.4 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 3w-2

Land capability, nonirrigated: 3w-2

Storie index: 44 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

Ap—0 to 8 inches; silty clay loam

Bssb1—8 to 20 inches; clay

Bssb2—20 to 44 inches; clay

2Bkqmb—44 to 60 inches; duripan

Characteristics of Ordferri Silty Clay, Occasionally Flooded

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Parent material: Silty and clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Rice, meadow barley, medusahead, riggut brome, wildrye, curly dock, spikerush, cocklebur, Italian ryegrass, Fitch spikeweed, hayfield tarweed, and prickly lettuce

Surface features: The surface has been leveled for agriculture. Slow-moving floodwaters carry sediment that is deposited in very small increments during each period of flooding. The surface layer may be silt loam or silty clay loam. Polygonal cracks open during dry periods.

Texture of the surface layer: Silty clay

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (duripan): 20 to 40 inches

Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: Occasional

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 40 inches

Available water capacity: Low (about 4.3 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Storie index: 10 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

A1—0 to 3 inches; silty clay

A2—3 to 6 inches; silty clay

Bss1—6 to 13 inches; silty clay

Bss2—13 to 25 inches; silty clay

Bk—25 to 29 inches; silty clay

2Bkqm1—29 to 33 inches; duripan

2Bkqm2—33 to 40 inches; duripan

Minor Components in Map Unit 255

Soils that are frequently flooded

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Channels on flood basins

Hydric soil status: Hydric

Clear Lake clay and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Hydric soil status: Hydric

256—Whitecabin silt loam, 0 to 1 percent slopes, occasionally flooded

Map Unit Setting

General location: West-central Butte County

Major uses: Cropland and wildlife habitat

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 95 to 100 feet (29 to 30 meters)

Mean annual precipitation: 18 to 19 inches (457 to 482 millimeters)

Mean annual air temperature: 59 to 61 degrees F (15 to 16 degrees C)

Frost-free period: 240 days

Map Unit Composition

Whitecabin silt loam, occasionally flooded—85 percent

Minor components—15 percent

Characteristics of Whitecabin Silt Loam, Occasionally Flooded

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Parent material: Silty and clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Rice, meadow barley, wildrye, curly dock, spikerush, dallisgrass, bermudagrass, cocklebur, Italian ryegrass, Fitch spikeweed, hayfield tarweed, filaree, soft chess, and prickly lettuce

Surface features: The surface has been leveled for agriculture. Slow-moving floodwaters carry sediment that is deposited in very small increments during each period of flooding. The surface layer may be silt loam or silty clay loam. Polygonal cracks open during dry periods.

Texture of the surface layer: Silt loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (duripan): 40 to 60 inches

Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: Occasional

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 53 inches

Available water capacity: High (about 8.6 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 3w-2

Land capability, nonirrigated: 3w-2

Storie index: 49 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

Ap—0 to 6 inches; silt loam
 Bss1—6 to 13 inches; clay
 Bss2—13 to 27 inches; clay
 Bkss—27 to 42 inches; clay
 2Bk—42 to 54 inches; clay loam
 2Bkqm—54 to 62 inches; duripan

Minor Components in Map Unit 256**Soils that are frequently flooded**

Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Channels on flood basins
Hydric soil status: Hydric

Clear Lake clay and similar soils

Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Ordferry clay and similar soils

Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

257—Llanoseco silty clay loam, 0 to 1 percent slopes, frequently flooded***Map Unit Setting***

General location: Western Butte County
Major uses: Nonirrigated crops and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 85 to 95 feet (27 to 30 meters)
Mean annual precipitation: 18 to 19 inches (457 to 483 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 240 days

Map Unit Composition

Llanoseco silty clay loam, frequently flooded—90 percent
 Minor components—10 percent

Characteristics of Llanoseco Silty Clay Loam, Frequently Flooded

Slope: 0 to 1 percent
Geomorphic position: Flood basins
Parent material: Silty and clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Wheat, annual grasses and forbs, and scattered valley oak
Surface feature: During periods of flooding, thin layers of silt are deposited on the surface.
Texture of the surface layer: Silty clay loam
Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (duripan): 60 to 120 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Hydrology has been altered by levee construction along the Sacramento River. Historically, flooding occurred more frequently and at a lower velocity.

Annual flooding frequency: Frequent

Annual ponding frequency: Rare

Depth to a water table (zone of saturation): 40 to 91 inches

Available water capacity: Very high (about 10.2 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4w-2

Land capability, nonirrigated: 4w-2

Storie index: 53 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

Ap—0 to 8 inches; silty clay loam

2A—8 to 18 inches; silty clay loam

3Bss1—18 to 28 inches; silty clay

3Bss2—28 to 41 inches; silty clay

3Bss3—41 to 57 inches; silty clay

3Bss4—57 to 71 inches; silty clay

3Bk1—71 to 83 inches; silty clay

3Bk2—83 to 89 inches; silty clay

4Bkqm—89 to 93 inches; duripan

Minor Components in Map Unit 257

Whitecabin and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Hydric soil status: Hydric

Soils in channels

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Channels on flood basins

Hydric soil status: Hydric

Soils that are deep

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Hydric soil status: Not hydric

Farwell silty clay and similar soils

Composition: 1 percent

Slope: 0 to 1 percent

Geomorphic position: Margins of flood plains and flood basins

Hydric soil status: Not hydric

258—Codora silty clay loam, 0 to 1 percent slopes, occasionally flooded

Map Unit Setting

General location: Southwestern Butte County and southeastern Glenn County

Major uses: Nonirrigated and irrigated crops and wildlife habitat

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 90 to 95 feet (27 to 29 meters)

Mean annual precipitation: 18 to 19 inches (457 to 483 millimeters)

Mean annual air temperature: 61 degrees F (16 degrees C)

Frost-free period: 240 days

Map Unit Composition

Codora silty clay loam, occasionally flooded—85 percent

Minor components—15 percent

Characteristics of Codora Silty Clay Loam, Occasionally Flooded

Slope: 0 to 2 percent

Geomorphic position: Flood plains

Parent material: Silty and clayey alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Annual grasses and forbs

Surface feature: Most areas have been leveled for agriculture.

Texture of the surface layer: Silty clay loam

Percentage of the surface covered by rock fragments: None

Restrictive feature: None identified

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Dams and levees along the Sacramento River and its tributaries, drainage ditches, and leveling for agriculture have altered the hydrology, modifying the frequency and duration of saturation, ponding, and flooding.

Annual flooding frequency: Occasional

Annual ponding frequency: Occasional

Depth to a water table (zone of saturation): 38 to 80 inches

Available water capacity: Very high (about 11.0 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Very low

Interpretive groups

Land capability, irrigated: 3w-2

Land capability, nonirrigated: 2w-2

Storie index: 62 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

Ap—0 to 6 inches; silty clay loam

A—6 to 11 inches; silty clay loam

Bw1—11 to 22 inches; silty clay loam

Bw2—22 to 38 inches; silty clay loam

Bw3—38 to 60 inches; silty clay loam

Minor Components in Map Unit 258

Marvin and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Flood plains

Hydric soil status: Hydric

Llanoseco and similar soils

Composition: 5 percent

Slope: 0 to 2 percent

Geomorphic position: Flood plains

Hydric soil status: Not hydric

Columbia taxadjunct and similar soils

Composition: 5 percent

Slope: 0 to 2 percent

Geomorphic position: Flood plains

Hydric soil status: Hydric

260—Ordferry silty clay, 0 to 1 percent slopes, occasionally flooded

Map Unit Setting

General location: West-central Butte County

Major uses: Cropland and wildlife habitat

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 95 to 105 feet (30 to 33 meters)

Mean annual precipitation: 18 to 19 inches (457 to 482 millimeters)

Mean annual air temperature: 59 to 61 degrees F (15 to 16 degrees C)

Frost-free period: 240 days

Map Unit Composition

Ordferry silty clay, occasionally flooded—90 percent

Minor components—10 percent

Characteristics of Ordferry Silty Clay, Occasionally Flooded

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Parent material: Silty and clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Rice, pasture species, meadow barley, medusahead, ripgut brome, wildrye, curly dock, spikerush, cocklebur, Italian ryegrass, Fitch spikeweed, hayfield tarweed, and prickly lettuce

Surface features: The surface has been leveled for agriculture. Slow-moving floodwaters carry sediment that is deposited in very small increments during each period of flooding. The surface layer may be silt loam or silty clay loam. Polygonal cracks open during dry periods.

Texture of the surface layer: Silty clay

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (duripan): 20 to 40 inches

Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: Occasional

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 40 inches

Available water capacity: Low (about 4.3 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Storie index: 10 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

A1—0 to 3 inches; silty clay

A2—3 to 6 inches; silty clay

Bss1—6 to 13 inches; silty clay

Bss2—13 to 25 inches; silty clay

Bk—25 to 29 inches; silty clay

2Bkqm1—29 to 33 inches; duripan

2Bkqm2—33 to 40 inches; duripan

Minor Components in Map Unit 260

Whitecabin and similar soils

Composition: 3 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Hydric soil status: Hydric

Esquon and similar soils

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Hydric soil status: Hydric

Esquon, overwash, and similar soils

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Hydric soil status: Hydric

Neerdobe and similar soils

Composition: 1 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Hydric soil status: Hydric

Soils that are 10 to 20 inches deep to a duripan

Composition: 1 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Hydric soil status: Hydric

Soils that are frequently ponded for long periods

Composition: 1 percent

Slope: 0 to 1 percent

Geomorphic position: Vernal pools on flood basins

Hydric soil status: Hydric

280—Columbia taxadjunct very fine sandy loam, 0 to 1 percent slopes, frequently flooded

Map Unit Setting

General location: Western Butte County

Major uses: Wildlife habitat, watershed, and recreation

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 85 to 150 feet (27 to 46 meters)

Mean annual precipitation: 18 to 22 inches (457 to 559 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 240 to 245 days

Map Unit Composition

Columbia taxadjunct stratified very fine sandy loam—80 percent

Minor components—20 percent

Characteristics of Columbia Taxadjunct Stratified Very Fine Sandy Loam

Slope: 0 to 1 percent

Geomorphic position: Channels and oxbows on flood plains

Parent material: Sandy alluvium over silty alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Riparian vegetation, such as willows, California sycamore, blackberry, wild grape, sedges, and grasses

Surface feature: Floodwaters deposit fresh sediment annually.

Texture of the surface layer: Stratified fine sandy loam

Percentage of the surface covered by rock fragments: None

Restrictive feature: None identified

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: Frequent

Annual ponding frequency: None

Depth to a water table (zone of saturation): 0 to 24 inches

Available water capacity: High (about 9.1 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Storie index: 49 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

C1—0 to 8 inches; stratified fine sandy loam

C2—8 to 10 inches; fine sandy loam

C3—10 to 19 inches; stratified fine sandy loam

C4—19 to 30 inches; stratified fine sandy loam

C5—30 to 40 inches; stratified silt loam

C6—40 to 60 inches; stratified silt loam

Minor Components in Map Unit 280

Columbia sand and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Channels and oxbows on flood plains

Hydric soil status: Hydric

Parrott silt loam and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Bars on flood plains

Hydric soil status: Not hydric

Riverwash

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Gravel bars in channels

Hydric soil status: Hydric

Oxbow lakes

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Oxbows on flood plains

Hydric soil status: Hydric

290—Perkins gravelly loam, 0 to 2 percent slopes

Map Unit Setting

General location: Southeastern Butte County

Major uses: Pasture, homesite development, and wildlife habitat

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 120 to 225 feet (38 to 70 meters)

Mean annual precipitation: 25 inches (635 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 250 to 255 days

Map Unit Composition

Perkins gravelly loam—90 percent

Minor components—10 percent

Characteristics of Perkins Gravelly Loam

Slope: 0 to 2 percent

Geomorphic position: Low terraces

Parent material: Fine-loamy alluvium over sandy and gravelly alluvium derived from igneous and metamorphic rocks

Observed vegetation: Annual grasses and forbs and scattered blue oak

Surface feature: Some areas have been leveled for agriculture.

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 0 to 10 percent fine, subrounded gravel

Restrictive feature: None identified

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 60 to 80 inches

Available water capacity: Moderate (about 5.6 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very low

Interpretive groups

Land capability, irrigated: 2s-4

Land capability, nonirrigated: 3s-4

Storie index: 53 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Ap—0 to 8 inches; gravelly loam

Bt1—8 to 24 inches; gravelly loam

Bt2—24 to 38 inches; very gravelly sandy clay loam

BC—38 to 48 inches; very gravelly sandy loam

C—48 to 73 inches; very gravelly sandy loam

Minor Components in Map Unit 290

Kimball loam and similar soils

Composition: 5 percent

Slope: 0 to 2 percent

Geomorphic position: Low terraces

Hydric soil status: Not hydric

Eastbiggs loam and similar soils

Composition: 3 percent

Slope: 0 to 2 percent

Geomorphic position: Low terraces

Hydric soil status: Not hydric

Soils that are frequently flooded

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Channels on low terraces

Hydric soil status: Hydric

300—Redsluff gravelly loam, 0 to 2 percent slopes

Map Unit Setting

General location: Northwestern Butte County

Major uses: Homesite development, irrigated crops, livestock grazing, woodland, wildlife habitat, and watershed

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 175 to 400 feet (54 to 122 meters)

Mean annual precipitation: 24 to 29 inches (610 to 737 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 250 to 255 days

Map Unit Composition

Redsluff gravelly loam—80 percent

Minor components—20 percent

Characteristics of Redsluff Gravelly Loam

Slope: 0 to 2 percent

Geomorphic position: Low fan terraces

Parent material: Fine-loamy alluvium derived from igneous, metamorphic, and sedimentary rocks over gravelly alluvium derived from volcanic rocks

Observed vegetation: Annual grasses and forbs, valley oak, blue oak, interior live oak, foothill pine, and almond orchards

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 0 to 15 percent medium, rounded gravel, 0 to 5 percent rounded cobbles

Restrictive feature: None identified

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Rare

Annual ponding frequency: None

Depth to a water table (zone of saturation): 35 to 80 inches

Available water capacity: Moderate (about 5.5 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Negligible

Interpretive groups

Land capability, irrigated: 2s-11

Land capability, nonirrigated: 3s-11

Storie index: 52 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Ap—0 to 2 inches; gravelly loam

Bt1—2 to 5 inches; gravelly loam

Bt2—5 to 12 inches; gravelly clay loam

Bt3—12 to 21 inches; gravelly loam

Bt4—21 to 29 inches; gravelly loam

Bt5—29 to 37 inches; gravelly loam

Bt6—37 to 42 inches; extremely gravelly sandy loam

Cq—42 to 80 inches; extremely gravelly loamy sand

Minor Components in Map Unit 300

Fernandez sandy loam and similar soils

Composition: 4 percent

Slope: 0 to 2 percent

Geomorphic position: Intermediate fan terraces

Hydric soil status: Not hydric

Soils that are more than 40 inches deep to weakly cemented material

Composition: 4 percent

Slope: 0 to 2 percent

Geomorphic position: Low fan terraces

Hydric soil status: Not hydric

Typic Haploxeralfs, very deep, and similar soils

Composition: 3 percent

Slope: 0 to 2 percent

Geomorphic position: Intermediate fan terraces

Hydric soil status: Not hydric

Anita soils with a gravelly duripan and similar soils

Composition: 3 percent

Slope: 0 to 1 percent

Geomorphic position: Swales on low fan terraces

Hydric soil status: Hydric

Pachic Argixerolls and similar soils

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Low fan terraces

Hydric soil status: Not hydric

Redtough and similar soils

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: High fan terraces

Hydric soil status: Not hydric

Munjar and similar soils

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Intermediate fan terraces

Hydric soil status: Not hydric

301—Wafap-Hamslough complex, 0 to 2 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Livestock grazing, wildlife habitat, and watershed

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 150 to 440 feet (47 to 135 meters)

Mean annual precipitation: 25 to 28 inches (635 to 711 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 250 to 255 days

Map Unit Composition

Wafap gravelly loam—70 percent
 Hamslough clay—15 percent
 Minor components—15 percent

Characteristics of Wafap Gravelly Loam

Slope: 0 to 2 percent
Geomorphic position: Bars on low stream terraces
Parent material: Gravelly and clayey alluvium over cobbly alluvium over cemented, cobbly and gravelly alluvium derived from volcanic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 5 percent fine, rounded gravel, 0 to 5 percent rounded cobbles, 0 to 2 percent rounded stones
Depth to a restrictive feature (duripan): 40 to 60 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Rare
Annual ponding frequency: None
Depth to a water table (zone of saturation): 13 to 60 inches
Available water capacity: Low (about 2.7 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Storie index: 24 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile

A—0 to 1 inch; gravelly loam
 Bt1—1 to 5 inches; cobbly clay loam
 Bt2—5 to 13 inches; very cobbly clay loam
 Bt3—13 to 32 inches; extremely cobbly clay loam
 Bt4—32 to 39 inches; extremely cobbly clay loam
 Btq—39 to 46 inches; extremely gravelly sandy clay loam
 2Bqm—46 inches; cemented, cobbly and gravelly duripan

Characteristics of Hamslough Clay

Slope: 0 to 2 percent
Geomorphic position: Channels on low stream terraces
Parent material: Clayey alluvium over clayey and gravelly alluvium over cemented, cobbly and gravelly alluvium derived from volcanic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Clay
Percentage of the surface covered by rock fragments: 0 to 20 percent medium, rounded gravel, 0 to 25 percent rounded cobbles
Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Occasional
Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 80 inches

Available water capacity: Very low (about 2.3 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Storie index: 5 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

A1—0 to 3 inches; clay

A2—3 to 14 inches; cobbly clay

Bw—14 to 19 inches; extremely gravelly clay

Bg—19 to 27 inches; extremely gravelly sandy clay

2Bqm—27 inches; cemented, cobbly and gravelly duripan

Minor Components in Map Unit 301

Loamy-skeletal soils that are 40 to 60 inches deep to a duripan

Composition: 3 percent

Slope: 0 to 2 percent

Geomorphic position: Bars on low stream terraces

Hydric soil status: Not hydric

Fine textured soils that are 40 to 60 inches deep to a duripan

Composition: 3 percent

Slope: 0 to 2 percent

Geomorphic position: Bars on low stream terraces

Hydric soil status: Not hydric

Fine-loamy soils that are 40 to 60 inches deep to a duripan

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Bars on low stream terraces

Hydric soil status: Not hydric

Tuscan taxadjunct and similar soils

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Bars on low stream terraces

Hydric soil status: Not hydric

Anita soils with a gravelly duripan and similar soils

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Clayey swales on stream terraces

Hydric soil status: Hydric

Oxyaquic Argixerolls, very stony, and similar soils

Composition: 1 percent

Slope: 0 to 2 percent

Geomorphic position: Areas along the upper reaches of streams in canyons on stream terraces

Hydric soil status: Not hydric

Soils that are frequently ponded for long periods*Composition:* 1 percent*Slope:* 0 to 1 percent*Geomorphic position:* Vernal pools in channels on low stream terraces*Hydric soil status:* Hydric**Soils that are frequently flooded***Composition:* 1 percent*Slope:* 0 to 2 percent*Geomorphic position:* Flood plains*Hydric soil status:* Not hydric**302—Redtough-Redswale complex, 0 to 2 percent slopes*****Map Unit Setting****General location:* Northwestern Butte County*Major uses:* Livestock grazing, homesite development, wildlife habitat, and watershed*Major land resource area:* 17*Landscape:* Sacramento Valley*Elevation:* 200 to 400 feet (61 to 122 meters)*Mean annual precipitation:* 23 to 28 inches (584 to 711 millimeters)*Mean annual air temperature:* 61 to 63 degrees F (16 to 17 degrees C)*Frost-free period:* 250 to 255 days***Map Unit Composition***

Redtough loam—50 percent

Redswale cobbly loam—35 percent

Minor components—15 percent

Characteristics of Redtough Loam*Slope:* 0 to 3 percent*Geomorphic position:* Mounds on high fan terraces*Parent material:* Loamy alluvium over cemented, cobbly and gravelly alluvium derived from volcanic rocks*Observed vegetation:* Annual grasses and forbs*Texture of the surface layer:* Loam*Percentage of the surface covered by rock fragments:* 0 to 5 percent medium, well rounded gravel, 0 to 10 percent well rounded cobbles*Depth to a restrictive feature (duripan):* 10 to 20 inches (fig. 25)*Shrink-swell potential:* Moderate (LEP of 3 to less than 6)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* None*Annual ponding frequency:* None*Depth to a water table (zone of saturation):* 2 to 20 inches*Available water capacity:* Very low (about 1.6 inches)*Natural drainage class:* Somewhat poorly drained*Surface runoff (bare conditions):* Very high***Interpretive groups****Land capability, irrigated:* 7s-8*Land capability, nonirrigated:* 7s-8*Storie index:* 11 (revised)*Hydric soil status:* Not hydric*Hydrologic soil group:* D



Figure 25.—Exposure of a duripan, a pedogenic, silica-cemented layer, which underlies the Redtough and Redswale soils. These soils occur on terraces in areas of the Red Bluff Formation.

Typical profile

- A—0 to 1 inch; loam
- Bt1—1 to 7 inches; gravelly loam
- Bt2—7 to 13 inches; very cobbly loam
- Bqm—13 inches; cemented, very gravelly duripan

Characteristics of Redswale Cobbly Loam

Slope: 0 to 3 percent

Geomorphic position: Swales on high fan terraces

Parent material: Cobbly and loamy alluvium over cemented, cobbly and gravelly alluvium derived from volcanic rocks

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Cobbly loam

Percentage of the surface covered by rock fragments: 5 to 25 percent coarse, well rounded gravel, 0 to 40 percent well rounded cobbles, 0 to 5 percent well rounded stones

Depth to a restrictive feature (duripan): 4 to 10 inches (fig. 25)

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 10 inches

Available water capacity: Very low (about 0.7 inch)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 8
Land capability, nonirrigated: 8
Storie index: 4 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile

A—0 to 1 inch; cobbly loam
 Bt—1 to 7 inches; very cobbly loam
 Bqm—7 inches; cemented, very gravelly duripan

Minor Components in Map Unit 302**Soils that are frequently ponded for long periods**

Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Vernal pools on high fan terraces
Hydric soil status: Hydric

Redswale soils that are frequently flooded for long periods and similar soils

Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Large swales on high fan terraces
Hydric soil status: Hydric

Anita soils with a gravelly duripan and similar soils

Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Clayey swales on high fan terraces
Hydric soil status: Hydric

Tuscan and similar soils

Composition: 2 percent
Slope: 0 to 3 percent
Geomorphic position: Mounds on high fan terraces
Hydric soil status: Not hydric

Abruptic Durixeralfs and similar soils

Composition: 2 percent
Slope: 0 to 3 percent
Geomorphic position: Mounds on high fan terraces
Hydric soil status: Not hydric

Munjar and similar soils

Composition: 2 percent
Slope: 0 to 3 percent
Geomorphic position: Mounds on high fan terraces
Hydric soil status: Not hydric

Soils on riser slopes

Composition: 1 percent
Slope: 10 to 35 percent
Geomorphic position: Risers on the edge of high fan terraces
Hydric soil status: Not hydric

303—Munjar-Tuscan taxadjunct-Galt complex, 0 to 2 percent slopes

Map Unit Setting

General location: Northwestern Butte County

Major uses: Livestock grazing, wildlife habitat, watershed, and homesite development

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 180 to 395 feet (56 to 121 meters)

Mean annual precipitation: 23 to 26 inches (584 to 660 millimeters)

Mean annual air temperature: 61 degrees F (16 degrees C)

Frost-free period: 250 to 255 days

Map Unit Composition

Munjar gravelly loam—60 percent

Tuscan taxadjunct gravelly clay loam—20 percent

Galt clay—10 percent

Minor components—10 percent

Characteristics of Munjar Gravelly Loam

Slope: 0 to 2 percent

Geomorphic position: Bars and mounds on intermediate fan terraces

Parent material: Loamy, cobbly and gravelly alluvium over cemented, gravelly alluvium derived from volcanic rocks

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 5 to 30 percent coarse, well rounded gravel

Depth to a restrictive feature (duripan): 20 to 40 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (minimum depth to zone of saturation): 12 to 40 inches

Saturated hydraulic conductivity (lowest Ksat): Moderately slow (0.2 to less than 0.6 in/hr)

Available water capacity: Low (about 3.0 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6s-3

Land capability, nonirrigated: 6s-3

Storie index: 21 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A—0 to 2 inches; gravelly loam

Bt1—2 to 5 inches; gravelly loam

Bt2—5 to 9 inches; gravelly loam

Bt3—9 to 16 inches; gravelly loam

Bt4—16 to 22 inches; extremely gravelly clay loam

2Btq—22 to 31 inches; extremely cobbly sandy clay

2Btqm—31 to 46 inches; extremely gravelly duripan

Characteristics of Tuscan Taxadjunct Gravelly Clay Loam

Slope: 0 to 2 percent

Geomorphic position: Mounds on intermediate fan terraces

Parent material: Gravelly and clayey alluvium over cemented, cobbly and gravelly alluvium derived from volcanic rocks

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Gravelly clay loam

Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, rounded gravel, 0 to 10 percent rounded cobbles

Depth to a restrictive feature (duripan): 20 to 40 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (minimum depth to zone of saturation): 2 to 40 inches

Saturated hydraulic conductivity (lowest Ksat): Slow (0.06 to less than 0.2 in/hr)

Available water capacity: Low (about 3.7 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 5w-8

Land capability, nonirrigated: 5w-8

Storie index: 15 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A—0 to 2 inches; gravelly clay loam

Bt1—2 to 5 inches; gravelly clay

Bt2—5 to 13 inches; gravelly clay

Bt3—13 to 23 inches; gravelly clay loam

Bt4—23 to 29 inches; very gravelly clay loam

2Bqm—29 inches; extremely cobbly duripan

Characteristics of Galt Clay

Slope: 0 to 2 percent

Geomorphic position: Swales on intermediate fan terraces

Parent material: Clayey alluvium over cemented, gravelly alluvium derived from volcanic rocks

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Clay

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, rounded gravel

Depth to a restrictive feature (duripan): 20 to 40 inches

Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Rare

Annual ponding frequency: Frequent

Water table (minimum depth to zone of saturation): 0 to 40 inches

Saturated hydraulic conductivity (lowest Ksat): Slow (0.06 to less than 0.2 in/hr)

Available water capacity: Low (about 4.8 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Storie index: 10 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

A1—0 to 3 inches; clay

A2—3 to 13 inches; clay

Bss—13 to 29 inches; clay

Bkss—29 to 32 inches; clay

2Bkqm—32 to 39 inches; duripan

Minor Components in Map Unit 303

Anita clay and similar soils

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Swales on fan terraces

Hydric soil status: Hydric

Tuscan gravelly loam and similar soils

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Mounds on fan terraces

Hydric soil status: Not hydric

Redding loam and similar soils

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Mounds on fan terraces

Hydric soil status: Not hydric

Soils in cobble-lined channels

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Channels on fan terraces

Hydric soil status: Hydric

Areas where volcanic sediment crops out

Composition: 1 percent

Slope: 0 to 2 percent

Geomorphic position: Fan terraces

Hydric soil status: Not hydric

Soils that are frequently ponded for long periods

Composition: 1 percent

Slope: 0 to 1 percent

Geomorphic position: Vernal pools on fan terraces

Hydric soil status: Hydric

304—Redtough loam, 8 to 35 percent slopes

Map Unit Setting

General location: Northwestern Butte County

Major uses: Livestock grazing, homesite development, wildlife habitat, and watershed

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 200 to 295 feet (61 to 91 meters)

Mean annual precipitation: 23 to 28 inches (584 to 711 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 255 days

Map Unit Composition

Redtough loam—80 percent

Minor components—20 percent

Characteristics of Redtough Loam

Slope: 8 to 35 percent

Geomorphic position: Riser slopes on high fan terraces

Parent material: Loamy alluvium over cemented, cobbly and gravelly alluvium derived from volcanic rocks

Observed vegetation: Annual grasses and forbs and blue oak

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: 0 to 5 percent medium, well rounded gravel, 0 to 10 percent well rounded cobbles

Depth to a restrictive feature (duripan): 10 to 20 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.6 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7s-8

Land capability, nonirrigated: 7s-8

Storie index: 12 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 1 inch; loam

Bt1—1 to 7 inches; gravelly loam

Bt2—7 to 13 inches; very cobbly loam

Bqm—13 inches; cemented, very gravelly duripan

Minor Components in Map Unit 304

Soils that are 20 to 40 inches deep to a duripan

Composition: 10 percent

Slope: 8 to 35 percent

Geomorphic position: Riser slopes on high fan terraces

Hydric soil status: Not hydric

Redswale and similar soils*Composition:* 8 percent*Slope:* 8 to 35 percent*Geomorphic position:* Riser slopes on high fan terraces*Hydric soil status:* Not hydric**Areas where a duripan crops out***Composition:* 2 percent*Slope:* 8 to 35 percent*Geomorphic position:* Riser slopes on high fan terraces*Hydric soil status:* Not hydric**305—Redtough-Redswale-Anita, gravelly duripan, complex, 0 to 5 percent slopes*****Map Unit Setting****General location:* Central Butte County*Major uses:* Livestock grazing, watershed, and wildlife habitat*Major land resource area:* 18*Landscape:* Southern Cascade foothills*Elevation:* 140 to 265 feet (44 to 81 meters)*Mean annual precipitation:* 26 to 28 inches (660 to 711 millimeters)*Mean annual air temperature:* 61 to 63 degrees F (16 to 17 degrees C)*Frost-free period:* 250 to 255 days***Map Unit Composition***

Redtough gravelly loam—45 percent

Redswale loam—25 percent

Anita gravelly clay, gravelly duripan—20 percent

Minor components—10 percent

Characteristics of Redtough Gravelly Loam*Slope:* 0 to 5 percent*Geomorphic position:* Mounds on strath terraces*Parent material:* Loamy alluvium derived from volcanic and sedimentary rocks over cemented, gravelly alluvium derived from volcanic rocks*Observed vegetation:* Annual grasses and forbs*Texture of the surface layer:* Gravelly loam*Percentage of the surface covered by rock fragments:* 0 to 5 percent medium, well rounded gravel*Depth to a restrictive feature (duripan):* 10 to 20 inches*Shrink-swell potential:* Low (LEP of less than 3)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* None*Annual ponding frequency:* None*Depth to a water table (zone of saturation):* 2 to 20 inches*Available water capacity:* Very low (about 2.1 inches)*Natural drainage class:* Somewhat poorly drained*Surface runoff (bare conditions):* Very high***Interpretive groups****Land capability, irrigated:* 6e-8*Land capability, nonirrigated:* 6e-8

Storie index: 39 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile

A—0 to 2 inches; gravelly loam
 Bt1—2 to 5 inches; gravelly loam
 Bt2—5 to 8 inches; gravelly loam
 Bt3—8 to 15 inches; clay loam
 2Bqm—15 inches; cemented, very gravelly duripan

Characteristics of Redswale Loam

Slope: 0 to 5 percent

Geomorphic position: Swales on strath terraces

Parent material: Loamy and gravelly alluvium derived from volcanic and sedimentary rocks over cemented, gravelly alluvium derived from volcanic rocks

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: 5 to 25 percent coarse, well rounded gravel

Depth to a restrictive feature (duripan): 4 to 10 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 10 inches

Available water capacity: Very low (about 0.6 inch)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Storie index: 39 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 1 inch; loam
 Bt—1 to 5 inches; very gravelly loam
 2Bqm—5 inches; cemented, very gravelly duripan

Characteristics of Anita Gravelly Clay, Gravelly Duripan

Slope: 0 to 2 percent

Geomorphic position: Large swales on strath terraces

Parent material: Clayey alluvium over cemented, gravelly alluvium derived from volcanic rocks

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Gravelly clay

Percentage of the surface covered by rock fragments: 0 to 10 percent medium, subrounded gravel, 0 to 60 percent subrounded cobbles

Depth to a restrictive feature (duripan): 10 to 20 inches

Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Drainage and irrigation ditches have modified the natural depth

to a water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: None

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 20 inches

Available water capacity: Very low (about 1.7 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7w-2

Land capability, nonirrigated: 7w-2

Storie index: 12 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

A—0 to 3 inches; gravelly clay

Bss1—3 to 8 inches; gravelly clay

Bss2—8 to 15 inches; gravelly clay

2Bkqm—15 inches; cemented, gravelly duripan

Minor Components in Map Unit 305

Tuscan and similar soils

Composition: 2 percent

Slope: 0 to 5 percent

Geomorphic position: Mounds on strath terraces

Hydric soil status: Not hydric

Fallager loam and similar soils

Composition: 2 percent

Slope: 0 to 5 percent

Geomorphic position: Swales on strath terraces

Hydric soil status: Not hydric

Areas where a duripan crops out

Composition: 2 percent

Slope: 0 to 5 percent

Geomorphic position: Strath terraces

Hydric soil status: Not hydric

Soils that are frequently ponded for long periods

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Vernal pools on strath terraces

Hydric soil status: Hydric

Areas of sandstone outcrops

Composition: 1 percent

Slope: 0 to 5 percent

Geomorphic position: Strath terraces

Hydric soil status: Not hydric

Soils that have slopes of more than 50 percent

Composition: 1 percent

Slope: 50 to 150 percent

Geomorphic position: Cliffs on strath terraces

Hydric soil status: Not hydric

306—Duric Xerarents complex, 0 to 1 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Cropland

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 130 to 170 feet (40 to 53 meters)

Mean annual precipitation: 26 inches (660 millimeters)

Mean annual air temperature: 63 degrees F (17 degrees C)

Frost-free period: 250 days

Map Unit Composition

Duric Xerarents, fill—50 percent

Duric Xerarents, cut—40 percent

Minor components—10 percent

Characteristics of Duric Xerarents, Fill

Slope: 0 to 1 percent

Geomorphic position: Leveled strath terraces

Parent material: Human-transported, loamy alluvium derived from igneous and metamorphic rocks

Observed vegetation: Rice and annual grasses and forbs

Surface feature: The surface has been leveled for agriculture.

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (duripan): 14 to 80 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: None

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 40 inches

Available water capacity: Moderate (about 5.9 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7w-2

Land capability, nonirrigated: 7w-2

Storie index: 34 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

Ap—0 to 8 inches; loam

C1—8 to 14 inches; sandy clay loam

C2—14 to 20 inches; sandy clay loam

Ab—20 to 36 inches; sandy loam

Btb—36 to 40 inches; clay

2Bqmb—40 inches; duripan

Characteristics of Duric Xerarents, Cut

Slope: 0 to 1 percent

Geomorphic position: Leveled strath terraces

Parent material: Human-altered, loamy alluvium derived from igneous and metamorphic rocks

Observed vegetation: Rice and annual grasses and forbs

Surface feature: The surface has been leveled for agriculture.

Texture of the surface layer: Sandy loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (duripan): 4 to 22 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: None

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 40 inches

Available water capacity: Very low (about 1.8 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7w-2

Land capability, nonirrigated: 7w-2

Storie index: 14 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

Ap—0 to 13 inches; sandy loam

B—13 to 15 inches; gravelly sandy loam

2Bqm—15 inches; duripan

Minor Components in Map Unit 306

Tuscan and similar soils

Composition: 3 percent

Slope: 0 to 1 percent

Geomorphic position: Leveled strath terraces

Hydric soil status: Hydric

Fallager loam and similar soils

Composition: 3 percent

Slope: 0 to 1 percent

Geomorphic position: Leveled strath terraces

Hydric soil status: Hydric

Anita and similar soils

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Leveled strath terraces

Hydric soil status: Hydric

Redtough and similar soils

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Leveled strath terraces

Hydric soil status: Hydric

307—Duric Xerarents, 0 to 1 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Cropland, some of which is used for orchard crops

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 125 to 170 feet (39 to 52 meters)

Mean annual precipitation: 24 to 26 inches (610 to 660 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 250 days

Map Unit Composition

Duric Xerarents clay loam, leveled—70 percent

Minor components—30 percent

Characteristics of Duric Xerarents Clay Loam, Leveled

Slope: 0 to 1 percent

Geomorphic position: Leveled strath terraces

Parent material: Human-transported, clayey alluvium over cemented alluvium derived from igneous and metamorphic rocks

Observed vegetation: Annual grasses and forbs, rice, and almond orchards

Surface features: The surface has been leveled for agricultural production. Textures, depth to a restrictive layer, and horizonation vary greatly because of cuts and fills.

Texture of the surface layer: Clay loam

Percentage of the surface covered by rock fragments: 0 to 10 percent medium, well rounded gravel

Depth to a restrictive feature (duripan): 10 to 40 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: None

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 40 inches

Available water capacity: Very low (about 1.9 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7w-2

Land capability, nonirrigated: 7w-2

Storie index: 11 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

Ap—0 to 2 inches; clay loam

Bt—2 to 12 inches; clay

2Bqm—12 inches; duripan

Minor Components in Map Unit 307

Tuscan and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Leveled strath terraces

Hydric soil status: Hydric

Fallager loam and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Leveled strath terraces

Hydric soil status: Hydric

Anita soils with a gravelly duripan and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Leveled strath terraces

Hydric soil status: Hydric

Clearhayes and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Leveled strath terraces

Hydric soil status: Hydric

Redsluff taxadjunct and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Leveled strath terraces

Hydric soil status: Hydric

Soils in areas of cuts and fills

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Leveled strath terraces

Hydric soil status: Hydric

310—Kimball loam, 1 to 3 percent slopes

Map Unit Setting

General location: Southern Butte County

Major uses: Cropland, livestock grazing, and homesite development

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 85 to 120 feet (26 to 38 meters)

Mean annual precipitation: 21 to 24 inches (533 to 610 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 250 to 255 days

Map Unit Composition

Kimball loam—85 percent
 Minor components—15 percent

Characteristics of Kimball Loam

Slope: 0 to 3 percent
Geomorphic position: Low terraces
Parent material: Fine-loamy alluvium over clayey alluvium over fine-loamy alluvium derived from igneous and metamorphic rocks
Observed vegetation: Annual grasses and forbs and valley oak
Surface feature: Most areas have been leveled for agriculture.
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (abrupt textural change): 17 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 2.8 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 2s-3
Land capability, nonirrigated: 3s-3
Storie index: 58 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile

Ap1—0 to 2 inches; loam
 Ap2—2 to 4 inches; loam
 Ap3—4 to 6 inches; loam
 A—6 to 10 inches; loam
 BA_t—10 to 17 inches; loam
 2B_{tss}—17 to 34 inches; clay
 2B_t—34 to 46 inches; sandy clay loam
 2BC—46 to 64 inches; sandy clay loam

Minor Components in Map Unit 310

Eastbiggs loam and similar soils

Composition: 5 percent
Slope: 0 to 3 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

Galt clay loam and similar soils

Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Small basins and drainageways on low terraces
Hydric soil status: Hydric

Soils that are more than 40 inches deep to a duripan

Composition: 5 percent

Slope: 0 to 3 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

317—Thompsonflat loam, 2 to 15 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing, wildlife habitat, and homesite development
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 160 to 495 feet (49 to 152 meters)
Mean annual precipitation: 22 to 30 inches (559 to 762 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 260 days

Map Unit Composition

Thompsonflat loam—75 percent
 Minor components—25 percent

Characteristics of Thompsonflat Loam

Slope: 2 to 15 percent
Geomorphic position: High terraces
Parent material: Loamy alluvium over clayey alluvium over noncemented or very weakly cemented, sandy and gravelly alluvium derived from igneous and metamorphic rocks
Observed vegetation: Annual grasses and forbs, blue oak, buckbrush, foothill pine, and scattered interior live oak; in some areas, only annual grasses and forbs
Surface feature: Many areas have been leveled for homesite development.
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, well rounded gravel, 0 to 2 percent well rounded cobbles
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)
Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 40 to 81 inches
Available water capacity: Moderate (about 5.7 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 3e-3
Land capability, nonirrigated: 3e-3
Storie index: 83 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile

A—0 to 2 inches; loam
 Bt1—2 to 5 inches; gravelly loam
 Bt2—5 to 12 inches; gravelly loam
 Bt3—12 to 19 inches; gravelly loam

Bt4—19 to 29 inches; gravelly clay loam
 2Bt5—29 to 35 inches; very gravelly clay
 3Bq1—35 to 43 inches; extremely gravelly sandy clay loam
 3Bq2—43 to 80 inches; extremely gravelly sandy clay loam

Minor Components in Map Unit 317

Oroville and similar soils

Composition: 10 percent
Slope: 2 to 15 percent
Geomorphic position: High terraces
Hydric soil status: Not hydric

Loamy soils that are 10 to 20 inches deep to a duripan

Composition: 5 percent
Slope: 2 to 5 percent
Geomorphic position: Mounds and swales on high terraces
Hydric soil status: Not hydric

Fine-loamy soils that are 20 to 40 inches deep to a duripan

Composition: 5 percent
Slope: 2 to 15 percent
Geomorphic position: High terraces
Hydric soil status: Not hydric

Rock outcrop (mudflow or tuff)

Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

Fine textured soils that are 40 to 60 inches deep to densic bedrock

Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Risers on terraces
Hydric soil status: Not hydric

Vertisols with a duripan at a depth of 20 to 40 inches and similar soils

Composition: 1 percent
Slope: 2 to 15 percent
Geomorphic position: Small basins on high terraces
Hydric soil status: Hydric

318—Thompsonflat-Oroville complex, 0 to 9 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing, wildlife habitat, homesite development, and some orchard crops
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 120 to 255 feet (37 to 79 meters)
Mean annual precipitation: 22 to 30 inches (559 to 762 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 260 days

Map Unit Composition

Thompsonflat fine sandy loam—50 percent
 Oroville gravelly fine sandy loam—40 percent
 Minor components—10 percent

Characteristics of Thompsonflat Fine Sandy Loam

Slope: 0 to 9 percent
Geomorphic position: Intermediate terraces
Parent material: Loamy alluvium over clayey alluvium over sandy and gravelly alluvium derived from igneous and metamorphic rocks
Observed vegetation: Annual grasses and forbs and some olive orchards
Surface feature: Some areas have been leveled for homesite development.
Texture of the surface layer: Fine sandy loam
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, well rounded gravel, 0 to 2 percent well rounded cobbles
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)
Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 40 to 81 inches
Available water capacity: Low (about 4.1 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 3e-3
Land capability, nonirrigated: 3e-3
Storie index: 83 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile

A—0 to 3 inches; fine sandy loam
 Bt1—3 to 7 inches; fine sandy loam
 Bt2—7 to 11 inches; sandy clay loam
 Bt3—11 to 15 inches; sandy clay
 2Bt4—15 to 22 inches; gravelly sandy clay
 3Btq1—22 to 35 inches; extremely gravelly sandy clay loam
 3Btq2 to 3Btq5—35 to 80 inches; extremely gravelly coarse sandy loam

Characteristics of Oroville Gravelly Fine Sandy Loam

Slope: 0 to 9 percent
Geomorphic position: Swales on intermediate terraces
Parent material: Loamy and gravelly alluvium over clayey and gravelly alluvium over cemented, loamy and extremely gravelly alluvium derived from igneous and metamorphic rocks
Observed vegetation: Annual grasses and forbs and some olive orchards
Texture of the surface layer: Gravelly fine sandy loam
Percentage of the surface covered by rock fragments: 5 to 20 percent coarse, well rounded gravel
Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: None

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 40 inches

Available water capacity: Low (about 2.7 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 4e-3

Land capability, nonirrigated: 4e-3

Storie index: 7 (revised)

Hydric soil status: Hydric

Hydrologic soil group: C

Typical profile

A—0 to 2 inches; gravelly fine sandy loam

BAt—2 to 6 inches; gravelly sandy loam

Bt1—6 to 13 inches; gravelly clay loam

2Bt2—13 to 17 inches; gravelly clay

2Btg—17 to 23 inches; gravelly sandy clay

3Bqm1 and 3Bqm2—23 to 60 inches; cemented, extremely gravelly duripan

Minor Components in Map Unit 318

Fernandez sandy loam and similar soils

Composition: 5 percent

Slope: 0 to 9 percent

Geomorphic position: Intermediate terraces

Hydric soil status: Not hydric

Loamy soils that are 10 to 20 inches deep to a duripan

Composition: 3 percent

Slope: 0 to 5 percent

Geomorphic position: Swales on intermediate terraces

Hydric soil status: Hydric

Fine-loamy soils that are 40 to 60 inches deep to densic bedrock

Composition: 2 percent

Slope: 0 to 9 percent

Geomorphic position: Intermediate terraces

Hydric soil status: Not hydric

320—Vistarobles-Redding complex, 0 to 9 percent slopes

Map Unit Setting

General location: Southeastern Butte County and northwestern Yuba County

Major uses: Livestock grazing, homesite development, and wildlife habitat

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 85 to 225 feet (26 to 69 meters)

Mean annual precipitation: 20 to 28 inches (508 to 711 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 240 to 260 days

Map Unit Composition

Vistarobles sandy loam—50 percent

Redding loam—40 percent

Minor components—10 percent

Characteristics of Vistarobles Sandy Loam

Slope: 0 to 9 percent

Geomorphic position: Swales on intermediate terraces

Parent material: Loamy alluvium over clayey and gravelly alluvium over cemented, sandy and gravelly alluvium over sandy and cobbly and gravelly alluvium derived from igneous and metamorphic rocks

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Sandy loam

Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, rounded gravel, 0 to 5 percent rounded cobbles

Depth to a restrictive feature (duripan): 10 to 20 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: None

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 20 inches

Available water capacity: Very low (about 1.9 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7e-8

Land capability, nonirrigated: 7e-8

Storie index: 10 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

A1—0 to 5 inches; sandy loam

A2—5 to 10 inches; sandy clay loam

2Bt—10 to 14 inches; gravelly clay

3Bqm—14 to 34 inches; cemented, gravelly duripan

3C—34 to 40 inches; very cobbly sandy loam

Characteristics of Redding Loam

Slope: 0 to 9 percent

Geomorphic position: Mounds on intermediate terraces

Parent material: Loamy alluvium over clayey alluvium over cemented, sandy and gravelly alluvium derived from igneous and metamorphic rocks

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, rounded gravel

Depth to a restrictive feature (duripan): 20 to 40 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 24 to 40 inches

Available water capacity: Moderate (about 5.4 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 3e-3

Land capability, nonirrigated: 3e-3

Storie index: 32 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A1—0 to 4 inches; loam

A2—4 to 11 inches; loam

BA—11 to 24 inches; loam

2Bt—24 to 35 inches; clay

3Bqm—35 to 40 inches; cemented, very gravelly duripan

Minor Components in Map Unit 320

Galt clay and similar soils

Composition: 5 percent

Slope: 0 to 2 percent

Geomorphic position: Small basins on intermediate terraces

Hydric soil status: Hydric

Thermalito sandy loam and similar soils

Composition: 2 percent

Slope: 0 to 9 percent

Geomorphic position: Mounds on intermediate terraces

Hydric soil status: Not hydric

Fernandez sandy loam and similar soils

Composition: 1 percent

Slope: 0 to 9 percent

Geomorphic position: Convex areas on intermediate terraces

Hydric soil status: Not hydric

Loamy soils that are 10 to 20 inches deep to a duripan

Composition: 1 percent

Slope: 0 to 9 percent

Geomorphic position: Swales on intermediate terraces

Hydric soil status: Hydric

Clayey soils that are 10 to 20 inches deep to a duripan

Composition: 1 percent

Slope: 0 to 2 percent

Geomorphic position: Small basins, swales, and vernal pools on intermediate terraces

Hydric soil status: Hydric

321—Durixeralfs-Typic Petraquepts complex, 0 to 2 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Livestock grazing and wildlife habitat

Major land resource area: 18

Landscape: Southern Cascade foothills

Elevation: 150 to 235 feet (46 to 72 meters)

Mean annual precipitation: 25 to 27 inches (635 to 686 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 245 to 250 days

Map Unit Composition

Durixeralfs, fine-loamy, gravelly fine sandy loam—50 percent

Durixeralfs, loamy-skeletal, gravelly fine sandy loam—20 percent

Typic Petraquepts silty clay—15 percent

Minor components—15 percent

Characteristics of Durixeralfs, Fine-Loamy, Gravelly Fine Sandy Loam

Slope: 0 to 2 percent

Geomorphic position: Mounds on strath terraces

Parent material: Loamy and gravelly alluvium over clayey and gravelly alluvium over cemented, very gravelly alluvium derived from basalt

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Gravelly fine sandy loam

Percentage of the surface covered by rock fragments: 0 to 20 percent medium, subrounded gravel

Depth to a restrictive feature: 20 to 40 inches to a duripan; 32 to 64 inches to paralithic bedrock

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 20 to 40 inches

Available water capacity: Low (about 3.1 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 4s-8

Land capability, nonirrigated: 4s-8

Storie index: 35 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A—0 to 1 inch; gravelly fine sandy loam

Bt1—1 to 5 inches; gravelly fine sandy loam

Bt2—5 to 10 inches; gravelly loam

Bt3—10 to 18 inches; gravelly loam

Bt4—18 to 24 inches; very gravelly clay loam

2Bt5—24 to 27 inches; very gravelly sandy clay
 3Bqm—27 inches; cemented, very gravelly duripan

Characteristics of Durixeralfs, Loamy-Skeletal, Gravelly Fine Sandy Loam

Slope: 0 to 2 percent

Geomorphic position: Swales on strath terraces

Parent material: Loamy and gravelly alluvium over cemented, very gravelly alluvium derived from basalt

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Gravelly fine sandy loam

Percentage of the surface covered by rock fragments: 0 to 20 percent coarse, well rounded gravel, 2 to 5 percent well rounded cobbles

Depth to a restrictive feature: 9 to 20 inches to a duripan; 21 to 44 inches to paralithic bedrock

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 20 inches

Available water capacity: Very low (about 1.0 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7w-8

Land capability, nonirrigated: 7w-8

Storie index: 13 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

A—0 to 1 inch; gravelly fine sandy loam

Bt1—1 to 4 inches; gravelly loam

Bt2—4 to 9 inches; very cobbly clay loam

2Bqm—9 inches; cemented, very gravelly duripan

Characteristics of Typic Petraquepts Silty Clay

Slope: 0 to 1 percent

Geomorphic position: Swales on strath terraces

Parent material: Clayey and gravelly alluvium over cemented, very gravelly alluvium derived from basalt

Observed vegetation: Annual grasses and forbs

Surface feature: Polygonal cracks open during dry periods.

Texture of the surface layer: Silty clay

Percentage of the surface covered by rock fragments: 5 to 10 percent coarse, well rounded gravel, 0 to 5 percent well rounded cobbles

Depth to a restrictive feature: 10 to 20 inches to a duripan; 22 to 44 inches to paralithic bedrock

Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 20 inches

Available water capacity: Very low (about 1.3 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7w-3

Land capability, nonirrigated: 7w-3

Storie index: 12 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

A—0 to 3 inches; silty clay

Bss—3 to 11 inches; gravelly silty clay

2Bqm—11 inches; very gravelly duripan

Minor Components in Map Unit 321

Soils that are frequently ponded for long periods

Composition: 8 percent

Slope: 0 to 1 percent

Geomorphic position: Vernal pools on strath terraces

Hydric soil status: Hydric

Durixeralfs with 20 to 40 percent cobbles on the surface and similar soils

Composition: 3 percent

Slope: 0 to 1 percent

Geomorphic position: Swales on strath terraces

Hydric soil status: Hydric

Soils in cobble-lined channels

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Ephemeral channels on strath terraces

Hydric soil status: Hydric

Vertisols with a duripan at a depth of 20 to 40 inches and similar soils

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Basins on strath terraces

Hydric soil status: Hydric

330—Wilsoncreek-Trainer loams, 0 to 2 percent slopes, occasionally flooded

Map Unit Setting

General location: South-central Butte County

Major uses: Cropland, pasture, and wildlife habitat

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 75 to 215 feet (23 to 67 meters)

Mean annual precipitation: 20 to 24 inches (508 to 610 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 245 to 250 days

Map Unit Composition

Wilsoncreek loam, occasionally flooded—60 percent

Trainer loam, occasionally flooded—25 percent

Minor components—15 percent

Characteristics of Wilsoncreek Loam, Occasionally Flooded

Slope: 0 to 2 percent

Geomorphic position: Bars on flood plains

Parent material: Fine-silty alluvium derived from igneous and metamorphic rocks

Observed vegetation: Annual grasses and forbs, valley oak, and rice

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: None

Restrictive feature: None identified

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Occasional

Annual ponding frequency: None

Depth to a water table (zone of saturation): 36 to 60 inches

Available water capacity: High (about 9.5 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Very low

Interpretive groups

Land capability, irrigated: 2w-2

Land capability, nonirrigated: 3w-2

Storie index: 79 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Ap—0 to 7 inches; loam

A1—7 to 14 inches; loam

A2—14 to 25 inches; loam

A3—25 to 34 inches; loam

Bw1—34 to 44 inches; loam

Bw2—44 to 60 inches; loam

Characteristics of Trainer Loam, Occasionally Flooded

Slope: 0 to 1 percent

Geomorphic position: Stream terraces

Parent material: Fine-loamy alluvium derived from igneous and metamorphic rocks

Observed vegetation: Annual grasses and forbs, rice, and scattered willows

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: None

Restrictive feature: None identified

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Occasional

Annual ponding frequency: None

Depth to a water table (zone of saturation): 36 to 60 inches

Available water capacity: Very high (about 10.8 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Low

*Interpretive groups**Land capability, irrigated: 2w-2**Land capability, nonirrigated: 3w-2**Storie index: 69 (revised)**Hydric soil status: Not hydric**Hydrologic soil group: B**Typical profile*

Ap—0 to 7 inches; loam

A—7 to 13 inches; loam

Bt1—13 to 26 inches; loam

Bt2—26 to 36 inches; loam

C1—36 to 46 inches; fine sandy loam

C2—46 to 61 inches; sandy loam

Minor Components in Map Unit 330**Galt clay loam, ponded, and similar soils***Composition: 4 percent**Slope: 0 to 2 percent**Geomorphic position: Small basins on low terraces**Hydric soil status: Hydric***Eastbiggs loam and similar soils***Composition: 4 percent**Slope: 0 to 2 percent**Geomorphic position: Low terraces**Hydric soil status: Not hydric***Columbia and similar soils***Composition: 3 percent**Slope: 0 to 2 percent**Geomorphic position: Flood plains**Hydric soil status: Not hydric***Kimball and similar soils***Composition: 2 percent**Slope: 0 to 2 percent**Geomorphic position: Low terraces**Hydric soil status: Not hydric***Soils that are 10 to 20 inches deep to a duripan***Composition: 2 percent**Slope: 0 to 2 percent**Geomorphic position: Low terraces**Hydric soil status: Not hydric***331—Thompsonflat loam, 15 to 30 percent slopes*****Map Unit Setting****General location: Central Butte County**Major uses: Livestock grazing, wildlife habitat, and homesite development**Major land resource area: 17**Landscape: Sacramento Valley**Elevation: 255 to 495 feet (79 to 152 meters)**Mean annual precipitation: 22 to 30 inches (559 to 762 millimeters)*

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 250 to 260 days

Map Unit Composition

Thompsonflat loam—85 percent

Minor components—15 percent

Characteristics of Thompsonflat Loam

Slope: 15 to 30 percent

Geomorphic position: High terraces

Parent material: Loamy alluvium over clayey alluvium over noncemented or very weakly cemented, sandy and gravelly alluvium derived from igneous and metamorphic rocks

Observed vegetation: Annual grasses and forbs, blue oak, buckbrush, foothill pine, and scattered interior live oak

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, well rounded gravel, 0 to 2 percent well rounded cobbles

Restrictive feature: None identified

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 40 to 81 inches

Available water capacity: Moderate (about 5.7 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 4e-3

Land capability, nonirrigated: 4e-3

Storie index: 69 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A—0 to 2 inches; loam

Bt1—2 to 5 inches; gravelly loam

Bt2—5 to 12 inches; gravelly loam

Bt3—12 to 19 inches; gravelly loam

Bt4—19 to 29 inches; gravelly clay loam

2Bt5—29 to 35 inches; very gravelly clay

3Bq1 and 3Bq2—35 to 80 inches; extremely gravelly sandy clay loam

Minor Components in Map Unit 331

Oroville and similar soils

Composition: 9 percent

Slope: 15 to 30 percent

Geomorphic position: High terraces

Hydric soil status: Not hydric

Escarpments

Composition: 3 percent

Slope: 30 to 150 percent

Geomorphic position: Risers on high terraces

Hydric soil status: Not hydric

Fine-loamy soils that are 20 to 40 inches deep to a duripan

Composition: 3 percent

Slope: 15 to 30 percent

Geomorphic position: High terraces

Hydric soil status: Not hydric

335—Galt clay loam, 0 to 1 percent slopes

Map Unit Setting

General location: Southern Butte County

Major uses: Cropland and wildlife habitat

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 75 to 85 feet (24 to 27 meters)

Mean annual precipitation: 21 inches (533 millimeters)

Mean annual air temperature: 61 degrees F (16 degrees C)

Frost-free period: 245 days

Map Unit Composition

Galt clay loam—85 percent

Minor components—15 percent

Characteristics of Galt Clay Loam

Slope: 0 to 2 percent

Geomorphic position: Basins on low terraces

Parent material: Clayey alluvium over cemented, loamy alluvium derived from igneous and metamorphic rocks

Observed vegetation: Rice and annual grasses and forbs

Surface features: The surface has been leveled for agriculture. Polygonal cracks open during dry periods.

Texture of the surface layer: Clay loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (duripan): 20 to 40 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: None

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 40 inches

Available water capacity: Moderate (about 5.2 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Storie index: 18 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

A—0 to 6 inches; clay loam

Bss1—6 to 20 inches; clay loam

Bss2—20 to 27 inches; clay

Bss3—27 to 30 inches; clay

2Bqm—30 inches; duripan

Minor Components in Map Unit 335

Eastbiggs loam and similar soils

Composition: 5 percent

Slope: 0 to 2 percent

Geomorphic position: Low terraces

Hydric soil status: Not hydric

Esquon clay and similar soils

Composition: 5 percent

Slope: 0 to 2 percent

Geomorphic position: Basins on low terraces

Hydric soil status: Hydric

Wilsoncreek loam and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Flood plains

Hydric soil status: Not hydric

336—Galt clay, 0 to 1 percent slopes

Map Unit Setting

General location: Northwestern Butte County

Major uses: Nonirrigated crops, livestock grazing, orchard crops, and commercial development

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 135 to 295 feet (42 to 91 meters)

Mean annual precipitation: 22 to 25 inches (559 to 635 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 250 days

Map Unit Composition

Galt clay—90 percent

Minor components—10 percent

Characteristics of Galt Clay

Slope: 0 to 1 percent

Geomorphic position: Basins on terraces

Parent material: Clayey alluvium over cemented, loamy alluvium derived from volcanic rocks

Observed vegetation: Annual grasses and forbs, wheat, alfalfa, and prune and almond orchards

Surface features: In a few areas the surface has been leveled for agriculture. Polygonal cracks open during dry periods.

Texture of the surface layer: Clay

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (duripan): 20 to 40 inches

Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: Rare

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 40 inches

Available water capacity: Low (about 4.8 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Storie index: 10 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

A1—0 to 3 inches; clay

A2—3 to 13 inches; clay

Bss—13 to 29 inches; clay

Bkss—29 to 32 inches; clay

2Bkqm—32 to 39 inches; duripan

Minor Components in Map Unit 336

Anita clay and similar soils

Composition: 3 percent

Slope: 0 to 1 percent

Geomorphic position: Basins on terraces

Hydric soil status: Hydric

Fine-loamy soils that are 20 to 40 inches deep to a duripan

Composition: 3 percent

Slope: 0 to 1 percent

Geomorphic position: Terraces

Hydric soil status: Not hydric

Bosquejo clay and similar soils

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Interfan basins

Hydric soil status: Not hydric

Conejo clay loam and similar soils

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Alluvial fans

Hydric soil status: Not hydric

337—Galt clay loam, 0 to 1 percent slopes, leveled

Map Unit Setting

General location: Northwestern and southern Butte County

Major uses: Orchard crops

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 85 to 180 feet (27 to 56 meters)

Mean annual precipitation: 21 to 23 inches (533 to 584 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 245 to 250 days

Map Unit Composition

Galt clay loam—85 percent

Minor components—15 percent

Characteristics of Galt Clay Loam

Slope: 0 to 2 percent

Geomorphic position: Flood basins

Parent material: Clayey alluvium over cemented, loamy alluvium derived from igneous and metamorphic rocks

Observed vegetation: Almond and prune orchards and annual grasses and forbs

Surface features: The surface has been leveled for agriculture. Polygonal cracks open during dry periods.

Texture of the surface layer: Clay loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (duripan): 20 to 40 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: None

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 40 inches

Available water capacity: Moderate (about 5.2 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Storie index: 18 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

A—0 to 6 inches; clay loam

Bss1—6 to 20 inches; clay loam

Bss2—20 to 27 inches; clay

Bss3—27 to 30 inches; clay

2Bqm—30 inches; duripan

Minor Components in Map Unit 337

Esquon clay and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Hydric soil status: Hydric

Eastbiggs loam and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Low terraces

Hydric soil status: Not hydric

Boga loam and similar soils

Composition: 3 percent

Slope: 0 to 1 percent

Geomorphic position: Low terraces

Hydric soil status: Not hydric

Loemstone loam and similar soils

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Low terraces

Hydric soil status: Not hydric

338—Oxyaquic Xerofluvents silt loam, 0 to 1 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Orchard crops and nonirrigated crops

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 120 to 200 feet (38 to 61 meters)

Mean annual precipitation: 21 to 26 inches (533 to 660 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 245 to 250 days

Map Unit Composition

Oxyaquic Xerofluvents silt loam—90 percent

Minor components—10 percent

Characteristics of Oxyaquic Xerofluvents Silt Loam

Slope: 0 to 1 percent

Geomorphic position: Stream terraces

Parent material: Silty and coarse-loamy alluvium that is generated from hydraulic mines and is derived from sedimentary rocks

Observed vegetation: Almond orchards and wheat

Surface features: The natural soil surface has been buried by hydraulic-mine sediment and leveled for agriculture.

Texture of the surface layer: Silt loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (abrupt textural change): 40 to 80 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Hydrology has been altered by the deposition of hydraulic-mine sediment.

Annual flooding frequency: Rare

Annual ponding frequency: Rare

Depth to a water table (zone of saturation): 36 to 80 inches

Available water capacity: Moderate (about 7.0 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Negligible

Interpretive groups

Land capability, irrigated: 3w-2

Land capability, nonirrigated: 3w-2

Storie index: 70 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Ap—0 to 6 inches; silt loam

C1—6 to 20 inches; silt loam

C2—20 to 32 inches; loamy sand

C3—32 to 36 inches; loamy fine sand

C4—36 to 46 inches; coarse sand

C5—46 to 50 inches; silt loam

C6—50 to 55 inches; loamy fine sand

C7—55 to 60 inches; silt loam

Minor Components in Map Unit 338

Soils that are less than 10 inches deep to a duripan

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Terraces

Hydric soil status: Not hydric

Alluvial soils on strath terraces

Composition: 3 percent

Slope: 0 to 1 percent

Geomorphic position: Strath terraces

Hydric soil status: Not hydric

Soils that are less than 40 inches deep to buried basin clay

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Areas of hydraulic-mine sediment on stream terraces

Hydric soil status: Not hydric

339—Oxyaquic Xerofluvents sandy loam, 0 to 1 percent slopes, frequently flooded

Map Unit Setting

General location: West-central Butte County

Major uses: Wildlife habitat, borrow pits, and flood retention

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 95 to 150 feet (29 to 47 meters)

Mean annual precipitation: 21 to 26 inches (533 to 660 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 245 to 250 days

Map Unit Composition

Oxyaquic Xerofluvents sandy loam, frequently flooded—90 percent
Minor components—10 percent

Characteristics of Oxyaquic Xerofluvents Sandy Loam, Frequently Flooded

Slope: 0 to 1 percent

Geomorphic position: Flood plains

Parent material: Silty and coarse-loamy alluvium that is generated from hydraulic mines and is derived from sedimentary rocks

Observed vegetation: Willows, alder, Oregon ash, California sycamore, valley oak, and annual grasses and forbs

Surface feature: Hydraulic-mine sediment has been deposited within the confines of artificial levees.

Texture of the surface layer: Sandy loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (abrupt textural change): 40 to 80 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Hydrology has been altered by artificial drainage and by a canal constructed to protect farmland and to carry hydraulic-mine sediment from the Cherokee and Forks of Butte Gold Mines.

Annual flooding frequency: Frequent

Annual ponding frequency: Rare

Depth to a water table (zone of saturation): 36 to 80 inches

Available water capacity: Moderate (about 6.3 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Very low

Interpretive groups

Land capability, irrigated: 4w-2

Land capability, nonirrigated: 4w-2

Storie index: 56 (revised)

Hydric soil status: Hydric

Hydrologic soil group: B

Typical profile

A—0 to 8 inches; sandy loam

C1—8 to 12 inches; sandy loam

C2—12 to 16 inches; fine sandy loam

C3—16 to 60 inches; stratified sandy loam to gravelly sand

Minor Components in Map Unit 339

Soils that are less than 20 inches deep to buried basin clay

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Flood plains

Hydric soil status: Hydric

Soils that are less than 40 inches deep to a duripan

Composition: 2 percent

Slope: 0 to 1 percent
Geomorphic position: Flood plains
Hydric soil status: Hydric

Riverwash

Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Gravel bars in channels
Hydric soil status: Hydric

Typic Xerofluvents and similar soils

Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Flood plains
Hydric soil status: Hydric

Near Butte Creek, soils that are occasionally flooded

Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Flood plains
Hydric soil status: Not hydric

**340—Rock outcrop-Thermalrocks-Campbellhills complex,
 2 to 15 percent slopes**

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing, recreation, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 150 to 1,580 feet (46 to 482 meters)
Mean annual precipitation: 25 to 35 inches (635 to 889 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 260 days

Map Unit Composition

Rock outcrop (Lovejoy basalt)—35 percent
 Thermalrocks very gravelly loam—25 percent
 Campbellhills gravelly loam—20 percent
 Minor components—20 percent

Characteristics of Rock Outcrop (Lovejoy Basalt)

Slope: 2 to 15 percent
Geomorphic position: The top of basalt plateaus
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Characteristics of Thermalrocks Very Gravelly Loam

Slope: 2 to 15 percent
Geomorphic position: The top of basalt plateaus
Parent material: Gravelly residuum weathered from basalt
Observed vegetation: Annual grasses and forbs, mosses, and lichens
Texture of the surface layer: Very gravelly loam

Percentage of the surface covered by rock fragments: 10 to 60 percent medium, angular gravel, 2 to 50 percent angular cobbles

Depth to a restrictive feature (lithic bedrock): 5 to 10 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 0.4 inch)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 1 inch; very gravelly loam

Bt—1 to 5 inches; very gravelly loam

R—5 inches; bedrock

Characteristics of Campbellhills Gravelly Loam

Slope: 2 to 15 percent

Geomorphic position: Fractures on the top of basalt plateaus

Parent material: Gravelly residuum weathered from basalt

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 10 to 25 percent medium, subangular gravel, 0 to 30 percent subangular cobbles

Depth to a restrictive feature (lithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 3 to 60 inches

Available water capacity: Low (about 4.1 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 6e-4

Land capability, nonirrigated: 6e-4

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A—0 to 2 inches; gravelly loam

Bt1—2 to 7 inches; gravelly loam

Bt2—7 to 17 inches; very gravelly clay loam

Bt3—17 to 29 inches; very gravelly clay loam

Bt4—29 to 39 inches; extremely gravelly clay loam

Bt5—39 to 50 inches; extremely gravelly clay loam

R—50 inches; bedrock

Minor Components in Map Unit 340

Loamy-skeletal soils that are 20 to 40 inches deep to bedrock

Composition: 7 percent

Slope: 2 to 15 percent

Geomorphic position: The top of basalt plateaus

Hydric soil status: Not hydric

Beatsonhollow and similar soils

Composition: 5 percent

Slope: 2 to 15 percent

Geomorphic position: Swales on the top of basalt plateaus

Hydric soil status: Hydric

Escarpments

Composition: 3 percent

Slope: 70 to 200 percent

Geomorphic position: Escarpments on basalt plateaus

Hydric soil status: Not hydric

Cherorable and similar soils

Composition: 3 percent

Slope: 2 to 5 percent

Geomorphic position: Draws on the top of basalt plateaus

Hydric soil status: Not hydric

Soils that are in draws and have slopes of 15 to 50 percent

Composition: 2 percent

Slope: 15 to 50 percent

Geomorphic position: Draws

Hydric soil status: Not hydric

341—Eley-Beatsonhollow-Campbellhills-Rock outcrop complex, 2 to 5 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Livestock grazing, recreation, wildlife habitat, and watershed

Major land resource area: 18

Landscape: Northern Sierra Nevada foothills

Elevation: 380 to 1,440 feet (116 to 439 meters)

Mean annual precipitation: 27 to 35 inches (686 to 889 millimeters)

Mean annual air temperature: 59 to 61 degrees F (15 to 16 degrees C)

Frost-free period: 250 to 260 days

Map Unit Composition

Eley loam—25 percent

Beatsonhollow gravelly loam—25 percent

Campbellhills gravelly loam—20 percent

Rock outcrop (Lovejoy basalt)—20 percent

Minor components—10 percent

Characteristics of Eley Loam

Slope: 2 to 5 percent

Geomorphic position: Mounds on the top of basalt plateaus

Parent material: Loamy residuum weathered from basalt

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: 5 to 15 percent medium, subangular gravel, 0 to 5 percent subangular cobbles

Depth to a restrictive feature (lithic bedrock): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 15 to 40 inches

Available water capacity: Low (about 4.7 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 6e-8

Land capability, nonirrigated: 6e-8

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A—0 to 3 inches; loam

BAt—3 to 8 inches; gravelly loam

Bt1—8 to 17 inches; cobbly loam

Bt2—17 to 25 inches; cobbly loam

Bt3—25 to 32 inches; very cobbly loam

Bt4—32 to 38 inches; very cobbly loam

R—38 inches; bedrock

Characteristics of Beatsonhollow Gravelly Loam

Slope: 2 to 5 percent

Geomorphic position: Swales on the top of basalt plateaus

Parent material: Gravelly residuum weathered from basalt

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 10 to 20 percent medium, angular gravel, 10 to 15 percent angular cobbles

Depth to a restrictive feature (lithic bedrock): 10 to 20 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 20 inches

Available water capacity: Very low (about 1.9 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7w-2

Land capability, nonirrigated: 7w-2

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

- A1—0 to 3 inches; gravelly loam
- A2—3 to 10 inches; cobbly loam
- Bt—10 to 17 inches; very cobbly loam
- R—17 inches; bedrock

Characteristics of Campbellhills Gravelly Loam

Slope: 2 to 5 percent

Geomorphic position: Fractures on the top of basalt plateaus

Parent material: Gravelly residuum weathered from basalt

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 10 to 25 percent medium, subangular gravel, 0 to 30 percent subangular cobbles

Depth to a restrictive feature (lithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 3 to 60 inches

Available water capacity: Low (about 4.1 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 6e-4

Land capability, nonirrigated: 6e-4

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

- A—0 to 2 inches; gravelly loam
- Bt1—2 to 7 inches; gravelly loam
- Bt2—7 to 17 inches; very gravelly clay loam
- Bt3—17 to 29 inches; very gravelly clay loam
- Bt4—29 to 39 inches; extremely gravelly clay loam
- Bt5—39 to 50 inches; extremely gravelly clay loam
- R—50 inches; bedrock

Characteristics of Rock Outcrop (Lovejoy Basalt)

Slope: 2 to 5 percent

Geomorphic position: The top of basalt plateaus

Surface runoff (bare conditions): Very high

Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 341**Thermalrocks and similar soils**

Composition: 4 percent

Slope: 2 to 5 percent

Geomorphic position: The top of basalt plateaus

Hydric soil status: Not hydric

Soils that are frequently ponded for long periods

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Vernal pools on the top of basalt plateaus

Hydric soil status: Hydric

Fine-loamy soils that are 20 to 40 inches deep to lithic bedrock

Composition: 2 percent

Slope: 2 to 5 percent

Geomorphic position: Swales on the top of basalt plateaus

Hydric soil status: Not hydric

Loamy-skeletal soils that are 20 to 40 inches deep to bedrock

Composition: 2 percent

Slope: 2 to 5 percent

Geomorphic position: Mounds on the top of basalt plateaus

Hydric soil status: Not hydric

342—Thermalrocks-Beatsonhollow taxadjunct-Rock outcrop complex, 2 to 30 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Livestock grazing, wildlife habitat, and watershed

Major land resource area: 18

Landscape: Northern Sierra Nevada foothills

Elevation: 150 to 495 feet (46 to 152 meters)

Mean annual precipitation: 25 to 28 inches (635 to 711 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 250 to 260 days

Map Unit Composition

Thermalrocks very gravelly loam—40 percent

Beatsonhollow taxadjunct fine sandy loam—35 percent

Rock outcrop (Lovejoy basalt)—15 percent

Minor components—10 percent

Characteristics of Thermalrocks Very Gravelly Loam

Slope: 2 to 30 percent

Geomorphic position: Swales on the top and side slopes of the eroded remnants of basalt plateaus

Parent material: Gravelly residuum weathered from basalt

Observed vegetation: Annual grasses and forbs, mosses, and lichens

Texture of the surface layer: Very gravelly loam

Percentage of the surface covered by rock fragments: 0 to 10 percent medium, angular gravel, 0 to 25 percent angular cobbles, 0 to 10 percent angular stones

Depth to a restrictive feature (lithic bedrock): 5 to 10 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 0.4 inch)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very high

*Interpretive groups**Land capability, irrigated:* 8*Land capability, nonirrigated:* 8*Hydric soil status:* Not hydric*Hydrologic soil group:* D*Typical profile*

A—0 to 1 inch; very gravelly loam

Bt—1 to 5 inches; very gravelly loam

R—5 inches; bedrock

Characteristics of Beatsonhollow Taxadjunct Fine Sandy Loam*Slope:* 2 to 30 percent*Geomorphic position:* Mounds on the top and side slopes of the eroded remnants of basalt plateaus*Parent material:* Loamy and gravelly residuum weathered from basalt*Observed vegetation:* Annual grasses and forbs*Texture of the surface layer:* Fine sandy loam*Percentage of the surface covered by rock fragments:* 0 to 10 percent coarse, subangular gravel, 0 to 15 percent subangular cobbles, 0 to 5 percent subangular stones*Depth to a restrictive feature (lithic bedrock):* 10 to 20 inches*Shrink-swell potential:* Low (LEP of less than 3)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* None*Annual ponding frequency:* None*Depth to a water table (zone of saturation):* 5 to 20 inches*Available water capacity:* Very low (about 2.4 inches)*Natural drainage class:* Somewhat poorly drained*Surface runoff (bare conditions):* Very high*Interpretive groups**Land capability, irrigated:* 6e-8*Land capability, nonirrigated:* 6e-8*Hydric soil status:* Not hydric*Hydrologic soil group:* D*Typical profile*

A—0 to 1 inch; fine sandy loam

Bt1—1 to 6 inches; gravelly loam

Bt2—6 to 10 inches; gravelly loam

Bt3—10 to 15 inches; gravelly loam

Bt4—15 to 18 inches; very gravelly loam

R—18 inches; bedrock

Characteristics of Rock Outcrop (Lovejoy Basalt)*Slope:* 2 to 30 percent*Geomorphic position:* The top and side slopes of the eroded remnants of basalt plateaus*Surface runoff (bare conditions):* Very high*Definition:* Rock outcrop consists of exposures of bedrock with no soil.**Minor Components in Map Unit 342****Beatsonhollow and similar soils***Composition:* 4 percent

Slope: 2 to 30 percent

Geomorphic position: Swales on the top and side slopes of the eroded remnants of basalt plateaus

Hydric soil status: Hydric

Campbellhills gravelly loam and similar soils

Composition: 3 percent

Slope: 2 to 30 percent

Geomorphic position: Fractures on the top of eroded basalt plateaus

Hydric soil status: Not hydric

Elsey and similar soils

Composition: 2 percent

Slope: 2 to 30 percent

Geomorphic position: Mounds on the top and side slopes of the eroded remnants of basalt plateaus

Hydric soil status: Not hydric

Soils that are frequently ponded for long periods

Composition: 1 percent

Slope: 0 to 2 percent

Geomorphic position: Vernal pools on the top of the eroded remnants of basalt plateaus

Hydric soil status: Hydric

343—Coalcanyon-Coonhollow complex, 5 to 15 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Livestock grazing, wildlife habitat, and watershed

Major land resource area: 18

Landscape: Northern Sierra Nevada foothills

Elevation: 200 to 1,000 feet (61 to 305 meters)

Mean annual precipitation: 25 to 35 inches (635 to 889 millimeters)

Mean annual air temperature: 59 to 63 degrees F (15 to 17 degrees C)

Frost-free period: 250 to 260 days

Map Unit Composition

Coalcanyon very cobbly loam—50 percent

Coonhollow gravelly loam—35 percent

Minor components—15 percent

Characteristics of Coalcanyon Very Cobbly Loam

Slope: 5 to 15 percent

Geomorphic position: Benches and side slopes on basalt plateaus

Parent material: Stony and gravelly colluvium derived from basalt

Observed vegetation: Interior live oak, blue oak, valley oak, foothill pine, whiteleaf manzanita, and annual grasses and forbs

Texture of the surface layer: Very cobbly loam

Percentage of the surface covered by rock fragments: 10 to 60 percent medium, angular gravel, 5 to 65 percent angular cobbles, 0 to 25 percent angular stones, 0 to 20 percent angular boulders

Restrictive feature: None identified

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.2 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 4s-7

Land capability, nonirrigated: 4s-7

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 2 inches; very cobbly loam

BAt—2 to 11 inches; very cobbly loam

Bt1—11 to 27 inches; very cobbly loam

Bt2—27 to 43 inches; very cobbly loam

Bt3—43 to 65 inches; extremely cobbly clay loam

Characteristics of Coonhollow Gravelly Loam

Slope: 5 to 15 percent

Geomorphic position: Benches and side slopes on basalt plateaus

Parent material: Stony and gravelly colluvium derived from basalt

Observed vegetation: Interior live oak, blue oak, valley oak, foothill pine, whiteleaf manzanita, and annual grasses and forbs

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 10 to 60 percent medium, angular gravel, 5 to 65 percent angular cobbles, 0 to 25 percent angular stones, 0 to 20 percent angular boulders

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 3.2 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 4s-7

Land capability, nonirrigated: 4s-7

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 3 inches; gravelly loam

ABt—3 to 11 inches; very cobbly loam

Bt1—11 to 22 inches; very cobbly loam

Bt2—22 to 32 inches; extremely cobbly loam

Bt3—32 to 45 inches; extremely cobbly clay loam

Cr—45 to 50 inches; bedrock

R—50 inches; bedrock

Minor Components in Map Unit 343

Rock outcrop

Composition: 4 percent

Slope: 5 to 15 percent

Geomorphic position: Benches and side slopes on basalt plateaus

Hydric soil status: Not hydric

Soils that are less than 60 inches deep to sediments of the lone Formation

Composition: 4 percent

Slope: 5 to 15 percent

Geomorphic position: Benches and side slopes on basalt plateaus

Hydric soil status: Not hydric

Elsey and similar soils

Composition: 4 percent

Slope: 5 to 15 percent

Geomorphic position: Benches and side slopes on basalt plateaus

Hydric soil status: Not hydric

Seeps

Composition: 2 percent

Slope: 5 to 15 percent

Geomorphic position: Benches and side slopes on basalt plateaus

Hydric soil status: Hydric

Cherokeespring and similar soils

Composition: 1 percent

Slope: 5 to 15 percent

Geomorphic position: Benches and side slopes on basalt plateaus

Hydric soil status: Not hydric

344—Coalcanyon-Coonhollow-Rock outcrop complex, 15 to 30 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Livestock grazing, wildlife habitat, and watershed

Major land resource area: 18

Landscape: Northern Sierra Nevada foothills

Elevation: 200 to 1,000 feet (61 to 305 meters)

Mean annual precipitation: 25 to 35 inches (635 to 889 millimeters)

Mean annual air temperature: 59 to 63 degrees F (15 to 17 degrees C)

Frost-free period: 250 to 260 days

Map Unit Composition

Coalcanyon very cobbly loam—45 percent

Coonhollow gravelly loam—30 percent

Rock outcrop (Lovejoy basalt)—15 percent

Minor components—10 percent

Characteristics of Coalcanyon Very Cobbly Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes on basalt plateaus

Parent material: Stony and gravelly colluvium derived from basalt

Observed vegetation: Interior live oak, blue oak, valley oak, foothill pine, whiteleaf manzanita, and annual grasses and forbs

Texture of the surface layer: Very cobbly loam

Percentage of the surface covered by rock fragments: 10 to 60 percent medium, angular gravel, 5 to 65 percent angular cobbles, 0 to 25 percent angular stones, 0 to 20 percent angular boulders

Restrictive feature: None identified

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.2 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 4s-7

Land capability, nonirrigated: 4s-7

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 2 inches; very cobbly loam

BAt—2 to 11 inches; very cobbly loam

Bt1—11 to 27 inches; very cobbly loam

Bt2—27 to 43 inches; very cobbly loam

Bt3—43 to 65 inches; extremely cobbly clay loam

Characteristics of Coonhollow Gravelly Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes on basalt plateaus

Parent material: Stony and gravelly colluvium derived from basalt

Observed vegetation: Interior live oak, blue oak, valley oak, foothill pine, whiteleaf manzanita, and annual grasses and forbs

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 10 to 60 percent medium, angular gravel, 5 to 65 percent angular cobbles, 0 to 25 percent angular stones, 0 to 20 percent angular boulders

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 3.2 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 4s-7

Land capability, nonirrigated: 4s-7

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 3 inches; gravelly loam

ABt—3 to 11 inches; very cobbly loam

Bt1—11 to 22 inches; very cobbly loam

Bt2—22 to 32 inches; extremely cobbly loam

Bt3—32 to 45 inches; extremely cobbly clay loam

Cr—45 to 50 inches; bedrock

R—50 inches; bedrock

Characteristics of Rock Outcrop (Lovejoy Basalt)

Slope: 15 to 30 percent

Geomorphic position: Side slopes on basalt plateaus

Surface runoff (bare conditions): Very high

Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 344

Soils that are less than 60 inches deep to sediments of the lone Formation

Composition: 5 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on basalt plateaus

Hydric soil status: Not hydric

Talus

Composition: 3 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on basalt plateaus

Hydric soil status: Not hydric

Elsey and similar soils

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on basalt plateaus

Hydric soil status: Not hydric

346—Cherorable-Elsey complex, 2 to 15 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Livestock grazing, recreation, wildlife habitat, and watershed

Major land resource area: 18

Landscape: Northern Sierra Nevada foothills

Elevation: 160 to 1,540 feet (50 to 470 meters)

Mean annual precipitation: 25 to 35 inches (635 to 889 millimeters)

Mean annual air temperature: 59 to 63 degrees F (15 to 17 degrees C)

Frost-free period: 250 to 260 days

Map Unit Composition

Cherorable loam—50 percent

Elsey loam—35 percent

Minor components—15 percent

Characteristics of Cherotable Loam

Slope: 2 to 15 percent

Geomorphic position: The top of basalt plateaus

Parent material: Loamy alluvium derived from basalt

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: 0 to 15 percent medium, subrounded gravel

Depth to a restrictive feature (lithic bedrock): 40 to 60 inches

Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 20 to 60 inches

Available water capacity: Moderate (about 6.2 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A—0 to 2 inches; loam

Bt1—2 to 8 inches; loam

Bt2—8 to 14 inches; clay loam

Bt3—14 to 21 inches; gravelly clay loam

Bt4—21 to 30 inches; cobbly clay loam

Bt5—30 to 45 inches; very cobbly clay

R—45 inches; bedrock

Characteristics of Elsey Loam

Slope: 2 to 15 percent

Geomorphic position: Mounds on the top of basalt plateaus

Parent material: Loamy residuum weathered from basalt

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: 5 to 15 percent medium, subangular gravel, 0 to 5 percent subangular cobbles

Depth to a restrictive feature (lithic bedrock): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 15 to 40 inches

Available water capacity: Low (about 4.7 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 6e-8

Land capability, nonirrigated: 6e-8

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A—0 to 3 inches; loam

BAt—3 to 8 inches; gravelly loam

Bt1—8 to 17 inches; cobbly loam

Bt2—17 to 25 inches; cobbly loam

Bt3—25 to 32 inches; very cobbly loam

Bt4—32 to 38 inches; very cobbly loam

R—38 inches; bedrock

Minor Components in Map Unit 346

Rock outcrop

Composition: 5 percent

Slope: 2 to 15 percent

Geomorphic position: The top of basalt plateaus

Hydric soil status: Not hydric

Thermalrocks and similar soils

Composition: 5 percent

Slope: 2 to 15 percent

Geomorphic position: The top of basalt plateaus

Hydric soil status: Not hydric

Campbellhills gravelly loam and similar soils

Composition: 3 percent

Slope: 2 to 15 percent

Geomorphic position: The top of basalt plateaus

Hydric soil status: Not hydric

Seeps

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: The top of basalt plateaus

Hydric soil status: Hydric

347—Haplic Palexeralfs loam, 0 to 5 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Livestock grazing, wildlife habitat, and watershed

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 150 to 1,095 feet (46 to 335 meters)

Mean annual precipitation: 25 to 30 inches (635 to 762 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 250 to 260 days

Map Unit Composition

Haplic Palexeralfs loam—90 percent

Minor components—10 percent

Characteristics of Haplic Palexeralfs Loam

Slope: 0 to 5 percent

Geomorphic position: Low stream terraces

Parent material: Loamy and very gravelly alluvium over clayey and gravelly alluvium derived from basalt

Observed vegetation: Annual grasses and forbs and scattered valley oak, cottonwood, and willows

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 5 to 50 percent subrounded cobbles

Restrictive feature: None identified

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Occasional

Annual ponding frequency: None

Depth to a water table (zone of saturation): 60 to 80 inches

Available water capacity: Low (about 4.6 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Very low

Interpretive groups

Land capability, irrigated: 3s-4

Land capability, nonirrigated: 3s-4

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 3 inches; loam

Bt1—3 to 9 inches; very gravelly loam

Bt2—9 to 22 inches; very gravelly clay loam

2Bt3—22 to 31 inches; extremely gravelly sandy clay

2Bt4—31 to 45 inches; extremely gravelly sandy clay loam

2Bt5—45 to 52 inches; extremely gravelly sandy clay

3Bt6—52 to 64 inches; extremely cobbly sandy clay

Minor Components in Map Unit 347

Soils that are less than 60 inches deep to lone sandstone bedrock

Composition: 5 percent

Slope: 0 to 5 percent

Geomorphic position: Stream terraces

Hydric soil status: Not hydric

Soils that are less than 60 inches deep to lithic bedrock

Composition: 3 percent

Slope: 0 to 5 percent

Geomorphic position: Stream terraces

Hydric soil status: Not hydric

Durixeralfs and Petraquepts and similar soils

Composition: 2 percent

Slope: 0 to 5 percent

Geomorphic position: Stream terraces

Hydric soil status: Not hydric

353—Cherokeespring gravelly silt loam, 2 to 15 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Livestock grazing, orchard crops, wildlife habitat, and watershed

Major land resource area: 18

Landscape: Northern Sierra Nevada foothills

Elevation: 455 to 1,440 feet (140 to 439 meters)

Mean annual precipitation: 27 to 37 inches (686 to 940 millimeters)

Mean annual air temperature: 59 to 61 degrees F (15 to 16 degrees C)

Frost-free period: 250 to 260 days

Map Unit Composition

Cherokeespring gravelly silt loam—80 percent

Minor components—20 percent

Characteristics of Cherokeespring Gravelly Silt Loam

Slope: 2 to 15 percent

Geomorphic position: Benches on side slopes on basalt plateaus

Parent material: Silty alluvium derived from basalt

Observed vegetation: Annual grasses and forbs, Pacific poison oak and other oaks, and olive orchards

Texture of the surface layer: Gravelly silt loam

Percentage of the surface covered by rock fragments: 0 to 10 percent medium, subangular gravel, 0 to 5 percent subangular cobbles

Restrictive feature: None identified

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 8.1 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 3 inches; gravelly silt loam

Bt1—3 to 7 inches; gravelly silt loam

Bt2—7 to 16 inches; gravelly silty clay loam

Bt3—16 to 30 inches; gravelly silty clay loam

Bt4—30 to 42 inches; gravelly silty clay loam

Bt5—42 to 60 inches; very gravelly silty clay

Bt6—60 to 68 inches; very gravelly silty clay

Minor Components in Map Unit 353

Coalcanyon very cobbly loam and similar soils

Composition: 6 percent

Slope: 2 to 15 percent

Geomorphic position: Benches on side slopes on basalt plateaus

Hydric soil status: Not hydric

Coonhollow gravelly loam and similar soils

Composition: 6 percent

Slope: 2 to 15 percent

Geomorphic position: Benches on side slopes on basalt plateaus

Hydric soil status: Not hydric

Palexerults and similar soils

Composition: 4 percent

Slope: 2 to 15 percent

Geomorphic position: Benches on side slopes on basalt plateaus

Hydric soil status: Not hydric

Seeps

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: Benches on side slopes on basalt plateaus

Hydric soil status: Hydric

Rock outcrop

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: Benches on side slopes on basalt plateaus

Hydric soil status: Not hydric

355—Coalcanyon-Talus complex, 15 to 30 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Livestock grazing, wildlife habitat, and watershed

Major land resource area: 18

Landscape: Northern Sierra Nevada foothills

Elevation: 400 to 1,495 feet (122 to 457 meters)

Mean annual precipitation: 25 to 35 inches (635 to 889 millimeters)

Mean annual air temperature: 59 to 63 degrees F (15 to 17 degrees C)

Frost-free period: 250 to 260 days

Map Unit Composition

Coalcanyon very cobbly loam—55 percent

Talus—35 percent

Minor components—10 percent

Characteristics of Coalcanyon Very Cobbly Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes on basalt plateaus

Parent material: Stony and gravelly colluvium derived from basalt

Observed vegetation: Interior live oak, blue oak, valley oak, foothill pine, whiteleaf manzanita, and annual grasses and forbs

Texture of the surface layer: Very cobbly loam

Percentage of the surface covered by rock fragments: 10 to 60 percent medium, angular gravel, 5 to 65 percent angular cobbles, 0 to 25 percent angular stones, 0 to 20 percent angular boulders

Restrictive feature: None identified

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.2 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 4s-7

Land capability, nonirrigated: 4s-7

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 2 inches; very cobbly loam

BAt—2 to 11 inches; very cobbly loam

Bt1—11 to 27 inches; very cobbly loam

Bt2—27 to 43 inches; very cobbly loam

Bt3—43 to 65 inches; extremely cobbly clay loam

Characteristics of Talus

Slope: 15 to 30 percent

Geomorphic position: Side slopes on basalt plateaus

Surface runoff (bare conditions): Negligible

Definition: This talus consists of a pile of basalt rocks that accumulated at the base of a cliff by falling, sliding, or rolling from the cliff face.

Minor Components in Map Unit 355

Rock outcrop

Composition: 5 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on basalt plateaus

Hydric soil status: Not hydric

Coonhollow gravelly loam and similar soils

Composition: 5 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on basalt plateaus

Hydric soil status: Not hydric

356—Coalcanyon-Rock outcrop, cliffs-Talus-Coonhollow complex, 30 to 200 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Livestock grazing, wildlife habitat, and watershed

Major land resource area: 18

Landscape: Northern Sierra Nevada foothills

Elevation: 400 to 1,495 feet (122 to 457 meters)

Mean annual precipitation: 25 to 35 inches (635 to 889 millimeters)

Mean annual air temperature: 59 to 63 degrees F (15 to 17 degrees C)

Frost-free period: 250 to 260 days

Map Unit Composition

Coalcanyon very cobbly loam—45 percent

Rock outcrop, basalt cliffs—20 percent

Talus—20 percent

Coonhollow gravelly loam—10 percent

Minor components—5 percent

Characteristics of Coalcanyon Very Cobbly Loam

Slope: 30 to 50 percent

Geomorphic position: Backslopes on basalt plateaus

Parent material: Stony and gravelly colluvium derived from basalt

Observed vegetation: Interior live oak, blue oak, valley oak, foothill pine, whiteleaf manzanita, and annual grasses and forbs

Texture of the surface layer: Very cobbly loam

Percentage of the surface covered by rock fragments: 10 to 60 percent medium, angular gravel, 5 to 65 percent angular cobbles, 0 to 25 percent angular stones, 0 to 20 percent angular boulders

Restrictive feature: None identified

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.2 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 6e-7

Land capability, nonirrigated: 6e-7

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 2 inches; very cobbly loam

BAt—2 to 11 inches; very cobbly loam

Bt1—11 to 27 inches; very cobbly loam

Bt2—27 to 43 inches; very cobbly loam

Bt3—43 to 65 inches; extremely cobbly clay loam

Characteristics of Rock Outcrop, Basalt Cliffs

Slope: 50 to 200 percent

Geomorphic position: Backslopes on basalt plateaus

Surface runoff (bare conditions): Very high

Definition: A cliff is any high, very steep to perpendicular or overhanging face of rock.

Characteristics of Talus

Slope: 50 to 70 percent

Geomorphic position: Footslopes on plateaus

Surface runoff (bare conditions): Negligible

Definition: This talus consists of a pile of basalt rocks that accumulated at the base of a cliff by falling, sliding, or rolling from the cliff face.

Characteristics of Coonhollow Gravelly Loam

Slope: 30 to 50 percent

Geomorphic position: Backslopes on basalt plateaus

Parent material: Gravelly colluvium derived from basalt

Observed vegetation: Interior live oak, blue oak, valley oak, foothill pine, whiteleaf manzanita, and annual grasses and forbs

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 10 to 60 percent medium, angular gravel, 5 to 65 percent angular cobbles, 0 to 25 percent angular stones, 0 to 20 percent angular boulders

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 3.2 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 6e-7

Land capability, nonirrigated: 6e-7

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 3 inches; gravelly loam

ABt—3 to 11 inches; very cobbly loam

Bt1—11 to 22 inches; very cobbly loam

Bt2—22 to 32 inches; extremely cobbly loam

Bt3—32 to 45 inches; extremely cobbly clay loam

Cr—45 to 50 inches; bedrock

R—50 inches; bedrock

Minor Components in Map Unit 356

Soils that are less than 60 inches deep to sediments of the lone Formation

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on basalt plateaus

Hydric soil status: Not hydric

Clayey-skeletal soils

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on basalt plateaus

Hydric soil status: Not hydric

Campbellhills gravelly loam and similar soils

Composition: 1 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on basalt plateaus

Hydric soil status: Not hydric

360—Typic Xerofluvents complex, 0 to 2 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Source of aggregate, wildlife habitat, watershed, and livestock grazing

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 150 to 360 feet (46 to 110 meters)

Mean annual precipitation: 24 to 30 inches (610 to 762 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 250 to 258 days

Map Unit Composition

Typic Xerofluvents, coarse-loamy—45 percent

Typic Xerofluvents, sandy-skeletal—40 percent

Minor components—15 percent

Characteristics of Typic Xerofluvents, Coarse-Loamy

Slope: 0 to 2 percent

Geomorphic position: Stream terraces

Parent material: Sandy and gravelly alluvium generated from hydraulic mines and derived from sedimentary rocks

Observed vegetation: Annual grasses and forbs and, in riparian areas, cottonwood, California sycamore, valley oak, black walnut, California grape, and willows

Texture of the surface layer: Gravelly loamy sand

Percentage of the surface covered by rock fragments: 0 to 10 percent medium, subrounded gravel

Restrictive feature: None identified

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Natural hydrology has been significantly altered. Sediment pulses were released into drainageways during hydraulic mining activities.

These sediments quickly filled in natural channels and built up on the flood plain. Levees constructed on the flood plain were intended to confine the mine sediments. Some levees were breached, and natural channels are becoming reestablished.

Annual flooding frequency: Rare

Annual ponding frequency: None

Depth to a water table (zone of saturation): 20 to 94 inches

Available water capacity: Moderate (about 5.7 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Negligible

Interpretive groups

Land capability, irrigated: 2s-4

Land capability, nonirrigated: 3s-4

Storie index: 46 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: A

Typical profile

A—0 to 3 inches; gravelly loamy sand

C1—3 to 11 inches; gravelly coarse sandy loam

C2—11 to 20 inches; gravelly coarse sandy loam

- C3—20 to 24 inches; sand
- C4—24 to 31 inches; gravelly sand
- C5—31 to 45 inches; silt loam
- C6—45 to 51 inches; gravelly sand
- C7—51 to 66 inches; silt
- C8—66 to 84 inches; very gravelly coarse sand
- C9—84 to 95 inches; extremely gravelly coarse sand

Characteristics of Typic Xerofluvents, Sandy-Skeletal

Slope: 0 to 2 percent

Geomorphic position: Stream terraces

Parent material: Sandy and gravelly alluvium generated from hydraulic mines and derived from sedimentary rocks

Observed vegetation: Annual grasses and forbs and, in riparian areas, cottonwood, California sycamore, valley oak, black walnut, California grape, and willows

Texture of the surface layer: Gravelly loamy coarse sand

Percentage of the surface covered by rock fragments: 0 to 10 percent medium, subrounded gravel

Restrictive feature: None identified

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Natural hydrology has been significantly altered. Sediment pulses were released into drainageways during hydraulic mining activities.

These sediments quickly filled in natural channels and built up on the flood plain. Levees constructed on the flood plain were intended to confine the mine sediments. Some levees were breached, and natural channels are becoming reestablished.

Annual flooding frequency: Rare

Annual ponding frequency: None

Depth to a water table (zone of saturation): 20 to 98 inches

Available water capacity: Very low (about 1.3 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very low

Interpretive groups

Land capability, irrigated: 7s-4

Land capability, nonirrigated: 7s-4

Storie index: 46 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: A

Typical profile

A—0 to 3 inches; gravelly loamy coarse sand

C1—3 to 9 inches; very gravelly loamy coarse sand

C2—9 to 16 inches; very gravelly coarse sand

C3—16 to 22 inches; very gravelly coarse sand

C4—22 to 30 inches; very gravelly coarse sand

C5—30 to 40 inches; very gravelly coarse sand

C6—40 to 50 inches; gravelly sand

C7—50 to 98 inches; extremely gravelly coarse sand

Minor Components in Map Unit 360

Typic Xerofluvents, sandy, and similar soils

Composition: 9 percent

Slope: 0 to 2 percent

Geomorphic position: Stream terraces

Hydric soil status: Not hydric

Soils that have a loamy-skeletal substratum

Composition: 3 percent

Slope: 0 to 2 percent

Geomorphic position: Stream terraces

Hydric soil status: Not hydric

Soils that have a clayey buried substratum

Composition: 3 percent

Slope: 0 to 2 percent

Geomorphic position: Stream terraces

Hydric soil status: Not hydric

361—Typic Xerofluvents, sandy-skeletal, 0 to 2 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Source of aggregate, wildlife habitat, watershed, and livestock grazing

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 360 to 600 feet (110 to 183 meters)

Mean annual precipitation: 30 to 35 inches (762 to 889 millimeters)

Mean annual air temperature: 61 degrees F (16 degrees C)

Frost-free period: 258 to 260 days

Map Unit Composition

Typic Xerofluvents, sandy-skeletal—85 percent

Minor components—15 percent

Characteristics of Typic Xerofluvents, Sandy-Skeletal

Slope: 0 to 2 percent

Geomorphic position: Stream terraces

Parent material: Sandy and gravelly alluvium generated from hydraulic mines and derived from sedimentary rocks

Observed vegetation: Annual grasses and forbs and, in riparian areas, cottonwood, California sycamore, valley oak, black walnut, California grape, and willows

Texture of the surface layer: Gravelly loamy coarse sand

Percentage of the surface covered by rock fragments: 0 to 10 percent medium, subrounded gravel

Restrictive feature: None identified

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Natural hydrology has been significantly altered. Sediment pulses were released into drainageways during hydraulic mining activities.

These sediments quickly filled in natural channels and built up on the flood plain. Levees constructed on the flood plain were intended to confine the mine sediments. Some levees were breached, and natural channels are becoming reestablished.

Annual flooding frequency: Rare

Annual ponding frequency: None

Depth to a water table (zone of saturation): 20 to 98 inches

Available water capacity: Very low (about 1.3 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very low

Interpretive groups

Land capability, irrigated: 7s-4

Land capability, nonirrigated: 7s-4

Hydric soil status: Not hydric

Hydrologic soil group: A

Typical profile

A—0 to 3 inches; gravelly loamy coarse sand

C1—3 to 9 inches; very gravelly loamy coarse sand

C2—9 to 16 inches; very gravelly coarse sand

C3—16 to 22 inches; very gravelly coarse sand

C4—22 to 30 inches; very gravelly coarse sand

C5—30 to 40 inches; very gravelly coarse sand

C6—40 to 50 inches; gravelly sand

C7—50 to 98 inches; extremely gravelly coarse sand

Minor Components in Map Unit 361

Typic Xerofluvents, coarse-loamy, and similar soils

Composition: 9 percent

Slope: 0 to 2 percent

Geomorphic position: Areas of hydraulic-mine sediment on stream terraces

Hydric soil status: Not hydric

Soils that have a loamy-skeletal substratum

Composition: 3 percent

Slope: 0 to 2 percent

Geomorphic position: Areas of hydraulic-mine sediment on stream terraces

Hydric soil status: Not hydric

Soils that have a clayey buried substratum

Composition: 3 percent

Slope: 0 to 2 percent

Geomorphic position: Areas of hydraulic-mine sediment on stream terraces

Hydric soil status: Not hydric

362—Ultic Haploxeralfs, sandstone, low elevation, complex, 2 to 5 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Livestock grazing, wildlife habitat, and watershed

Major land resource area: 18

Landscape: Areas of marine sandstone exposed in Southern Cascade foothills

Elevation: 295 to 495 feet (91 to 152 meters)

Mean annual precipitation: 28 to 32 inches (711 to 813 millimeters)

Mean annual air temperature: 61 degrees F (16 degrees C)

Frost-free period: 255 to 260 days

Map Unit Composition

Ultic Haploxeralfs, sandstone, low elevation, very deep—60 percent

Ultic Haploxeralfs, sandstone, low elevation, deep—25 percent
 Minor components—15 percent

***Characteristics of Ultic Haploxeralfs, Sandstone, Low Elevation,
 Very Deep***

Slope: 2 to 5 percent

Geomorphic position: Footslopes on hills

Parent material: Fine-loamy residuum weathered from sandstone

Observed vegetation: Annual grasses and forbs and blue oak

Texture of the surface layer: Sandy loam

Percentage of the surface covered by rock fragments: 0 to 5 percent well rounded
 gravel

Depth to a restrictive feature (paralithic bedrock): 60 to 90 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 8.8 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very low

Interpretive groups

Land capability, irrigated: 2e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 2 inches; sandy loam

Bt1—2 to 8 inches; sandy clay loam

Bt2—8 to 18 inches; sandy clay loam

Bt3—18 to 28 inches; sandy clay loam

Bt4—28 to 39 inches; sandy clay loam

BCt—39 to 49 inches; sandy clay loam

C1—49 to 56 inches; sandy clay loam

C2—56 to 70 inches; sandy loam

Characteristics of Ultic Haploxeralfs, Sandstone, Low Elevation, Deep

Slope: 2 to 5 percent

Geomorphic position: Convex footslopes on hills

Parent material: Fine-loamy residuum weathered from sandstone

Observed vegetation: Annual grasses and forbs and blue oak

Texture of the surface layer: Fine sandy loam

Percentage of the surface covered by rock fragments: 0 to 5 percent well rounded
 gravel

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.0 inches)

Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 2e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

A—0 to 3 inches; fine sandy loam
 Bt1—3 to 8 inches; sandy clay loam
 Bt2—8 to 15 inches; sandy clay loam
 BCt1—15 to 24 inches; fine sandy loam
 BCt2—24 to 32 inches; loam
 BCt3—32 to 41 inches; very fine sandy loam
 Cr—41 inches; bedrock

Minor Components in Map Unit 362

Redsluff taxadjunct and similar soils

Composition: 4 percent
Slope: 2 to 3 percent
Geomorphic position: Strath terraces
Hydric soil status: Not hydric

Palexerults and similar soils

Composition: 4 percent
Slope: 2 to 5 percent
Geomorphic position: Footslopes on sedimentary hills
Hydric soil status: Not hydric

Ultic Haploxeralfs, fine, and similar soils

Composition: 3 percent
Slope: 2 to 5 percent
Geomorphic position: Footslopes on sedimentary hills
Hydric soil status: Not hydric

Carhart and similar soils

Composition: 2 percent
Slope: 2 to 5 percent
Geomorphic position: Footslopes on sedimentary hills
Hydric soil status: Hydric

Ultic Haploxeralfs with paralithic bedrock at a depth of 20 to 40 inches and similar soils

Composition: 1 percent
Slope: 2 to 5 percent
Geomorphic position: Convex footslopes on sedimentary hills
Hydric soil status: Not hydric

Seeps

Composition: 1 percent
Slope: 2 to 5 percent
Geomorphic position: Footslopes on sedimentary hills
Hydric soil status: Hydric

363—Ultic Haploxeralfs, sandstone, low elevation, complex, 5 to 15 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Livestock grazing, wildlife habitat, and watershed

Major land resource area: 18

Landscape: Areas of marine sandstone exposed in Southern Cascade foothills

Elevation: 340 to 635 feet (104 to 195 meters)

Mean annual precipitation: 28 to 32 inches (711 to 813 millimeters)

Mean annual air temperature: 61 degrees F (16 degrees C)

Frost-free period: 255 to 260 days

Map Unit Composition

Ultic Haploxeralfs, sandstone, low elevation, very deep—60 percent

Ultic Haploxeralfs, sandstone, low elevation, deep—30 percent

Minor components—10 percent

Characteristics of Ultic Haploxeralfs, Sandstone, Low Elevation, Very Deep

Slope: 5 to 15 percent

Geomorphic position: Side slopes on hills

Parent material: Fine-loamy residuum weathered from sandstone

Observed vegetation: Annual grasses and forbs and blue oak

Texture of the surface layer: Sandy loam

Percentage of the surface covered by rock fragments: 0 to 5 percent well rounded gravel

Depth to a restrictive feature (paralithic bedrock): 60 to 90 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 8.8 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 2 inches; sandy loam

Bt1—2 to 8 inches; sandy clay loam

Bt2—8 to 18 inches; sandy clay loam

Bt3—18 to 28 inches; sandy clay loam

Bt4—28 to 39 inches; sandy clay loam

BCt—39 to 49 inches; sandy clay loam

C1—49 to 56 inches; sandy clay loam

C2—56 to 70 inches; sandy loam

Characteristics of Ultic Haploxeralfs, Sandstone, Low Elevation, Deep

Slope: 5 to 15 percent

Geomorphic position: Nose slopes on hills

Parent material: Fine-loamy residuum weathered from sandstone

Observed vegetation: Annual grasses and forbs and blue oak

Texture of the surface layer: Fine sandy loam

Percentage of the surface covered by rock fragments: 0 to 5 percent well rounded gravel

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.0 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 3 inches; fine sandy loam

Bt1—3 to 8 inches; sandy clay loam

Bt2—8 to 15 inches; sandy clay loam

BCt1—15 to 24 inches; fine sandy loam

BCt2—24 to 32 inches; loam

BCt3—32 to 41 inches; very fine sandy loam

Cr—41 inches; bedrock

Minor Components in Map Unit 363**Palexerults and similar soils**

Composition: 3 percent

Slope: 5 to 15 percent

Geomorphic position: Side slopes on sedimentary hills

Hydric soil status: Not hydric

Ultic Haploxeralfs, fine, and similar soils

Composition: 2 percent

Slope: 5 to 15 percent

Geomorphic position: Side slopes on sedimentary hills

Hydric soil status: Not hydric

Carhart and similar soils

Composition: 2 percent

Slope: 5 to 15 percent

Geomorphic position: Side slopes on sedimentary hills

Hydric soil status: Hydric

Ultic Haploxeralfs with paralithic bedrock at a depth of 20 to 40 inches and similar soils

Composition: 2 percent

Slope: 5 to 15 percent

Geomorphic position: Nose slopes on sedimentary hills

Hydric soil status: Not hydric

Seeps

Composition: 1 percent

Slope: 5 to 15 percent

Geomorphic position: Side slopes on sedimentary hills

Hydric soil status: Hydric

364—Ultic Haploxeralfs, sandstone, low elevation, complex, 15 to 30 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Livestock grazing, wildlife habitat, and watershed

Major land resource area: 18

Landscape: Areas of marine sandstone exposed in Southern Cascade foothills

Elevation: 340 to 620 feet (104 to 189 meters)

Mean annual precipitation: 28 to 32 inches (711 to 813 millimeters)

Mean annual air temperature: 61 degrees F (16 degrees C)

Frost-free period: 255 to 260 days

Map Unit Composition

Ultic Haploxeralfs, sandstone, low elevation, deep—50 percent

Ultic Haploxeralfs, sandstone, low elevation, very deep—40 percent

Minor components—10 percent

Characteristics of Ultic Haploxeralfs, Sandstone, Low Elevation, Deep

Slope: 15 to 30 percent

Geomorphic position: Nose slopes on hills

Parent material: Fine-loamy residuum weathered from sandstone

Observed vegetation: Annual grasses and forbs and blue oak

Texture of the surface layer: Fine sandy loam

Percentage of the surface covered by rock fragments: 0 to 5 percent well rounded gravel

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.0 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 3 inches; fine sandy loam

Bt1—3 to 8 inches; sandy clay loam

Bt2—8 to 15 inches; sandy clay loam
 BCt1—15 to 24 inches; fine sandy loam
 BCt2—24 to 32 inches; loam
 BCt3—32 to 41 inches; very fine sandy loam
 Cr—41 inches; bedrock

Characteristics of Ultic Haploxeralfs, Sandstone, Low Elevation, Very Deep

Slope: 15 to 30 percent

Geomorphic position: Side slopes on hills

Parent material: Fine-loamy colluvium derived from sandstone

Observed vegetation: Annual grasses and forbs and blue oak

Texture of the surface layer: Sandy loam

Percentage of the surface covered by rock fragments: 0 to 5 percent well rounded gravel

Depth to a restrictive feature (paralithic bedrock): 60 to 90 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 8.8 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 2 inches; sandy loam

Bt1—2 to 8 inches; sandy clay loam

Bt2—8 to 18 inches; sandy clay loam

Bt3—18 to 28 inches; sandy clay loam

Bt4—28 to 39 inches; sandy clay loam

BCt—39 to 49 inches; sandy clay loam

C1—49 to 56 inches; sandy clay loam

C2—56 to 70 inches; sandy loam

Minor Components in Map Unit 364

Ultic Haploxeralfs with paralithic bedrock at a depth of 20 to 40 inches and similar soils

Composition: 3 percent

Slope: 15 to 30 percent

Geomorphic position: Nose slopes on sedimentary hills

Hydric soil status: Not hydric

Palexerults and similar soils

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on sedimentary hills

Hydric soil status: Not hydric

Ultic Haploxeralfs, fine, and similar soils*Composition:* 2 percent*Slope:* 15 to 30 percent*Geomorphic position:* Side slopes on sedimentary hills*Hydric soil status:* Not hydric**Carhart and similar soils***Composition:* 2 percent*Slope:* 15 to 30 percent*Geomorphic position:* Side slopes on sedimentary hills*Hydric soil status:* Hydric**Seeps***Composition:* 1 percent*Slope:* 15 to 30 percent*Geomorphic position:* Side slopes on sedimentary hills*Hydric soil status:* Hydric**365—Palexerults, 15 to 30 percent slopes*****Map Unit Setting****General location:* Central Butte County*Major uses:* Livestock grazing, wildlife habitat, and watershed*Major land resource area:* 18*Landscape:* Northern Sierra Nevada foothills*Elevation:* 225 to 1,380 feet (70 to 422 meters)*Mean annual precipitation:* 26 to 40 inches (660 to 1,016 millimeters)*Mean annual air temperature:* 61 to 63 degrees F (16 to 17 degrees C)*Frost-free period:* 250 to 260 days***Map Unit Composition***

Palexerults gravelly loam—80 percent

Minor components—20 percent

Characteristics of Palexerults Gravelly Loam*Slope:* 15 to 30 percent*Geomorphic position:* Footslopes and backslopes on hills*Parent material:* Fine-loamy colluvium derived from volcanic and sedimentary rocks over clayey residuum weathered from claystone*Observed vegetation:* Annual grasses and forbs; oaks, buckbrush, and manzanita at the higher elevations*Texture of the surface layer:* Gravelly loam*Percentage of the surface covered by rock fragments:* 0 to 10 percent rounded cobbles, 0 to 5 percent angular stones, 0 to 3 percent angular boulders, 0 to 20 percent medium, rounded gravel*Depth to a restrictive feature (densic bedrock):* 60 to 90 inches*Shrink-swell potential:* High (LEP of 6 to 9)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* None*Annual ponding frequency:* None*Water table (zone of saturation):* None observed*Available water capacity:* High (about 8.8 inches)

Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile

A—0 to 2 inches; gravelly loam
Bt1—2 to 12 inches; gravelly loam
Bt2—12 to 20 inches; clay loam
2Bt3—20 to 29 inches; silty clay
2BCt—29 to 46 inches; silty clay
2C—46 to 65 inches; silty clay
2Cd—65 inches; bedrock

Minor Components in Map Unit 365

Palexerults, clayey-skeletal, and similar soils

Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Footslopes and backslopes on hills
Hydric soil status: Not hydric

Coalcanyon very cobbly loam and similar soils

Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Footslopes and backslopes on hills
Hydric soil status: Not hydric

Ultic Haploxeralfs, sandstone, low elevation, and similar soils

Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Footslopes and backslopes on hills
Hydric soil status: Not hydric

Seeps

Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Footslopes and backslopes on hills
Hydric soil status: Hydric

Carhart and similar soils

Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Footslopes and backslopes on hills
Hydric soil status: Hydric

Chinacamp and similar soils

Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Footslopes and backslopes on hills
Hydric soil status: Not hydric

366—Palexerults, 30 to 50 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Livestock grazing, wildlife habitat, and watershed

Major land resource area: 18

Landscape: Northern Sierra Nevada foothills

Elevation: 455 to 1,400 feet (140 to 427 meters)

Mean annual precipitation: 28 to 40 inches (711 to 1,016 millimeters)

Mean annual air temperature: 61 degrees F (16 degrees C)

Frost-free period: 255 to 260 days

Map Unit Composition

Palexerults gravelly loam—80 percent

Minor components—20 percent

Characteristics of Palexerults Gravelly Loam

Slope: 30 to 50 percent

Geomorphic position: Backslopes on hills

Parent material: Fine-loamy colluvium derived from volcanic and sedimentary rocks over clayey residuum weathered from claystone

Observed vegetation: Annual grasses and forbs; oaks, buckbrush, and manzanita at the higher elevations

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 0 to 10 percent rounded cobbles, 0 to 5 percent angular stones, 0 to 3 percent angular boulders, 0 to 20 percent medium, rounded gravel

Depth to a restrictive feature (densic bedrock): 60 to 90 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 8.8 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A—0 to 2 inches; gravelly loam

Bt1—2 to 12 inches; gravelly loam

Bt2—12 to 20 inches; clay loam

2Bt3—20 to 29 inches; silty clay

2BCt—29 to 46 inches; silty clay

2C—46 to 65 inches; silty clay

2Cd—65 inches; bedrock

Minor Components in Map Unit 366

Palexerults, clayey-skeletal, and similar soils

Composition: 5 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on hills

Hydric soil status: Not hydric

Coalcanyon very cobbly loam and similar soils

Composition: 5 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on hills

Hydric soil status: Not hydric

Ultic Haploxeralfs, sandstone, low elevation, and similar soils

Composition: 4 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on hills

Hydric soil status: Not hydric

Seeps

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on hills

Hydric soil status: Hydric

Carhart and similar soils

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on hills

Hydric soil status: Hydric

Chinacamp and similar soils

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on hills

Hydric soil status: Not hydric

370—Palexerults, 2 to 15 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Livestock grazing, wildlife habitat, and watershed

Major land resource area: 18

Landscape: Northern Sierra Nevada foothills

Elevation: 170 to 1,200 feet (53 to 366 meters)

Mean annual precipitation: 26 to 40 inches (660 to 1,016 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 250 to 260 days

Map Unit Composition

Palexerults gravelly loam—80 percent

Minor components—20 percent

Characteristics of Palexerults Gravelly Loam

Slope: 2 to 15 percent

Geomorphic position: Footslopes on hills

Parent material: Fine-loamy colluvium derived from volcanic and sedimentary rocks over clayey residuum weathered from claystone

Observed vegetation: Annual grasses and forbs; oaks, buckbrush, and manzanita at the higher elevations

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 0 to 10 percent rounded cobbles, 0 to 5 percent angular stones, 0 to 3 percent angular boulders, 0 to 20 percent medium, rounded gravel

Depth to a restrictive feature (densic bedrock): 60 to 90 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 8.8 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A—0 to 2 inches; gravelly loam

Bt1—2 to 12 inches; gravelly loam

Bt2—12 to 20 inches; clay loam

2Bt3—20 to 29 inches; silty clay

2BCt—29 to 46 inches; silty clay

2C—46 to 65 inches; silty clay

2Cd—65 inches; densic bedrock

Minor Components in Map Unit 370

Palexerults, clayey-skeletal, and similar soils

Composition: 5 percent

Slope: 2 to 15 percent

Geomorphic position: Footslopes on hills

Hydric soil status: Not hydric

Cherokeespring and similar soils

Composition: 3 percent

Slope: 2 to 15 percent

Geomorphic position: Footslopes on hills

Hydric soil status: Not hydric

Coalcanyon very cobbly loam and similar soils

Composition: 3 percent

Slope: 2 to 15 percent

Geomorphic position: Footslopes on hills

Hydric soil status: Not hydric

Seeps*Composition:* 2 percent*Slope:* 2 to 15 percent*Geomorphic position:* Footslopes on hills*Hydric soil status:* Hydric**Carhart and similar soils***Composition:* 2 percent*Slope:* 2 to 15 percent*Geomorphic position:* Footslopes on hills*Hydric soil status:* Hydric**Wickscorner and similar soils***Composition:* 2 percent*Slope:* 2 to 10 percent*Geomorphic position:* Alluvial fans*Hydric soil status:* Not hydric**Ultic Haploxeralfs, sandstone, low elevation, and similar soils***Composition:* 2 percent*Slope:* 2 to 15 percent*Geomorphic position:* Footslopes on hills*Hydric soil status:* Not hydric**Chinacamp and similar soils***Composition:* 1 percent*Slope:* 2 to 15 percent*Geomorphic position:* Footslopes on hills*Hydric soil status:* Not hydric**375—Wickscorner loam, 2 to 10 percent slopes*****Map Unit Setting****General location:* Central Butte County*Major uses:* Livestock grazing, orchard crops, wildlife habitat, and watershed*Major land resource area:* 18*Landscape:* Southern Cascade foothills*Elevation:* 245 to 655 feet (76 to 201 meters)*Mean annual precipitation:* 24 to 29 inches (610 to 737 millimeters)*Mean annual air temperature:* 61 to 63 degrees F (16 to 17 degrees C)*Frost-free period:* 250 to 255 days***Map Unit Composition***

Wickscorner loam—80 percent

Minor components—20 percent

Characteristics of Wickscorner Loam*Slope:* 2 to 10 percent*Geomorphic position:* Alluvial fans on Table Mountain*Parent material:* Loamy alluvium over gravelly and clayey alluvium derived from basalt*Observed vegetation:* Annual grasses and forbs and olive orchards*Texture of the surface layer:* Loam*Percentage of the surface covered by rock fragments:* 0 to 5 percent medium, subrounded gravel, 0 to 15 percent subrounded cobbles

Depth to a restrictive feature (duripan): 60 to 87 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 50 to 84 inches

Available water capacity: Moderate (about 6.7 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 2e-1

Land capability, nonirrigated: 3e-1

Storie index: 83 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 2 inches; loam

Bt1—2 to 8 inches; loam

Bt2—8 to 22 inches; gravelly clay loam

2Bt3—22 to 38 inches; very gravelly clay loam

2Bt4—38 to 59 inches; very gravelly clay

3Bt5—59 to 72 inches; extremely gravelly sandy clay

3Bt6—72 to 84 inches; extremely gravelly sandy clay

Minor Components in Map Unit 375

Flagcanyon gravelly loam and similar soils

Composition: 8 percent

Slope: 2 to 10 percent

Geomorphic position: Alluvial fans on Table Mountain

Hydric soil status: Not hydric

Loamy-skeletal soils that are 20 to 40 inches deep to a duripan

Composition: 5 percent

Slope: 2 to 10 percent

Geomorphic position: Convex slopes on alluvial fans on Table Mountain

Hydric soil status: Not hydric

Fine-loamy soils that are 40 to 60 inches deep to a duripan

Composition: 5 percent

Slope: 2 to 10 percent

Geomorphic position: Convex slopes on alluvial fans on Table Mountain

Hydric soil status: Not hydric

Soils that are fine-loamy throughout and are more than 60 inches deep to a duripan

Composition: 2 percent

Slope: 2 to 10 percent

Geomorphic position: Large mounds on fan terraces

Hydric soil status: Not hydric

376—Flagcanyon-Wickscorner complex, 2 to 5 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Livestock grazing, orchard crops, wildlife habitat, and watershed

Major land resource area: 18

Landscape: Southern Cascade foothills

Elevation: 215 to 495 feet (67 to 152 meters)

Mean annual precipitation: 25 to 30 inches (635 to 762 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 250 to 255 days

Map Unit Composition

Flagcanyon gravelly loam—50 percent

Wickscorner loam—35 percent

Minor components—15 percent

Characteristics of Flagcanyon Gravelly Loam

Slope: 2 to 5 percent

Geomorphic position: Alluvial fans on Table Mountain

Parent material: Loamy and gravelly alluvium over cemented, clayey, and extremely gravelly alluvium derived from basalt

Observed vegetation: Annual grasses and forbs and olive orchards

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 0 to 10 percent medium, subangular gravel, 0 to 15 percent subangular cobbles

Depth to a restrictive feature (duripan): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 16 to 40 inches

Available water capacity: Low (about 2.7 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 3e-3

Land capability, nonirrigated: 3e-3

Storie index: 43 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A—0 to 3 inches; gravelly loam

Bt1—3 to 9 inches; very gravelly loam

Bt2—9 to 14 inches; very gravelly loam

2Bt3—14 to 30 inches; very gravelly clay loam

3Btq1—30 to 53 inches; extremely gravelly duripan

3Btq2—53 to 65 inches; extremely gravelly duripan

Characteristics of Wickscorner Loam

Slope: 2 to 5 percent

Geomorphic position: Alluvial fans on Table Mountain

Parent material: Loamy alluvium over gravelly and clayey alluvium derived from basalt

Observed vegetation: Annual grasses and forbs and olive orchards

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: 0 to 5 percent medium, subrounded gravel, 0 to 5 percent subrounded cobbles

Depth to a restrictive feature (duripan): 60 to 84 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 50 to 84 inches

Available water capacity: Moderate (about 6.7 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 2e-1

Land capability, nonirrigated: 3e-1

Storie index: 86 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 2 inches; loam

Bt1—2 to 8 inches; loam

Bt2—8 to 22 inches; gravelly clay loam

2Bt3—22 to 38 inches; very gravelly clay loam

2Bt4—38 to 59 inches; very gravelly clay

3Bt5—59 to 72 inches; extremely gravelly sandy clay

3Bt6—72 to 84 inches; extremely gravelly sandy clay

Minor Components in Map Unit 376

Clayey-skeletal soils that are 20 to 40 inches deep

Composition: 5 percent

Slope: 2 to 5 percent

Geomorphic position: Areas along drainageways on alluvial fans on Table Mountain

Hydric soil status: Not hydric

Soils that are fine-loamy throughout and are more than 60 inches deep to a duripan

Composition: 3 percent

Slope: 2 to 5 percent

Geomorphic position: Mounds on fan terraces on Table Mountain

Hydric soil status: Not hydric

Near irrigated areas, soils that have a high water table

Composition: 3 percent

Slope: 2 to 5 percent

Geomorphic position: Alluvial fans on Table Mountain

Hydric soil status: Not hydric

Fine-loamy soils that are 40 to 60 inches deep to a duripan

Composition: 2 percent

Slope: 2 to 5 percent

Geomorphic position: Fan terraces on Table Mountain

Hydric soil status: Not hydric

Soils that are frequently ponded for long periods

Composition: 2 percent

Slope: 2 to 3 percent

Geomorphic position: Open depressions on fan terraces on Table Mountain

Hydric soil status: Hydric

377—Flagcanyon taxadjunct-Durixeralfs-Duraquerts complex, 0 to 5 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Livestock grazing and wildlife habitat

Major land resource area: 18

Landscape: Southern Cascade foothills

Elevation: 140 to 380 feet (44 to 116 meters)

Mean annual precipitation: 25 to 27 inches (635 to 686 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 245 to 250 days

Map Unit Composition

Flagcanyon taxadjunct fine sandy loam—55 percent

Durixeralfs, clayey-skeletal, loam—20 percent

Duraquerts gravelly clay—15 percent

Minor components—10 percent

Characteristics of Flagcanyon Taxadjunct Fine Sandy Loam

Slope: 0 to 5 percent

Geomorphic position: Mounds on fan terraces on Table Mountain

Parent material: Fine-loamy alluvium over clayey and very gravelly alluvium over cemented, sandy, and extremely gravelly alluvium derived from basalt

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Fine sandy loam

Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, well rounded gravel

Depth to a restrictive feature: 20 to 40 inches to a duripan; 40 to 60 inches to an indurated duripan

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 16 to 40 inches

Available water capacity: Low (about 3.7 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 3e-3

Land capability, nonirrigated: 3e-3

Storie index: 48 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile

A—0 to 3 inches; fine sandy loam
 Bt1—3 to 7 inches; loam
 Bt2—7 to 16 inches; clay loam
 2Bt3—16 to 23 inches; very gravelly clay
 2Bt4—23 to 31 inches; extremely gravelly clay
 3Bq—31 to 63 inches; extremely gravelly duripan

Characteristics of Durixeralfs, Clayey-Skeletal, Loam

Slope: 0 to 5 percent
Geomorphic position: Swales on fan terraces on Table Mountain
Parent material: Loamy alluvium over clayey and very gravelly alluvium over cemented, extremely gravelly alluvium derived from basalt
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, rounded gravel, 2 to 20 percent rounded cobbles, 0 to 1 percent rounded stones
Depth to a restrictive feature (duripan): 10 to 20 inches
Shrink-swell potential: High (LEP of 6 to 9)
Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 20 inches
Available water capacity: Very low (about 1.7 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 6e-2
Land capability, nonirrigated: 6e-2
Storie index: 34 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile

A—0 to 1 inch; loam
 Bt1—1 to 4 inches; clay loam
 2Bt2—4 to 9 inches; very gravelly clay
 2Bt3—9 to 15 inches; very gravelly clay
 3Bq—15 to 60 inches; extremely gravelly duripan

Characteristics of Duraquerts Gravelly Clay

Slope: 0 to 1 percent
Geomorphic position: Swales on fan terraces on Table Mountain
Parent material: Clayey and gravelly alluvium over cemented, very gravelly, and sandy alluvium derived from igneous, sedimentary, and metamorphic rocks
Observed vegetation: Annual grasses and forbs
Surface feature: Polygonal cracks open during dry periods.
Texture of the surface layer: Gravelly clay
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, well rounded gravel, 2 to 25 percent well rounded cobbles

Depth to a restrictive feature (duripan): 20 to 40 inches

Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 40 inches

Available water capacity: Low (about 3.0 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): Negligible

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Storie index: 11 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

A1—0 to 3 inches; gravelly clay

A2—3 to 6 inches; gravelly silty clay

Bss1—6 to 15 inches; silty clay

Bss2—15 to 21 inches; silty clay

Bw—21 to 23 inches; very gravelly silty clay

2Bq—23 to 60 inches; very gravelly duripan

Minor Components in Map Unit 377

Typic Petraquepts and similar soils

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Swales on fan terraces on Table Mountain

Hydric soil status: Hydric

Clayey-skeletal soils that are 20 to 40 inches deep to a duripan

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Swales on fan terraces on Table Mountain

Hydric soil status: Hydric

Soils that have an indurated duripan

Composition: 2 percent

Slope: 0 to 5 percent

Geomorphic position: Fan terraces on Table Mountain

Hydric soil status: Not hydric

Loamy-skeletal soils that are 20 to 40 inches deep to a duripan

Composition: 2 percent

Slope: 0 to 5 percent

Geomorphic position: Mounds on fan terraces on Table Mountain

Hydric soil status: Not hydric

Soils that are frequently ponded for long periods

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Vernal pools on fan terraces on Table Mountain

Hydric soil status: Hydric

400—Subaco taxadjunct clay, 0 to 1 percent slopes

Map Unit Setting

General location: Southwestern Butte County and north-central Sutter County

Major uses: Cropland and wildlife habitat

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 65 to 75 feet (20 to 23 meters)

Mean annual precipitation: 19 to 21 inches (483 to 533 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 240 to 250 days

Map Unit Composition

Subaco taxadjunct clay—85 percent

Minor components—15 percent

Characteristics of Subaco Taxadjunct Clay

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Parent material: Clayey alluvium over cemented, fine-silty alluvium over dense, sandy alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Rice and annual grasses and forbs

Surface feature: Most areas have been leveled for agriculture.

Texture of the surface layer: Clay

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature: 20 to 40 inches to a duripan; 40 to 60 inches to dense material

Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: Rare

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 40 inches

Available water capacity: Moderate (about 5.3 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Storie index: 15 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

A—0 to 8 inches; clay

Bss—8 to 16 inches; silty clay

Bkss—16 to 29 inches; silty clay

Bk—29 to 35 inches; clay

2Bkqm—35 to 42 inches; duripan
 2Cd—42 to 60 inches; dense sandy loam

Minor Components in Map Unit 400

Neerdobe clay and similar soils

Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Esquon clay and similar soils

Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Soils that are 10 to 20 inches deep to a duripan

Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Gridley taxadjunct clay loam and similar soils

Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

Saline soils

Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

415—Ignord fine sandy loam, 0 to 2 percent slopes

Map Unit Setting

General location: West-central Butte County
Major uses: Orchard crops, row crops, and grain crops
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 110 to 155 feet (35 to 48 meters)
Mean annual precipitation: 20 to 22 inches (508 to 559 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 240 to 250 days

Map Unit Composition

Ignord fine sandy loam—90 percent
 Minor components—10 percent

Characteristics of Ignord Fine Sandy Loam

Slope: 0 to 2 percent
Geomorphic position: Wave-worked distal alluvial fans
Parent material: Coarse-loamy alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Almond and walnut orchards, wheat, and valley oak

Surface feature: The surface has been leveled for agriculture.

Texture of the surface layer: Fine sandy loam

Percentage of the surface covered by rock fragments: None

Restrictive feature: None identified

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Rare

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 7.4 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Negligible

Interpretive groups

Land capability, irrigated: 2s-6

Land capability, nonirrigated: 3s-6

Storie index: 85 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Akp—0 to 4 inches; fine sandy loam

Ak1—4 to 14 inches; fine sandy loam

Ak2—14 to 25 inches; sandy loam

Ak3—25 to 32 inches; fine sandy loam

Bk—32 to 53 inches; sandy loam

Bkq—53 to 58 inches; fine sandy loam

B'k—58 to 77 inches; fine sandy loam

Minor Components in Map Unit 415

Vina fine sandy loam and similar soils

Composition: 5 percent

Slope: 0 to 2 percent

Geomorphic position: Alluvial fans

Hydric soil status: Not hydric

Almendra and similar soils

Composition: 3 percent

Slope: 0 to 2 percent

Geomorphic position: Alluvial fans

Hydric soil status: Not hydric

Soils that have 1 to 15 percent gravel throughout

Composition: 1 percent

Slope: 0 to 2 percent

Geomorphic position: Wave-worked distal alluvial fans

Hydric soil status: Not hydric

Bosquejo clay and similar soils

Composition: 1 percent

Slope: 0 to 2 percent

Geomorphic position: Interfan basins

Hydric soil status: Not hydric

416—Calcic Haploxerolls, 0 to 1 percent slopes

Map Unit Setting

General location: Southwestern Butte County

Major uses: Irrigated cropland, irrigated pasture, homesite development, and wildlife habitat

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 65 to 85 feet (20 to 27 meters)

Mean annual precipitation: 18 to 19 inches (457 to 483 millimeters)

Mean annual air temperature: 61 degrees F (16 degrees C)

Frost-free period: 240 days

Map Unit Composition

Calcic Haploxerolls sandy loam—90 percent

Minor components—10 percent

Characteristics of Calcic Haploxerolls Sandy Loam

Slope: 0 to 1 percent

Geomorphic position: Low terraces

Parent material: Coarse-loamy alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Annual grasses and forbs and rice

Surface feature: Some areas have been leveled for agriculture.

Texture of the surface layer: Sandy loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (dense material): 40 to 60 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Hydrology has been altered in areas leveled for agriculture.

Annual flooding frequency: Rare

Annual ponding frequency: None

Depth to a water table (zone of saturation): 11 to 60 inches

Available water capacity: Moderate (about 5.6 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Very low

Interpretive groups

Land capability, irrigated: 3s-6

Land capability, nonirrigated: 3s-6

Storie index: 67 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 5 inches; sandy loam

Ak—5 to 17 inches; sandy loam

Bk1—17 to 20 inches; sandy loam

Bk2—20 to 33 inches; sandy loam

C—33 to 44 inches; sandy loam

2Cd—44 to 72 inches; dense material

Minor Components in Map Unit 416

Calcic Haploxerolls that are loam throughout and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Low terraces

Hydric soil status: Not hydric

Calcic Haploxerolls clay loam and similar soils

Composition: 3 percent

Slope: 0 to 1 percent

Geomorphic position: Low terraces

Hydric soil status: Not hydric

Soils that are 20 to 60 inches deep to a duripan

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Low terraces

Hydric soil status: Not hydric

418—Almendra loam, 0 to 1 percent slopes

Map Unit Setting

General location: West-central Butte County

Major uses: Orchard crops, row crops, and homesite development

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 110 to 225 feet (35 to 70 meters)

Mean annual precipitation: 20 to 26 inches (508 to 660 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 245 to 255 days

Map Unit Composition

Almendra loam—85 percent

Minor components—15 percent

Characteristics of Almendra Loam

Slope: 0 to 1 percent

Geomorphic position: Alluvial fans

Parent material: Loamy alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Almond, walnut, and kiwi orchards, beans, small grain crops, and valley oak

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: None

Restrictive feature: None identified

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 9.4 inches)

Natural drainage class: Well drained
Surface runoff (bare conditions): Negligible

Interpretive groups

Land capability, irrigated: 1
Land capability, nonirrigated: 3c-1
Storie index: 94 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Ap1—0 to 4 inches; loam
Ap2—4 to 14 inches; loam
Bw1—14 to 29 inches; loam
Bw2—29 to 40 inches; loam
Bw3—40 to 52 inches; loam
Bw4—52 to 74 inches; very fine sandy loam
Bw5—74 to 86 inches; very fine sandy loam

Minor Components in Map Unit 418

Conejo clay loam and similar soils

Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Distal alluvial fans
Hydric soil status: Not hydric

Soils that have a water table at a depth of 30 to 72 inches

Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Filled channels on alluvial fans
Hydric soil status: Not hydric

Soils that have weakly cemented material below a depth of 40 inches

Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

Vina fine sandy loam and similar soils

Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

Charger and similar soils

Composition: 1 percent
Slope: 0 to 1 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

Chico and similar soils

Composition: 1 percent
Slope: 0 to 1 percent
Geomorphic position: Low fan terraces
Hydric soil status: Not hydric

419—Conejo fine sandy loam, 0 to 1 percent slopes, overwash

Map Unit Setting

General location: West-central Butte County

Major uses: Orchard crops and homesite development

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 140 to 180 feet (43 to 56 meters)

Mean annual precipitation: 22 to 24 inches (559 to 610 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 245 to 255 days

Map Unit Composition

Conejo fine sandy loam, overwash—85 percent

Minor components—15 percent

Characteristics of Conejo Fine Sandy Loam, Overwash

Slope: 0 to 1 percent

Geomorphic position: Alluvial fans

Parent material: Coarse-loamy alluvium derived from igneous and metamorphic rocks
over fine-loamy alluvium derived from igneous, metamorphic, and sedimentary
rocks

Observed vegetation: Almond and walnut orchards and valley oak

Surface feature: The surface has been leveled for agriculture.

Texture of the surface layer: Fine sandy loam

Percentage of the surface covered by rock fragments: None

Restrictive feature: None identified

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very high (about 10.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Negligible

Interpretive groups

Land capability, irrigated: 1

Land capability, nonirrigated: 3c-1

Storie index: 89 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Ap—0 to 17 inches; fine sandy loam

Ab—17 to 35 inches; clay loam

A/B—35 to 45 inches; clay loam

Bw1—45 to 56 inches; clay loam

Bw2—56 to 62 inches; loam

Bw3—62 to 70 inches; loam

Bw4—70 to 72 inches; loam

Minor Components in Map Unit 419

Almendra loam and similar soils

Composition: 4 percent

Slope: 0 to 1 percent

Geomorphic position: Alluvial fans

Hydric soil status: Not hydric

Conejo clay loam and similar soils

Composition: 4 percent

Slope: 0 to 1 percent

Geomorphic position: Distal alluvial fans

Hydric soil status: Not hydric

Charger and similar soils

Composition: 3 percent

Slope: 0 to 1 percent

Geomorphic position: Alluvial fans

Hydric soil status: Not hydric

Soils that have a water table at a depth of 30 to 72 inches

Composition: 3 percent

Slope: 0 to 1 percent

Geomorphic position: Filled channels on alluvial fans

Hydric soil status: Not hydric

Typic Xerofluvents, coarse-loamy, and similar soils

Composition: 1 percent

Slope: 0 to 1 percent

Geomorphic position: Alluvial fans

Hydric soil status: Not hydric

420—Conejo clay loam, 0 to 1 percent slopes

Map Unit Setting

General location: West-central Butte County

Major uses: Orchard crops, row crops, and homesite development

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 110 to 180 feet (34 to 56 meters)

Mean annual precipitation: 20 to 24 inches (508 to 610 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 240 to 250 days

Map Unit Composition

Conejo clay loam—85 percent

Minor components—15 percent

Characteristics of Conejo Clay Loam

Slope: 0 to 1 percent

Geomorphic position: Distal alluvial fans

Parent material: Fine-loamy alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Almond and walnut orchards, beans, and valley oak

Surface feature: The surface has been leveled for agriculture.

Texture of the surface layer: Clay loam

Percentage of the surface covered by rock fragments: None

Restrictive feature: None identified

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very high (about 11.0 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Negligible

Interpretive groups

Land capability, irrigated: 1

Land capability, nonirrigated: 3c-1

Storie index: 85 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Ap—0 to 5 inches; clay loam

A1—5 to 19 inches; clay loam

A2—19 to 30 inches; clay loam

Bw1—30 to 48 inches; clay loam

Bw2—48 to 70 inches; sandy loam

Minor Components in Map Unit 420

Almendra and similar soils

Composition: 4 percent

Slope: 0 to 1 percent

Geomorphic position: Alluvial fans

Hydric soil status: Not hydric

Busacca and similar soils

Composition: 3 percent

Slope: 0 to 1 percent

Geomorphic position: Distal alluvial fans

Hydric soil status: Not hydric

Soils that have a water table at a depth of 30 to 72 inches

Composition: 3 percent

Slope: 0 to 1 percent

Geomorphic position: Filled channels on alluvial fans

Hydric soil status: Not hydric

Soils that are more than 40 inches deep to weakly cemented material

Composition: 3 percent

Slope: 0 to 1 percent

Geomorphic position: Distal alluvial fans

Hydric soil status: Not hydric

Edjobe and similar soils

Composition: 1 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Hydric soil status: Hydric

Bosquejo clay and similar soils*Composition:* 1 percent*Slope:* 0 to 1 percent*Geomorphic position:* Interfan basins*Hydric soil status:* Not hydric**425—Vina fine sandy loam, 0 to 1 percent slopes*****Map Unit Setting****General location:* Northwestern Butte County*Major uses:* Orchard crops and homesite development*Major land resource area:* 17*Landscape:* Sacramento Valley*Elevation:* 140 to 235 feet (43 to 72 meters)*Mean annual precipitation:* 22 to 25 inches (559 to 635 millimeters)*Mean annual air temperature:* 61 to 63 degrees F (16 to 17 degrees C)*Frost-free period:* 245 to 255 days***Map Unit Composition***

Vina fine sandy loam—85 percent

Minor components—15 percent

Characteristics of Vina Fine Sandy Loam*Slope:* 0 to 1 percent*Geomorphic position:* Alluvial fans*Parent material:* Coarse-loamy alluvium derived from igneous, metamorphic, and sedimentary rocks*Observed vegetation:* Almond and walnut orchards and valley oak*Texture of the surface layer:* Fine sandy loam*Percentage of the surface covered by rock fragments:* None*Restrictive feature:* None identified*Shrink-swell potential:* Low (LEP of less than 3)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* Rare*Annual ponding frequency:* None*Water table (zone of saturation):* None observed*Available water capacity:* Moderate (about 6.4 inches)*Natural drainage class:* Well drained*Surface runoff (bare conditions):* Negligible***Interpretive groups****Land capability, irrigated:* 2s-11*Land capability, nonirrigated:* 3c-11*Storie index:* 85 (revised)*Hydric soil status:* Not hydric*Hydrologic soil group:* B***Typical profile***

Ap1—0 to 3 inches; fine sandy loam

Ap2—3 to 11 inches; fine sandy loam

A1—11 to 23 inches; sandy loam

A2—23 to 37 inches; sandy loam

C1—37 to 50 inches; sandy loam

C2—50 to 54 inches; loamy coarse sand

C3—54 to 80 inches; coarse sand

Minor Components in Map Unit 425

Almendra and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Alluvial fans

Hydric soil status: Not hydric

Charger and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Alluvial fans

Hydric soil status: Not hydric

Redsluff and similar soils

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Fan terraces

Hydric soil status: Not hydric

Soils that have a water table at a depth of 40 to 80 inches

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Areas along stream channels on alluvial fans

Hydric soil status: Not hydric

Xerofluvents and similar soils

Composition: 1 percent

Slope: 0 to 1 percent

Geomorphic position: Flood plains

Hydric soil status: Not hydric

426—Vina loam, 0 to 1 percent slopes

Map Unit Setting

General location: Northwestern Butte County

Major uses: Orchard crops and homesite development

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 160 to 205 feet (49 to 63 meters)

Mean annual precipitation: 22 to 24 inches (559 to 610 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 245 to 255 days

Map Unit Composition

Vina loam—85 percent

Minor components—15 percent

Characteristics of Vina Loam

Slope: 0 to 1 percent

Geomorphic position: Alluvial fans

Parent material: Coarse-loamy alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Almond and walnut orchards and valley oak

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: None

Restrictive feature: None identified

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 8.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very low

Interpretive groups

Land capability, irrigated: 1

Land capability, nonirrigated: 3c-1

Storie index: 93 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Ap—0 to 4 inches; loam

A1—4 to 15 inches; loam

A2—15 to 28 inches; loam

A3—28 to 44 inches; loam

A4—44 to 63 inches; loam

Bw—63 to 72 inches; loam

Minor Components in Map Unit 426

Vina fine sandy loam and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Alluvial fans

Hydric soil status: Not hydric

Almendra and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Alluvial fans

Hydric soil status: Not hydric

Conejo clay loam and similar soils

Composition: 3 percent

Slope: 0 to 1 percent

Geomorphic position: Distal alluvial fans

Hydric soil status: Not hydric

Charger and similar soils

Composition: 1 percent

Slope: 0 to 1 percent

Geomorphic position: Alluvial fans

Hydric soil status: Not hydric

Ignord and similar soils

Composition: 1 percent

Slope: 0 to 1 percent

Geomorphic position: Wave-worked distal alluvial fans

Hydric soil status: Not hydric

439—Oxyaquic Xerofluvents clay, 0 to 1 percent slopes, frequently flooded

Map Unit Setting

General location: Southwestern Butte County

Major uses: Cropland and wildlife habitat

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 45 to 60 feet (15 to 19 meters)

Mean annual precipitation: 18 inches (457 millimeters)

Mean annual air temperature: 61 degrees F (16 degrees C)

Frost-free period: 240 days

Map Unit Composition

Oxyaquic Xerofluvents clay—85 percent

Minor components—15 percent

Characteristics of Oxyaquic Xerofluvents Clay

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Parent material: Silty and clayey alluvium generated from hydraulic mines and derived from sedimentary rocks over clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Rice, annual grasses and forbs, tules, willows, cottonwood, and scattered valley oak

Surface feature: The natural soil surface has been buried by hydraulic-mine sediment.

Texture of the surface layer: Clay

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (abrupt textural change): 24 to 80 inches

Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Hydrology has been altered by a drainage canal constructed to protect farmland and to carry hydraulic-mine sediment from the Cherokee Gold Mine.

Annual flooding frequency: Frequent

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 18 to 80 inches

Available water capacity: High (about 8.7 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Storie index: 24 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

Ap—0 to 10 inches; clay

C1—10 to 13 inches; silty clay
 C2—13 to 21 inches; silty clay
 C3—21 to 27 inches; silt loam
 C4—27 to 32 inches; silty clay
 C5—32 to 37 inches; silty clay loam
 Ab—37 to 55 inches; clay
 Bssb—55 to 63 inches; clay
 Bqmb—63 to 65 inches; duripan
 Bqb—65 to 80 inches; clay

Minor Components in Map Unit 439

Clear Lake clay, frequently flooded, and similar soils

Composition: 3 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Hydric soil status: Hydric

Oxyaquic Xerofluvents, fine-loamy, and similar soils

Composition: 3 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Hydric soil status: Hydric

Oxyaquic Xerofluvents, fine-silty, and similar soils

Composition: 3 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Hydric soil status: Hydric

Soils that have overwash less than 20 inches thick

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Hydric soil status: Hydric

Soils that are less than 40 inches deep to a duripan

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Hydric soil status: Hydric

Soils that are less than 40 inches deep to buried basin clay

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Hydric soil status: Hydric

440—Oxyaquic Xerofluvents silt loam, 0 to 1 percent slopes, frequently flooded

Map Unit Setting

General location: Southwestern and central Butte County

Major uses: Wildlife habitat, borrow pits, and flood retention

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 65 to 100 feet (20 to 31 meters)
Mean annual precipitation: 18 to 20 inches (457 to 508 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 240 to 250 days

Map Unit Composition

Oxyaquic Xerofluvents silt loam, frequently flooded—80 percent
 Minor components—20 percent

Characteristics of Oxyaquic Xerofluvents Silt Loam, Frequently Flooded

Slope: 0 to 1 percent
Geomorphic position: Flood plains within levees on flood basins and stream terraces
Parent material: Fine-loamy alluvium generated from hydraulic mines and derived from sedimentary rocks over clayey alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Willows, cottonwood, valley oak, and annual grasses and forbs
Surface feature: Hydraulic-mine sediment deposited within the confines of artificial levees
Texture of the surface layer: Stratified silt loam to very fine sandy loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (abrupt textural change): 24 to 80 inches
Shrink-swell potential: Low (LEP of less than 3)
Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Hydrology has been altered by a drainage canal constructed to protect farmland and to carry hydraulic-mine sediment from the Cherokee Gold Mine.
Annual flooding frequency: Frequent
Annual ponding frequency: Rare
Depth to a water table (zone of saturation): 24 to 80 inches
Available water capacity: High (about 8.4 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very low

Interpretive groups

Land capability, irrigated: 4w-2
Land capability, nonirrigated: 4w-2
Storie index: 58 (revised)
Hydric soil status: Hydric
Hydrologic soil group: C

Typical profile

A—0 to 9 inches; stratified silt loam to very fine sandy loam
 C1—9 to 18 inches; fine sand
 C2—18 to 25 inches; stratified silt loam to very fine sandy loam
 C3—25 to 33 inches; stratified silt loam to fine sand
 C4—33 to 44 inches; stratified silty clay loam to loam
 C5—44 to 51 inches; stratified silt loam to silty clay loam
 2Bssb—51 to 60 inches; clay

Minor Components in Map Unit 440

Clear Lake, overwash, and similar soils

Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Esquon, overwash, and similar soils*Composition:* 5 percent*Slope:* 0 to 1 percent*Geomorphic position:* Flood basins*Hydric soil status:* Hydric**Typic Xerofluvents and similar soils***Composition:* 4 percent*Slope:* 0 to 1 percent*Geomorphic position:* Flood plains*Hydric soil status:* Hydric**Riverwash***Composition:* 3 percent*Slope:* 0 to 1 percent*Geomorphic position:* Channels*Hydric soil status:* Hydric**Soils that are less than 10 inches deep to a duripan***Composition:* 3 percent*Slope:* 0 to 1 percent*Geomorphic position:* Channels*Hydric soil status:* Hydric**441—Oxyaquic Xerofluvents very fine sandy loam, 0 to 1 percent slopes*****Map Unit Setting****General location:* Southwestern Butte County*Major uses:* Cropland and wildlife habitat*Major land resource area:* 17*Landscape:* Sacramento Valley*Elevation:* 110 to 120 feet (35 to 38 meters)*Mean annual precipitation:* 21 inches (533 millimeters)*Mean annual air temperature:* 61 degrees F (16 degrees C)*Frost-free period:* 245 days***Map Unit Composition***

Oxyaquic Xerofluvents very fine sandy loam—90 percent

Minor components—10 percent

Characteristics of Oxyaquic Xerofluvents Very Fine Sandy Loam*Slope:* 0 to 1 percent*Geomorphic position:* Flood basins*Parent material:* Fine-loamy alluvium generated from hydraulic mines and derived from sedimentary rocks over clayey alluvium derived from igneous, metamorphic, and sedimentary rocks*Observed vegetation:* Rice*Surface feature:* The natural soil surface has been buried by hydraulic-mine sediment.*Texture of the surface layer:* Very fine sandy loam*Percentage of the surface covered by rock fragments:* None*Depth to a restrictive feature (abrupt textural change):* 24 to 80 inches*Shrink-swell potential:* Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Levees and leveling for agriculture have altered the hydrology, modifying the frequency and duration of saturation, ponding, and flooding.

Annual flooding frequency: Rare

Annual ponding frequency: Rare

Depth to a water table (zone of saturation): 24 to 80 inches

Available water capacity: Very high (about 10.2 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Negligible

Interpretive groups

Land capability, irrigated: 3w-2

Land capability, nonirrigated: 3w-2

Storie index: 70 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

Ap—0 to 6 inches; very fine sandy loam

C1—6 to 20 inches; silt loam

C2—20 to 30 inches; silt loam

C3—30 to 43 inches; stratified loamy fine sand to silt loam

C4—43 to 55 inches; silt loam

C5—55 to 72 inches; stratified loamy fine sand to silt loam

2Ab—72 to 75 inches; clay

Minor Components in Map Unit 441

Blavo clay and similar soils

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Hydric soil status: Hydric

Esquon, overwash, and similar soils

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Hydric soil status: Hydric

Oxyaquic Xerofluvents, fine, and similar soils

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Hydric soil status: Not hydric

Soils that are less than 40 inches deep to buried basin clay

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Hydric soil status: Not hydric

Human-transported fill from dredged materials

Composition: 1 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Hydric soil status: Not hydric

Soils that are less than 40 inches deep to a duripan*Composition:* 1 percent*Slope:* 0 to 1 percent*Geomorphic position:* Flood basins*Hydric soil status:* Not hydric**442—Durixerolls-Haploxerolls clay loams, 0 to 2 percent slopes*****Map Unit Setting****General location:* Northwestern Butte County*Major uses:* Irrigated crops, pasture, and homesite development*Major land resource area:* 17*Landscape:* Sacramento Valley*Elevation:* 140 to 190 feet (43 to 58 meters)*Mean annual precipitation:* 22 to 24 inches (559 to 610 millimeters)*Mean annual air temperature:* 61 to 63 degrees F (16 to 17 degrees C)*Frost-free period:* 245 to 250 days***Map Unit Composition***

Durixerolls clay loam—55 percent

Haploxerolls clay loam, deep—30 percent

Minor components—15 percent

Characteristics of Durixerolls Clay Loam*Slope:* 0 to 2 percent*Geomorphic position:* Alluvial fans*Parent material:* Fine-loamy alluvium over cemented, loamy alluvium derived from volcanic rocks*Observed vegetation:* Almond and prune orchards, wheat, hay, beans, and valley oak*Surface feature:* Most areas have been leveled for agriculture.*Texture of the surface layer:* Clay loam*Percentage of the surface covered by rock fragments:* None*Depth to a restrictive feature (duripan):* 20 to 40 inches*Shrink-swell potential:* Moderate (LEP of 3 to less than 6)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* Rare*Annual ponding frequency:* Occasional*Depth to a water table (zone of saturation):* 12 to 40 inches*Available water capacity:* Moderate (about 6.6 inches)*Natural drainage class:* Somewhat poorly drained*Surface runoff (bare conditions):* Very high***Interpretive groups****Land capability, irrigated:* 5w-2*Land capability, nonirrigated:* 5w-2*Storie index:* 45 (revised)*Hydric soil status:* Not hydric*Hydrologic soil group:* C***Typical profile***

Ap—0 to 6 inches; clay loam

Bw1—6 to 12 inches; clay loam

Bw2—12 to 24 inches; clay loam

Bw3—24 to 33 inches; clay loam

2Bqm—33 inches; duripan

Characteristics of Haploxerolls Clay Loam, Deep

Slope: 0 to 2 percent

Geomorphic position: Alluvial fans

Parent material: Fine-loamy alluvium over cemented, loamy alluvium derived from volcanic rocks

Observed vegetation: Almond and prune orchards, wheat, hay, beans, and valley oak

Surface feature: Most areas have been leveled for agriculture.

Texture of the surface layer: Clay loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (duripan): 40 to 60 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Rare

Annual ponding frequency: None

Depth to a water table (zone of saturation): 20 to 60 inches

Available water capacity: Very high (about 10.4 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 3s-2

Land capability, nonirrigated: 3s-2

Storie index: 76 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

Ap—0 to 5 inches; clay loam

Bw1—5 to 18 inches; clay loam

Bw2—18 to 29 inches; loam

Bw3—29 to 44 inches; loam

Bw4—44 to 57 inches; loam

2Bqm—57 inches; duripan

Minor Components in Map Unit 442

Haploxerolls loam, 40 to 60 inches deep, and similar soils

Composition: 3 percent

Slope: 0 to 2 percent

Geomorphic position: Alluvial fans

Hydric soil status: Not hydric

Almendra loam and similar soils

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Alluvial fans

Hydric soil status: Not hydric

Anita clay and similar soils

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Small basins on fan terraces

Hydric soil status: Hydric

Bosquejo clay and similar soils*Composition:* 2 percent*Slope:* 0 to 2 percent*Geomorphic position:* Interfan basins*Hydric soil status:* Not hydric**Conejo clay loam and similar soils***Composition:* 2 percent*Slope:* 0 to 2 percent*Geomorphic position:* Alluvial fans*Hydric soil status:* Not hydric**Galt clay loam and similar soils***Composition:* 2 percent*Slope:* 0 to 1 percent*Geomorphic position:* Small basins on fan terraces*Hydric soil status:* Hydric**Loamy soils that are 0 to 20 inches deep to a duripan***Composition:* 2 percent*Slope:* 0 to 2 percent*Geomorphic position:* Fan terraces*Hydric soil status:* Not hydric**443—Durixerolls-Haploxerolls loams, 0 to 2 percent slopes*****Map Unit Setting****General location:* Northwestern Butte County*Major uses:* Irrigated crops, pasture, and homesite development*Major land resource area:* 17*Landscape:* Sacramento Valley*Elevation:* 140 to 190 feet (44 to 58 meters)*Mean annual precipitation:* 22 to 24 inches (559 to 610 millimeters)*Mean annual air temperature:* 61 to 63 degrees F (16 to 17 degrees C)*Frost-free period:* 245 to 250 days***Map Unit Composition***

Durixerolls loam—60 percent

Haploxerolls loam, deep—25 percent

Minor components—15 percent

Characteristics of Durixerolls Loam*Slope:* 0 to 2 percent*Geomorphic position:* Alluvial fans*Parent material:* Fine-loamy alluvium over cemented, loamy alluvium derived from volcanic rocks*Observed vegetation:* Almond, walnut, and prune orchards, wheat, beans, and valley oak*Texture of the surface layer:* Loam*Percentage of the surface covered by rock fragments:* None*Depth to a restrictive feature (duripan):* 20 to 40 inches*Shrink-swell potential:* Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Rare

Annual ponding frequency: None

Depth to a water table (zone of saturation): 12 to 40 inches

Available water capacity: Low (about 4.5 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Storie index: 40 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

Ap—0 to 4 inches; loam

Bw1—4 to 10 inches; loam

Bw2—10 to 17 inches; loam

Bw3—17 to 23 inches; loam

Bw4—23 to 26 inches; loam

2Bqm—26 inches; duripan

Characteristics of Haploxerolls Loam, Deep

Slope: 0 to 2 percent

Geomorphic position: Alluvial fans

Parent material: Fine-loamy alluvium over cemented, loamy alluvium derived from volcanic rocks

Observed vegetation: Almond, walnut, and prune orchards, wheat, beans, and valley oak

Surface feature: Most areas have been leveled for agriculture.

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (duripan): 40 to 60 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Rare

Annual ponding frequency: None

Depth to a water table (zone of saturation): 20 to 60 inches

Available water capacity: High (about 8.7 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 3s-2

Land capability, nonirrigated: 3s-2

Storie index: 84 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

Ap1—0 to 5 inches; loam

Ap2—5 to 16 inches; loam

Bw1—16 to 27 inches; loam

Bw2—27 to 40 inches; loam

Bw3—40 to 48 inches; loam

Bw4—48 to 52 inches; sandy loam
2Bqm—52 inches; duripan

Minor Components in Map Unit 443

Haploxerolls clay loam and similar soils

Composition: 3 percent
Slope: 0 to 2 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

Galt clay loam and similar soils

Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Small basins on fan terraces
Hydric soil status: Hydric

Busacca clay loam and similar soils

Composition: 3 percent
Slope: 0 to 2 percent
Geomorphic position: Distal alluvial fans
Hydric soil status: Not hydric

Loamy soils that are 10 to 20 inches deep to a duripan

Composition: 3 percent
Slope: 0 to 2 percent
Geomorphic position: Fan terraces
Hydric soil status: Not hydric

Altered soils that have been ripped or consist of fill

Composition: 3 percent
Slope: 0 to 2 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

445—Chico loam, 0 to 1 percent slopes

Map Unit Setting

General location: Northwestern Butte County
Major uses: Orchard crops, row crops, pasture, and residential, commercial, and industrial development
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 140 to 225 feet (43 to 69 meters)
Mean annual precipitation: 22 to 24 inches (559 to 610 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 245 to 255 days

Map Unit Composition

Chico loam—85 percent
Minor components—15 percent

Characteristics of Chico Loam

Slope: 0 to 2 percent
Geomorphic position: Low fan terraces

Parent material: Loamy alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Almond and walnut orchards, annual grasses and forbs, and valley oak

Surface feature: The surface has been leveled for agriculture.

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: None

Restrictive feature: None identified

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 72 to 80 inches

Available water capacity: Very high (about 11.4 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Negligible

Interpretive groups

Land capability, irrigated: 1

Land capability, nonirrigated: 3c-1

Storie index: 94 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Ap—0 to 5 inches; loam

Bt1—5 to 10 inches; clay loam

Bt2—10 to 21 inches; clay loam

Bt3—21 to 32 inches; clay loam

Bt4—32 to 50 inches; loam

Bt5—50 to 70 inches; loam

Bt6—70 to 80 inches; loam

Minor Components in Map Unit 445

Redsluff and similar soils

Composition: 5 percent

Slope: 0 to 2 percent

Geomorphic position: Low fan terraces

Hydric soil status: Not hydric

Almendra and similar soils

Composition: 5 percent

Slope: 0 to 2 percent

Geomorphic position: Alluvial fans

Hydric soil status: Not hydric

Conejo clay loam and similar soils

Composition: 3 percent

Slope: 0 to 2 percent

Geomorphic position: Distal alluvial fans

Hydric soil status: Not hydric

Vina fine sandy loam and similar soils

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Inset fans

Hydric soil status: Not hydric

447—Charger fine sandy loam, 0 to 1 percent slopes

Map Unit Setting

General location: Northwestern Butte County

Major uses: Homesite development, irrigated crops, livestock grazing, riparian forest, wildlife habitat, and watershed

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 180 to 600 feet (56 to 183 meters)

Mean annual precipitation: 24 to 28 inches (610 to 711 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 250 to 255 days

Map Unit Composition

Charger fine sandy loam—80 percent

Minor components—20 percent

Characteristics of Charger Fine Sandy Loam

Slope: 0 to 2 percent

Geomorphic position: Proximal alluvial fans

Parent material: Coarse-loamy alluvium derived from igneous, metamorphic, and sedimentary rocks over gravelly alluvium derived from volcanic and metamorphic rocks

Observed vegetation: Walnut and almond orchards, cottonwood, willows, valley oak, and annual grasses and forbs

Texture of the surface layer: Fine sandy loam

Percentage of the surface covered by rock fragments: 0 to 15 percent medium, rounded gravel

Restrictive feature: None identified

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Rare

Annual ponding frequency: None

Depth to a water table (zone of saturation): 40 to 80 inches

Available water capacity: Moderate (about 7.2 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Very low

Interpretive groups

Land capability, irrigated: 2s-11

Land capability, nonirrigated: 3s-11

Storie index: 84 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Ap—0 to 3 inches; fine sandy loam

A1—3 to 7 inches; fine sandy loam

A2—7 to 15 inches; fine sandy loam

Bw1—15 to 32 inches; sandy loam

Bw2—32 to 42 inches; sandy loam

Bw3—42 to 53 inches; sandy loam
 Bw4—53 to 63 inches; sandy loam
 C—63 to 80 inches; extremely gravelly loamy coarse sand

Minor Components in Map Unit 447

Vina fine sandy loam and similar soils

Composition: 8 percent
Slope: 0 to 2 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

Redsluff and similar soils

Composition: 5 percent
Slope: 0 to 2 percent
Geomorphic position: Low fan terraces
Hydric soil status: Not hydric

Almendra and similar soils

Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

Loamy-skeletal soils

Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Proximal alluvial fans
Hydric soil status: Not hydric

Sandy-skeletal soils

Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Proximal alluvial fans
Hydric soil status: Not hydric

Wafap and similar soils

Composition: 1 percent
Slope: 0 to 2 percent
Geomorphic position: Low stream terraces
Hydric soil status: Not hydric

448—Haploxerolls clay loam, 0 to 2 percent slopes

Map Unit Setting

General location: Northwestern Butte County
Major uses: Irrigated crops, pasture, and homesite development
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 140 to 190 feet (43 to 59 meters)
Mean annual precipitation: 22 to 24 inches (559 to 610 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 245 to 255 days

Map Unit Composition

Haploxerolls clay loam—75 percent
 Minor components—25 percent

Characteristics of Haploxerolls Clay Loam

Slope: 0 to 2 percent

Geomorphic position: Alluvial fans

Parent material: Fine-loamy alluvium derived from volcanic rocks

Observed vegetation: Almond, walnut, and prune orchards, sugar beets, alfalfa, beans, and valley oak

Surface feature: Most areas have been leveled for agriculture.

Texture of the surface layer: Clay loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (dense material): 60 to 80 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Rare

Annual ponding frequency: None

Depth to a water table (zone of saturation): 40 to 80 inches

Available water capacity: Very high (about 11.3 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 3s-3

Land capability, nonirrigated: 2s-3

Storie index: 76 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

Ap1—0 to 5 inches; clay loam

Ap2—5 to 10 inches; clay loam

Bw1—10 to 24 inches; clay loam

Bw2—24 to 39 inches; clay loam

Bw3—39 to 66 inches; loam

Minor Components in Map Unit 448

Haploxerolls loam and similar soils

Composition: 5 percent

Slope: 0 to 2 percent

Geomorphic position: Alluvial fans

Hydric soil status: Not hydric

Busacca clay and similar soils

Composition: 4 percent

Slope: 0 to 2 percent

Geomorphic position: Distal alluvial fans

Hydric soil status: Not hydric

Soils that are 20 to 60 inches deep to a duripan or volcanic sediments

Composition: 4 percent

Slope: 0 to 2 percent

Geomorphic position: Alluvial fans

Hydric soil status: Not hydric

Soils that are 20 to 60 inches deep to a gravelly substratum

Composition: 4 percent

Slope: 0 to 2 percent

Geomorphic position: Alluvial fans

Hydric soil status: Not hydric

Soils that are less than 20 inches deep to a duripan

Composition: 4 percent

Slope: 0 to 2 percent

Geomorphic position: Fan terraces

Hydric soil status: Not hydric

Clayey soils that are 40 to 60 inches deep to a duripan

Composition: 4 percent

Slope: 0 to 2 percent

Geomorphic position: Basins on alluvial fans

Hydric soil status: Not hydric

449—Haploxerolls loam, 0 to 2 percent slopes

Map Unit Setting

General location: Northwestern Butte County

Major uses: Irrigated crops, pasture, and homesite development

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 150 to 200 feet (46 to 61 meters)

Mean annual precipitation: 22 to 24 inches (559 to 610 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 245 to 255 days

Map Unit Composition

Haploxerolls loam—75 percent

Minor components—25 percent

Characteristics of Haploxerolls Loam

Slope: 0 to 2 percent

Geomorphic position: Alluvial fans

Parent material: Fine-loamy alluvium derived from volcanic rocks

Observed vegetation: Almond, walnut, and prune orchards, sugar beets, alfalfa, beans, and valley oak

Surface feature: Most areas have been leveled for agriculture.

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (dense material): 60 to 80 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Rare

Annual ponding frequency: None

Depth to a water table (zone of saturation): 40 to 80 inches

Available water capacity: High (about 9.8 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very low

Interpretive groups

Land capability, irrigated: 3s-3

Land capability, nonirrigated: 2s-3

Storie index: 84 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

Ap1—0 to 4 inches; loam

Ap2—4 to 10 inches; loam

Bw1—10 to 24 inches; loam

Bw2—24 to 36 inches; loam

Bw3—36 to 52 inches; loam

C—52 to 60 inches; sandy loam

Minor Components in Map Unit 449

Soils that are 20 to 60 inches deep to a duripan or volcanic sediments

Composition: 5 percent

Slope: 0 to 2 percent

Geomorphic position: Alluvial fans

Hydric soil status: Not hydric

Soils that are less than 20 inches deep to a duripan

Composition: 4 percent

Slope: 0 to 2 percent

Geomorphic position: Fan terraces

Hydric soil status: Not hydric

Soils that are more than 34 inches deep to an extremely gravelly substratum

Composition: 4 percent

Slope: 0 to 2 percent

Geomorphic position: Alluvial fans

Hydric soil status: Not hydric

Redsluff gravelly loam and similar soils

Composition: 4 percent

Slope: 0 to 2 percent

Geomorphic position: Low fan terraces

Hydric soil status: Not hydric

Haploxerolls clay loam and similar soils

Composition: 4 percent

Slope: 0 to 2 percent

Geomorphic position: Alluvial fans

Hydric soil status: Not hydric

Busacca clay loam and similar soils

Composition: 4 percent

Slope: 0 to 2 percent

Geomorphic position: Distal alluvial fans

Hydric soil status: Not hydric

500—Lofgren-Blavo complex, 0 to 1 percent slopes

Map Unit Setting

General location: Southwestern Butte County

Major uses: Cropland and wildlife habitat

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 55 to 110 feet (18 to 34 meters)

Mean annual precipitation: 18 to 20 inches (457 to 508 millimeters)
Mean annual air temperature: 59 to 61 degrees F (15 to 16 degrees C)
Frost-free period: 240 to 245 days

Map Unit Composition

Lofgren clay—45 percent
 Blavo clay—40 percent
 Minor components—15 percent

Characteristics of Lofgren Clay

Slope: 0 to 1 percent
Geomorphic position: Flood basins
Parent material: Clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Rice and annual grasses and forbs
Surface features: The surface has been leveled for agriculture. Polygonal cracks open during dry periods.
Texture of the surface layer: Clay
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 40 to 60 inches
Shrink-swell potential: Very high (LEP of more than 9)
Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
Annual flooding frequency: Rare
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 60 inches
Available water capacity: Moderate (about 6.7 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Storie index: 17 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile

Ap—0 to 5 inches; clay
 Bssg1—5 to 12 inches; clay
 Bssg2—12 to 29 inches; clay
 Bkssg—29 to 38 inches; clay
 Bkg—38 to 44 inches; clay
 2Bkq—44 to 47 inches; clay loam
 2Bkqm1—47 to 62 inches; duripan
 2Bkqm2—62 to 82 inches; duripan

Characteristics of Blavo Clay

Slope: 0 to 1 percent
Geomorphic position: Flood basins

Parent material: Clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Rice and annual grasses and forbs

Surface features: The surface has been leveled for agriculture. Polygonal cracks open during dry periods.

Texture of the surface layer: Clay

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (duripan): 20 to 40 inches

Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: Rare

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 36 inches

Available water capacity: Moderate (about 5.3 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Storie index: 7 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

Ap—0 to 5 inches; clay

Bssg1—5 to 16 inches; clay

Bssg2—16 to 24 inches; clay

Bkssg—24 to 30 inches; clay

Bkg—30 to 36 inches; clay loam

2Bkqm—36 to 60 inches; duripan

Minor Components in Map Unit 500

Edjobe clay and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Hydric soil status: Hydric

Soils that are 10 to 20 inches deep to a duripan

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Leveled terraces

Hydric soil status: Hydric

Soils that formed in fill

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Filled sloughs on flood basins

Hydric soil status: Hydric

501—Lofgren-Blavo complex, 0 to 1 percent slopes, occasionally flooded

Map Unit Setting

General location: Southwestern Butte County

Major uses: Cropland and wildlife habitat

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 55 to 95 feet (18 to 30 meters)

Mean annual precipitation: 18 to 20 inches (457 to 508 millimeters)

Mean annual air temperature: 59 to 61 degrees F (15 to 16 degrees C)

Frost-free period: 240 to 245 days

Map Unit Composition

Lofgren clay, occasionally flooded—45 percent

Blavo clay, occasionally flooded—40 percent

Minor components—15 percent

Characteristics of Lofgren Clay, Occasionally Flooded

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Parent material: Clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Rice and annual grasses and forbs

Surface features: The surface has been leveled for agriculture. Polygonal cracks open during dry periods.

Texture of the surface layer: Clay

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (duripan): 40 to 60 inches

Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: Occasional

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 60 inches

Available water capacity: Moderate (about 6.4 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Storie index: 17 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

Ap1—0 to 5 inches; clay

Ap2—5 to 12 inches; clay

Bssg—12 to 22 inches; clay

Bkssg1—22 to 30 inches; clay
 Bkssg2—30 to 41 inches; clay
 Bk—41 to 45 inches; clay loam
 2Bkqm—45 to 60 inches; duripan

Characteristics of Blavo Clay, Occasionally Flooded

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Parent material: Clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Rice and annual grasses and forbs

Surface features: The surface has been leveled for agriculture. Polygonal cracks open during dry periods.

Texture of the surface layer: Clay

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (duripan): 20 to 40 inches

Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: Occasional

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 40 inches

Available water capacity: Moderate (about 5.3 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Storie index: 7 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

Ap1—0 to 6 inches; clay

Ap2—6 to 10 inches; clay

Bssg—10 to 22 inches; clay

Bkssg—22 to 29 inches; clay

Bkg—29 to 36 inches; clay loam

2Bkqm—36 to 42 inches; duripan

Minor Components in Map Unit 501

Clear Lake clay and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Hydric soil status: Hydric

Soils that formed in fill

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Filled sloughs on flood basins

Hydric soil status: Hydric

Soils that are 10 to 20 inches deep to a duripan

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Leveled terraces

Hydric soil status: Hydric

502—Blavo silt loam, 0 to 1 percent slopes, overwash, occasionally flooded

Map Unit Setting

General location: Southwestern Butte County

Major uses: Cropland and wildlife habitat

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 75 to 95 feet (24 to 29 meters)

Mean annual precipitation: 19 inches (483 millimeters)

Mean annual air temperature: 61 degrees F (16 degrees C)

Frost-free period: 240 days

Map Unit Composition

Blavo silt loam, overwash, occasionally flooded—80 percent

Minor components—20 percent

Characteristics of Blavo Silt Loam, Overwash, Occasionally Flooded

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Parent material: Silty alluvium over clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Rice and annual grasses and forbs

Surface features: The surface has been leveled for agriculture. Polygonal cracks open during dry periods.

Texture of the surface layer: Silt loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (duripan): 20 to 40 inches

Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: Occasional

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 36 inches

Available water capacity: Moderate (about 5.4 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Storie index: 14 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

Ap—0 to 7 inches; silt loam

Bssgb1—7 to 14 inches; clay

Bssgb2—14 to 22 inches; clay

Bssgb3—22 to 29 inches; clay

Bkgb—29 to 36 inches; clay

2Bkqmb—36 to 50 inches; duripan

Minor Components in Map Unit 502

Blavo clay, occasionally flooded, and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Hydric soil status: Hydric

Columbia taxadjunct very fine sandy loam and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Channels

Hydric soil status: Hydric

Lofgren clay, occasionally flooded, and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Hydric soil status: Hydric

Lofgren silt loam, overwash, and similar soils

Composition: 3 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Hydric soil status: Hydric

Columbia sand and similar soils

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Channels

Hydric soil status: Hydric

519—Edjobe silty clay, 0 to 1 percent slopes

Map Unit Setting

General location: West-central Butte County

Major uses: Grain crops, row crops, and orchard crops

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 110 to 150 feet (35 to 46 meters)

Mean annual precipitation: 20 to 22 inches (508 to 559 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 240 to 250 days

Map Unit Composition

Edjobe silty clay—85 percent
 Minor components—15 percent

Characteristics of Edjobe Silty Clay

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Parent material: Clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Rice, prune orchards, almond orchards, and annual grasses and forbs

Surface features: The surface has been leveled for agriculture. Polygonal cracks open during dry periods.

Texture of the surface layer: Silty clay

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (duripan): 60 to 80 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: None

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 10 to 80 inches

Available water capacity: Very high (about 10.0 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Storie index: 29 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

Ap—0 to 8 inches; silty clay

Bssg—8 to 25 inches; silty clay

Bkssg—25 to 32 inches; silty clay

Bw1—32 to 48 inches; silty clay loam

2Bw2—48 to 60 inches; clay loam

2Bq—60 to 69 inches; clay loam

2Bkqm—69 to 75 inches; duripan

Minor Components in Map Unit 519

Busacca and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Distal alluvial fans

Hydric soil status: Not hydric

Conejo clay loam and similar soils

Composition: 5 percent

Slope: 0 to 1 percent
Geomorphic position: Distal alluvial fans
Hydric soil status: Not hydric

Esquon silty clay and similar soils

Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

520—Esquon-Neerdobe complex, 0 to 1 percent slopes

Map Unit Setting

General location: Southwestern Butte County
Major uses: Cropland and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 55 to 170 feet (17 to 52 meters)
Mean annual precipitation: 18 to 25 inches (457 to 635 millimeters)
Mean annual air temperature: 59 to 63 degrees F (15 to 17 degrees C)
Frost-free period: 240 to 250 days

Map Unit Composition

Esquon clay—60 percent
 Neerdobe clay—30 percent
 Minor components—10 percent

Characteristics of Esquon Clay

Slope: 0 to 1 percent
Geomorphic position: Flood basins
Parent material: Clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Rice and annual grasses and forbs
Surface features: The surface has been leveled for agriculture. Polygonal cracks open during dry periods.
Texture of the surface layer: Clay
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 40 to 60 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: Rare
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 60 inches
Available water capacity: High (about 8.9 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2
Storie index: 24 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile

Ap—0 to 5 inches; clay
 Bssg—5 to 11 inches; clay
 Bss1—11 to 22 inches; clay
 Bss2—22 to 35 inches; clay
 Bkss1—35 to 46 inches; clay
 Bkss2—46 to 50 inches; silty clay
 Bk—50 to 56 inches; silty clay
 2Bkqm—56 to 67 inches; duripan

Characteristics of Neerdobe Clay

Slope: 0 to 1 percent
Geomorphic position: Flood basins
Parent material: Clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Rice and annual grasses and forbs
Surface features: The surface has been leveled for agriculture. Polygonal cracks open during dry periods.
Texture of the surface layer: Clay
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: Rare
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 40 inches
Available water capacity: Moderate (about 5.8 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Storie index: 10 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile

A—0 to 5 inches; clay
 Bssg1—5 to 15 inches; clay
 Bssg2—15 to 23 inches; clay
 Bssg3—23 to 28 inches; clay
 Bk—28 to 33 inches; clay
 2Bkq—33 to 38 inches; loam
 2Bkqm—38 to 56 inches; duripan

Minor Components in Map Unit 520

Lofgren clay and similar soils

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Hydric soil status: Hydric

Eastbiggs and similar soils

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Terraces

Hydric soil status: Hydric

Soils that formed in fill and do not have a duripan

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Filled sloughs on flood basins

Hydric soil status: Hydric

Urban land

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Esquon loamy sand to silty clay, overwash, and similar soils

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Hydric soil status: Hydric

521—Neerdobe silt loam, 0 to 1 percent slopes, overwash

Map Unit Setting

General location: Central Butte County

Major uses: Cropland and wildlife habitat

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 100 to 150 feet (32 to 47 meters)

Mean annual precipitation: 21 to 24 inches (533 to 610 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 250 days

Map Unit Composition

Neerdobe silt loam, overwash—85 percent

Minor components—15 percent

Characteristics of Neerdobe Silt Loam, Overwash

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Parent material: Flood-deposited, silty alluvium over clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Rice and annual grasses and forbs

Surface features: Overwash originating from the Cherokee Gold Mine consists of silt loam and loamy very fine sand that have buried the natural surface layer of clay. The surface has been leveled for agriculture.

Texture of the surface layer: Silt loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (duripan): 20 to 60 inches

Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: Rare

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 60 inches

Available water capacity: Moderate (about 7.4 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Storie index: 24 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

Ap—0 to 7 inches; silt loam

C1—7 to 16 inches; silt loam

C2—16 to 20 inches; loamy very fine sand

Ab—20 to 33 inches; clay

Bssb—33 to 47 inches; clay

2Bkqmb—47 to 52 inches; cemented, very gravelly duripan

2Bkqb—52 to 60 inches; duripan

Minor Components in Map Unit 521

Oxyaquic Xerofluvents, loamy overwash, and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Hydric soil status: Hydric

Esquon clay and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Hydric soil status: Hydric

Neerdobe clay and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Hydric soil status: Hydric

522—Clear Lake silty clay loam, 0 to 1 percent slopes, overwash, frequently flooded

Map Unit Setting

General location: Southwestern Butte County

Major uses: Hunting and wildlife habitat

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 55 feet (17 meters)

Mean annual precipitation: 18 inches (457 millimeters)

Mean annual air temperature: 59 degrees F (15 degrees C)

Frost-free period: 240 days

Map Unit Composition

Clear Lake silty clay loam, overwash—80 percent

Minor components—15 percent

Characteristics of Clear Lake Silty Clay Loam, Overwash

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Parent material: Flood-deposited, silty alluvium over silty and clayey alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Tules, swamp timothy, smartweed, sourdock, spike rush, bulrush, arnica ssp., willows, cottonwood, bermudagrass, and cattails

Surface feature: The surface layer of silty clay loam is flood-deposited overwash 5 to 20 inches thick.

Texture of the surface layer: Silty clay loam

Percentage of the surface covered by rock fragments: None

Restrictive feature: None identified

Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: Frequent

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 80 inches

Available water capacity: High (about 9.7 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Storie index: 31 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

A—0 to 6 inches; silty clay loam
 Akb—6 to 12 inches; silty clay
 Bkssb1—12 to 35 inches; silty clay
 Bkssb2—35 to 50 inches; silty clay
 Bkgb1—50 to 60 inches; silty clay
 Bkgb2—60 to 70 inches; silty clay
 Bkgb3—70 to 72 inches; silty clay

Minor Components in Map Unit 522**Oxyaquic Xerofluvents silty clay loam and similar soils***Composition:* 5 percent*Slope:* 0 to 1 percent*Geomorphic position:* Flood basins*Hydric soil status:* Hydric**Esquon silty clay loam, overwash, and similar soils***Composition:* 3 percent*Slope:* 0 to 1 percent*Geomorphic position:* Flood basins*Hydric soil status:* Hydric**Wet soils***Composition:* 3 percent*Slope:* 0 to 1 percent*Geomorphic position:* Intermittent ponds, channels, and sloughs on flood basins*Hydric soil status:* Hydric**Soils that are more than 60 inches deep to a duripan***Composition:* 2 percent*Slope:* 0 to 1 percent*Geomorphic position:* Flood basins*Hydric soil status:* Hydric**Saturated soils that are not subject to cracking***Composition:* 2 percent*Slope:* 0 to 1 percent*Geomorphic position:* Flood basins*Hydric soil status:* Hydric**523—Esquon silty clay loam, 0 to 1 percent slopes, overwash, frequently flooded*****Map Unit Setting****General location:* Southwestern Butte County and northwestern Sutter County*Major uses:* Hunting and wildlife habitat*Major land resource area:* 17*Landscape:* Sacramento Valley*Elevation:* 55 feet (17 meters)*Mean annual precipitation:* 18 inches (457 millimeters)*Mean annual air temperature:* 59 degrees F (15 degrees C)*Frost-free period:* 240 days

Map Unit Composition

Esquon silty clay loam, overwash—80 percent
 Minor components—20 percent

Characteristics of Esquon Silty Clay Loam, Overwash

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Parent material: Flood-deposited, silty alluvium over silty and clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Cocklebur, spikerush, curly dock, bulrush, willows, bermudagrass, cottonwood, and tules

Surface features: Flood-deposited overwash is 6 to 12 inches thick. In some areas alteration of the surface has improved the habitat for wetland wildlife.

Texture of the surface layer: Silty clay loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (duripan): 40 to 60 inches

Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: Frequent

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 60 inches

Available water capacity: High (about 7.7 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Storie index: 47 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

A—0 to 10 inches; silty clay loam

Ab—10 to 18 inches; silty clay

Bkssb—18 to 46 inches; silty clay

Bkqmb—46 to 60 inches; duripan

Minor Components in Map Unit 523

Wet soils

Composition: 6 percent

Slope: 0 percent

Geomorphic position: Intermittent ponds, channels, and sloughs on flood basins

Hydric soil status: Hydric

Neerdobe silty clay loam or clay loam, overwash, and similar soils*Composition:* 4 percent*Slope:* 0 to 1 percent*Geomorphic position:* Flood basins*Hydric soil status:* Hydric**Oxyaquic Xerofluvents and similar soils***Composition:* 4 percent*Slope:* 0 to 1 percent*Geomorphic position:* Flood basins*Hydric soil status:* Hydric**Esquon silt loam, overwash, and similar soils***Composition:* 2 percent*Slope:* 0 to 1 percent*Geomorphic position:* Flood basins*Hydric soil status:* Hydric**Soils that are more than 60 inches deep to a duripan***Composition:* 2 percent*Slope:* 0 to 1 percent*Geomorphic position:* Flood basins*Hydric soil status:* Hydric**Saturated soils that are not subject to cracking***Composition:* 2 percent*Slope:* 0 to 1 percent*Geomorphic position:* Flood basins*Hydric soil status:* Hydric**525—Govstanford loam, 0 to 1 percent slopes*****Map Unit Setting****General location:* West-central Butte County*Major uses:* Homesite development, orchard crops, and pasture*Major land resource area:* 17*Landscape:* Sacramento Valley*Elevation:* 120 to 160 feet (38 to 49 meters)*Mean annual precipitation:* 22 to 23 inches (559 to 584 millimeters)*Mean annual air temperature:* 61 to 63 degrees F (16 to 17 degrees C)*Frost-free period:* 245 to 250 days***Map Unit Composition***

Govstanford loam—85 percent

Minor components—15 percent

Characteristics of Govstanford Loam*Slope:* 0 to 1 percent*Geomorphic position:* Alluvial fans above flood basins*Parent material:* Coarse-loamy alluvium generated from hydraulic mines and derived from igneous and metamorphic rocks over clayey alluvium derived from igneous, metamorphic, and sedimentary rocks*Observed vegetation:* Almond, walnut, and prune orchards, pasture, and valley oak*Surface feature:* The surface has been leveled for agriculture.*Texture of the surface layer:* Loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (abrupt textural change): 20 to 36 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: The hydrology has been changed by the construction of levees.

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 20 to 72 inches

Available water capacity: Moderate (about 5.5 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Very low

Interpretive groups

Land capability, irrigated: 3s-3

Land capability, nonirrigated: 3s-3

Storie index: 52 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

Ap1—0 to 3 inches; loam

Ap2—3 to 11 inches; loam

C1—11 to 18 inches; sandy loam

C2—18 to 25 inches; silt loam

C3—25 to 34 inches; silt loam

2Assg—34 to 42 inches; clay

2Bssg1—42 to 61 inches; silty clay

2Bssg2—61 to 72 inches; silty clay

Minor Components in Map Unit 525

Soils that have overwash less than 20 inches thick

Composition: 8 percent

Slope: 0 to 1 percent

Geomorphic position: Alluvial fans above flood basins

Hydric soil status: Not hydric

Typic Xerofluvents, coarse-loamy, and similar soils

Composition: 4 percent

Slope: 0 to 1 percent

Geomorphic position: Alluvial fans above flood basins

Hydric soil status: Not hydric

Edjobe silty clay and similar soils

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Hydric soil status: Hydric

Gravelly soils

Composition: 1 percent

Slope: 0 to 1 percent

Geomorphic position: Alluvial fans

Hydric soil status: Not hydric

526—Govstanford loam, 0 to 1 percent slopes, occasionally flooded

Map Unit Setting

General location: West-central Butte County

Major uses: Orchard crops, row crops, and wildlife habitat

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 110 to 140 feet (34 to 44 meters)

Mean annual precipitation: 20 to 23 inches (508 to 584 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 245 to 250 days

Map Unit Composition

Govstanford loam, occasionally flooded—85 percent

Minor components—15 percent

Characteristics of Govstanford Loam, Occasionally Flooded

Slope: 0 to 1 percent

Geomorphic position: Flood plains above flood basins

Parent material: Coarse-loamy alluvium generated from hydraulic mines and derived from igneous and metamorphic rocks over clayey alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Almond, walnut, and prune orchards and riparian forest

Surface feature: The surface has been leveled for agriculture.

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (abrupt textural change): 20 to 36 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: The hydrology has been changed by the construction of levees.

Annual flooding frequency: Occasional

Annual ponding frequency: None

Depth to a water table (zone of saturation): 20 to 72 inches

Available water capacity: Moderate (about 5.5 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Very low

Interpretive groups

Land capability, irrigated: 3w-2

Land capability, nonirrigated: 3w-2

Storie index: 52 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

Ap1—0 to 3 inches; loam

Ap2—3 to 11 inches; loam

C1—11 to 18 inches; sandy loam

C2—18 to 25 inches; silt loam

C3—25 to 34 inches; silt loam

2Assg—34 to 42 inches; clay

2Bssg1—42 to 61 inches; silty clay

2Bssg2—61 to 72 inches; silty clay

Minor Components in Map Unit 526

Xerofluents sandy loam, frequently flooded, and similar soils

Composition: 10 percent

Slope: 0 to 1 percent

Geomorphic position: Flood plains above flood basins

Hydric soil status: Not hydric

Oxyaquic Xerofluents sandy loam, frequently flooded, and similar soils

Composition: 3 percent

Slope: 0 to 1 percent

Geomorphic position: Flood plains above flood basins

Hydric soil status: Hydric

Edjobe silty clay and similar soils

Composition: 1 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Hydric soil status: Hydric

Gravelly soils

Composition: 1 percent

Slope: 0 to 1 percent

Geomorphic position: Flood plains above flood basins

Hydric soil status: Not hydric

528—Neerdobe clay loam, 0 to 1 percent slopes

Map Unit Setting

General location: Southwestern Butte County

Major uses: Cropland

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 85 to 90 feet (26 to 28 meters)

Mean annual precipitation: 20 inches (508 millimeters)

Mean annual air temperature: 61 degrees F (16 degrees C)

Frost-free period: 245 days

Map Unit Composition

Neerdobe clay loam—90 percent

Minor components—10 percent

Characteristics of Neerdobe Clay Loam

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Parent material: Clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Rice, annual grasses and forbs, and scattered valley oak

Surface features: The surface has been leveled for agriculture. Polygonal cracks open during dry periods.

Texture of the surface layer: Clay loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (duripan): 20 to 40 inches

Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: Rare

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 40 inches

Available water capacity: Low (about 4.2 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Storie index: 13 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

A—0 to 10 inches; clay loam

Bss1—10 to 18 inches; clay

Bss2—18 to 25 inches; clay

2Bqm—25 inches; duripan

Minor Components in Map Unit 528

Gridley clay loam and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Margins of terraces and flood basins

Hydric soil status: Not hydric

Soils that are frequently flooded

Composition: 3 percent

Slope: 0 to 1 percent

Geomorphic position: Irrigation ditches and channels on flood basins

Hydric soil status: Hydric

Soils that are 10 to 20 inches deep to a duripan

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Flood basins

Hydric soil status: Hydric

550—Dunstone-Loafercreek complex, dry, 1 to 15 percent slopes

Map Unit Setting

General location: Southeastern Butte County and northwestern Yuba County

Major uses: Livestock grazing, homesite development, wildlife habitat, and watershed

Major land resource area: 18

Landscape: Northern Sierra Nevada foothills

Elevation: 245 to 1,200 feet (76 to 366 meters)

Mean annual precipitation: 28 to 40 inches (711 to 1,016 millimeters)

Mean annual air temperature: 57 to 63 degrees F (14 to 17 degrees C)

Frost-free period: 230 to 260 days

Map Unit Composition

Dunstone loam, dry—60 percent

Loafercreek silt loam, dry—20 percent

Minor components—20 percent

Characteristics of Dunstone Loam, Dry

Slope: 1 to 15 percent

Geomorphic position: Metavolcanic hills

Parent material: Loamy residuum weathered from metavolcanic rocks

Observed vegetation: Annual grasses and forbs and blue oak

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: 0 to 5 percent subangular cobbles, 0 to 2 percent subangular stones, 0 to 1 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 2.8 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 2 inches; loam

BA1—2 to 7 inches; loam

Bt1—7 to 10 inches; loam

Bt2—10 to 16 inches; loam

Cr—16 inches; bedrock

Characteristics of Loafercreek Silt Loam, Dry

Slope: 1 to 15 percent

Geomorphic position: Metavolcanic hills

Parent material: Loamy residuum and/or colluvium derived from metavolcanic rocks

Observed vegetation: Annual grasses and forbs and blue oak

Texture of the surface layer: Silt loam

Percentage of the surface covered by rock fragments: 0 to 25 percent coarse, subangular gravel

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.6 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A1—0 to 2 inches; silt loam

A2—2 to 4 inches; silt loam

BAt—4 to 11 inches; loam

Bt1—11 to 20 inches; loam

Bt2—20 to 29 inches; loam

Crt—29 inches; bedrock

Minor Components in Map Unit 550

Auburn loam and similar soils

Composition: 9 percent

Slope: 1 to 15 percent

Geomorphic position: Metavolcanic hills

Hydric soil status: Not hydric

Loamy-skeletal soils that are 10 to 20 inches deep to bedrock

Composition: 5 percent

Slope: 1 to 15 percent

Geomorphic position: Metavolcanic hills

Hydric soil status: Not hydric

Lomarica and similar soils

Composition: 2 percent

Slope: 1 to 15 percent

Geomorphic position: Metavolcanic hills

Hydric soil status: Not hydric

Clayey soils that are 10 to 20 inches deep to paralithic bedrock

Composition: 2 percent

Slope: 1 to 15 percent

Geomorphic position: Metavolcanic hills

Hydric soil status: Not hydric

Rock outcrop

Composition: 2 percent

Slope: 1 to 15 percent

Geomorphic position: Metavolcanic hills

Hydric soil status: Not hydric

**551—Dunstone-Lomarica-Argonaut taxadjunct complex,
15 to 30 percent slopes**

Map Unit Setting

General location: Southeastern Butte County and northwestern Yuba County

Major uses: Livestock grazing, homesite development, wildlife habitat, and watershed

Major land resource area: 18

Landscape: Northern Sierra Nevada foothills
Elevation: 200 to 1,600 feet (61 to 488 meters)
Mean annual precipitation: 28 to 40 inches (711 to 1,016 millimeters)
Mean annual air temperature: 57 to 63 degrees F (14 to 17 degrees C)
Frost-free period: 230 to 260 days

Map Unit Composition

Dunstone loam, dry—35 percent
 Lomarica loam—15 percent
 Argonaut taxadjunct loam—15 percent
 Minor components—35 percent

Characteristics of Dunstone Loam, Dry

Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic hills
Parent material: Loamy residuum weathered from metavolcanic rocks
Observed vegetation: Annual grasses and forbs and blue oak
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 5 percent subangular cobbles, 0 to 2 percent subangular stones, 0 to 1 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)
Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 2.8 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile

A—0 to 2 inches; loam
 BA_t—2 to 7 inches; loam
 B_t1—7 to 10 inches; loam
 B_t2—10 to 16 inches; loam
 Cr—16 inches; bedrock

Characteristics of Lomarica Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic hills
Parent material: Clayey colluvium and/or residuum weathered from metavolcanic rocks
Observed vegetation: Annual grasses and forbs and blue oak
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, subangular gravel, 0 to 2 percent subangular cobbles
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 3.1 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-4
Land capability, nonirrigated: 4e-4
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile

A—0 to 1 inch; loam
 BA_t—1 to 5 inches; loam
 B_t1—5 to 9 inches; clay loam
 B_t2—9 to 12 inches; clay loam
 2B_t3—12 to 25 inches; extremely gravelly clay loam
 2B_tss—25 to 32 inches; extremely gravelly clay
 2Cr—32 inches; bedrock

Characteristics of Argonaut Taxadjunct Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes on metavolcanic hills

Parent material: Clayey colluvium and/or residuum weathered from metavolcanic rocks

Observed vegetation: Annual grasses and forbs and blue oak

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: 0 to 5 percent medium, subangular gravel, 0 to 5 percent subangular cobbles

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-4
Land capability, nonirrigated: 4e-4
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile

A—0 to 2 inches; loam
 B_t1—2 to 8 inches; clay loam
 B_t2—8 to 14 inches; clay
 B_t3—14 to 20 inches; clay
 BC_t1—20 to 26 inches; clay
 BC_t2—26 to 30 inches; clay loam
 Cr—30 inches; bedrock

Minor Components in Map Unit 551

Loafercreek and similar soils

Composition: 8 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on metavolcanic hills

Hydric soil status: Not hydric

Katskillhill and similar soils

Composition: 8 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on metavolcanic hills

Hydric soil status: Not hydric

Auburn loam and similar soils

Composition: 5 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on metavolcanic hills

Hydric soil status: Not hydric

Clayey-skeletal soils that are more than 40 inches deep to paralithic bedrock

Composition: 5 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on metavolcanic hills

Hydric soil status: Not hydric

Clayey-skeletal soils that are less than 20 inches deep to paralithic bedrock

Composition: 5 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on metavolcanic hills

Hydric soil status: Not hydric

Rock outcrop

Composition: 4 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on metavolcanic hills

Hydric soil status: Not hydric

552—Dunstone-Loafercreek complex, 2 to 15 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Livestock grazing, wildlife habitat, homesite development, watershed, and recreation

Major land resource area: 18

Landscape: Northern Sierra Nevada foothills

Elevation: 245 to 1,200 feet (76 to 366 meters)

Mean annual precipitation: 29 to 40 inches (737 to 1,016 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 250 to 260 days

Map Unit Composition

Dunstone gravelly loam—45 percent

Loafercreek gravelly loam—40 percent

Minor components—15 percent

Characteristics of Dunstone Gravelly Loam

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and side slopes on metavolcanic hills

Parent material: Loamy residuum weathered from metavolcanic rocks

Observed vegetation: Interior live oak, blue oak, foothill pine, whiteleaf manzanita, buckbrush, toyon, and annual grasses and forbs

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 0 to 5 percent subangular cobbles, 0 to 2 percent subangular stones, 0 to 1 percent subangular boulders

Depth to a restrictive feature: 10 to 20 inches to paralithic bedrock; 20 to 40 inches to lithic bedrock

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A1—0 to 4 inches; gravelly loam

A2—4 to 6 inches; gravelly loam

Bt1—6 to 10 inches; gravelly loam

Bt2—10 to 15 inches; very gravelly loam

Crt—15 to 37 inches; bedrock

R—37 inches; bedrock

Characteristics of Loafercreek Gravelly Loam

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and side slopes on metavolcanic hills

Parent material: Loamy residuum and/or colluvium derived from metavolcanic rocks

Observed vegetation: Interior live oak, blue oak, foothill pine, whiteleaf manzanita, buckbrush, toyon, and annual grasses and forbs

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 25 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 10 percent subangular stones

Depth to a restrictive feature: 20 to 40 inches to paralithic bedrock; 40 to 60 inches to lithic bedrock

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.2 inches)

Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-4
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material
A—0.5 inch to 2 inches; gravelly loam
BA1—2 to 6 inches; gravelly loam
Bt1—6 to 12 inches; loam
Bt2—12 to 23 inches; gravelly loam
Bt3—23 to 31 inches; gravelly silt loam
Crt—31 to 42 inches; bedrock
R—42 inches; bedrock

Minor Components in Map Unit 552

Rock outcrop

Composition: 5 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and side slopes on metavolcanic hills
Hydric soil status: Not hydric

Loamy soils that are less than 20 inches deep to lithic bedrock

Composition: 3 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and side slopes on metavolcanic hills
Hydric soil status: Not hydric

Loamy-skeletal soils that are 20 to 40 inches deep to bedrock

Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and side slopes on metavolcanic hills
Hydric soil status: Not hydric

Mounthope and similar soils

Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and side slopes on metavolcanic hills
Hydric soil status: Not hydric

Fine-loamy soils that are 40 to 60 inches deep to lithic bedrock

Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and side slopes on metavolcanic hills
Hydric soil status: Not hydric

Soils in areas where the surface has been altered by leveling

Composition: 1 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and side slopes on metavolcanic hills
Hydric soil status: Not hydric

553—Dunstone-Loafercreek complex, 15 to 30 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Livestock grazing, wildlife habitat, watershed, homesite development, and recreation

Major land resource area: 18

Landscape: Northern Sierra Nevada foothills

Elevation: 245 to 1,200 feet (76 to 366 meters)

Mean annual precipitation: 29 to 40 inches (737 to 1,016 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 250 to 260 days

Map Unit Composition

Dunstone gravelly loam—45 percent

Loafercreek gravelly loam—40 percent

Minor components—15 percent

Characteristics of Dunstone Gravelly Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes on metavolcanic hills

Parent material: Loamy colluvium derived from metavolcanic rocks

Observed vegetation: Interior live oak, blue oak, foothill pine, whiteleaf manzanita, buckbrush, toyon, and annual grasses and forbs

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 0 to 5 percent subangular cobbles, 0 to 2 percent subangular stones, 0 to 1 percent subangular boulders

Depth to a restrictive feature: 10 to 20 inches to paralithic bedrock; 20 to 40 inches to lithic bedrock

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A1—0 to 4 inches; gravelly loam

A2—4 to 6 inches; gravelly loam

Bt1—6 to 10 inches; gravelly loam

Bt2—10 to 15 inches; very gravelly loam

Crt—15 to 37 inches; bedrock

R—37 inches; bedrock

Characteristics of Loafercreek Gravelly Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes on metavolcanic hills

Parent material: Loamy colluvium and/or residuum weathered from metavolcanic rocks

Observed vegetation: Interior live oak, blue oak, foothill pine, whiteleaf manzanita, buckbrush, toyon, and annual grasses and forbs

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 25 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 10 percent subangular stones

Depth to a restrictive feature: 20 to 40 inches to paralithic bedrock; 40 to 60 inches to lithic bedrock

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.2 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material

A—0.5 inch to 2 inches; gravelly loam

BAt—2 to 6 inches; gravelly loam

Bt1—6 to 12 inches; loam

Bt2—12 to 23 inches; gravelly loam

Bt3—23 to 31 inches; gravelly silt loam

Crt—31 to 42 inches; bedrock

R—42 inches; bedrock

Minor Components in Map Unit 553

Rock outcrop

Composition: 5 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on metavolcanic hills

Hydric soil status: Not hydric

Loamy soils that are 10 to 20 inches deep to lithic bedrock

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on metavolcanic hills

Hydric soil status: Not hydric

Loamy-skeletal soils that are 20 to 40 inches deep to bedrock

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on metavolcanic hills

Hydric soil status: Not hydric

Mounthope and similar soils*Composition:* 2 percent*Slope:* 15 to 30 percent*Geomorphic position:* Side slopes on metavolcanic hills*Hydric soil status:* Not hydric**Fine-loamy soils that are 20 to 40 inches deep to lithic bedrock***Composition:* 2 percent*Slope:* 15 to 30 percent*Geomorphic position:* Side slopes on metavolcanic hills*Hydric soil status:* Not hydric**Soils in areas where the surface has been altered by leveling***Composition:* 1 percent*Slope:* 15 to 30 percent*Geomorphic position:* Side slopes on metavolcanic hills*Hydric soil status:* Not hydric**Loamy-skeletal soils that are 10 to 20 inches deep to bedrock***Composition:* 1 percent*Slope:* 15 to 30 percent*Geomorphic position:* Side slopes on metavolcanic hills*Hydric soil status:* Not hydric**554—Dunstone-Loafercreek complex, 30 to 50 percent slopes*****Map Unit Setting****General location:* Central Butte County*Major uses:* Livestock grazing, wildlife habitat, watershed, and recreation*Major land resource area:* 18*Landscape:* Northern Sierra Nevada foothills*Elevation:* 400 to 1,200 feet (122 to 366 meters)*Mean annual precipitation:* 29 to 40 inches (737 to 1,016 millimeters)*Mean annual air temperature:* 61 to 63 degrees F (16 to 17 degrees C)*Frost-free period:* 250 to 260 days***Map Unit Composition***

Dunstone gravelly loam—45 percent

Loafercreek gravelly loam—40 percent

Minor components—15 percent

Characteristics of Dunstone Gravelly Loam*Slope:* 30 to 50 percent*Geomorphic position:* Backslopes on metavolcanic hills*Parent material:* Loamy residuum and/or colluvium derived from metavolcanic rocks*Observed vegetation:* Interior live oak, blue oak, foothill pine, whiteleaf manzanita, buckbrush, toyon, and annual grasses and forbs*Texture of the surface layer:* Gravelly loam*Percentage of the surface covered by rock fragments:* 0 to 5 percent subangular cobbles, 0 to 2 percent subangular stones, 0 to 1 percent subangular boulders*Depth to a restrictive feature:* 10 to 20 inches to paralithic bedrock; 20 to 40 inches to lithic bedrock*Shrink-swell potential:* Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A1—0 to 4 inches; gravelly loam

A2—4 to 6 inches; gravelly loam

Bt1—6 to 10 inches; gravelly loam

Bt2—10 to 15 inches; very gravelly loam

Crt—15 to 37 inches; bedrock

R—37 inches; bedrock

Characteristics of Loafercreek Gravelly Loam

Slope: 30 to 50 percent

Geomorphic position: Backslopes on metavolcanic hills

Parent material: Loamy residuum and/or colluvium derived from metavolcanic rocks

Observed vegetation: Interior live oak, blue oak, foothill pine, whiteleaf manzanita, buckbrush, toyon, and annual grasses and forbs

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 25 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 10 percent subangular stones

Depth to a restrictive feature: 20 to 40 inches to paralithic bedrock; 40 to 60 inches to lithic bedrock

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.2 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material

A—0.5 inch to 2 inches; gravelly loam

BAt—2 to 6 inches; gravelly loam

Bt1—6 to 12 inches; loam

Bt2—12 to 23 inches; gravelly loam

Bt3—23 to 31 inches; gravelly silt loam

Crt—31 to 42 inches; bedrock

R—42 inches; bedrock

Minor Components in Map Unit 554

Rock outcrop

Composition: 5 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on metavolcanic hills

Hydric soil status: Not hydric

Loamy soils that are 10 to 20 inches deep to lithic bedrock

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on metavolcanic hills

Hydric soil status: Not hydric

Loamy-skeletal soils that are 20 to 40 inches deep to bedrock

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on metavolcanic hills

Hydric soil status: Not hydric

Mounthope and similar soils

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on metavolcanic hills

Hydric soil status: Not hydric

Loamy-skeletal soils that are 40 to 60 inches deep to lithic bedrock

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on metavolcanic hills

Hydric soil status: Not hydric

555—Dunstone-Loafercreek complex, 50 to 90 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Livestock grazing, wildlife habitat, watershed, and recreation

Major land resource area: 18

Landscape: Northern Sierra Nevada foothills

Elevation: 400 to 1,200 feet (122 to 366 meters)

Mean annual precipitation: 29 to 40 inches (737 to 1,016 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 250 to 260 days

Map Unit Composition

Dunstone gravelly loam—45 percent

Loafercreek gravelly loam—40 percent

Minor components—15 percent

Characteristics of Dunstone Gravelly Loam

Slope: 50 to 90 percent

Geomorphic position: Backslopes on metavolcanic hills

Parent material: Loamy colluvium and/or residuum weathered from metavolcanic rocks

Observed vegetation: Interior live oak, blue oak, foothill pine, whiteleaf manzanita, buckbrush, toyon, and annual grasses and forbs

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 0 to 5 percent subangular cobbles, 0 to 2 percent subangular stones, 0 to 1 percent subangular boulders

Depth to a restrictive feature: 10 to 20 inches to paralithic bedrock; 20 to 40 inches to lithic bedrock

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A1—0 to 4 inches; gravelly loam

A2—4 to 6 inches; gravelly loam

Bt1—6 to 10 inches; gravelly loam

Bt2—10 to 15 inches; very gravelly loam

Crt—15 to 37 inches; bedrock

R—37 inches; bedrock

Characteristics of Loafercreek Gravelly Loam

Slope: 50 to 90 percent

Geomorphic position: Backslopes on metavolcanic hills

Parent material: Loamy colluvium derived from metavolcanic rocks

Observed vegetation: Interior live oak, blue oak, foothill pine, whiteleaf manzanita, buckbrush, toyon, and annual grasses and forbs

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 25 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 10 percent subangular stones

Depth to a restrictive feature: 20 to 40 inches to paralithic bedrock; 40 to 60 inches to lithic bedrock

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.2 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material

A—0.5 inch to 2 inches; gravelly loam

BAt—2 to 6 inches; gravelly loam

Bt1—6 to 12 inches; loam

Bt2—12 to 23 inches; gravelly loam

Bt3—23 to 31 inches; gravelly silt loam

Crt—31 to 42 inches; bedrock

R—42 inches; bedrock

Minor Components in Map Unit 555

Rock outcrop

Composition: 9 percent

Slope: 50 to 90 percent

Geomorphic position: Backslopes on metavolcanic hills

Hydric soil status: Not hydric

Loamy soils that are less than 10 inches deep to lithic bedrock

Composition: 3 percent

Slope: 50 to 90 percent

Geomorphic position: Backslopes on metavolcanic hills

Hydric soil status: Not hydric

Loamy-skeletal soils that are 20 to 40 inches deep to bedrock

Composition: 2 percent

Slope: 50 to 90 percent

Geomorphic position: Backslopes on metavolcanic hills

Hydric soil status: Not hydric

Soils in areas where the surface has been altered by cutting

Composition: 1 percent

Slope: 50 to 90 percent

Geomorphic position: Backslopes on metavolcanic hills

Hydric soil status: Not hydric

556—Mounthope-Hartsmill complex, 2 to 15 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Wildlife habitat, watershed, and homesite development

Major land resource area: 18

Landscape: Northern Sierra Nevada foothills

Elevation: 1,200 to 2,000 feet (366 to 610 meters)

Mean annual precipitation: 40 to 45 inches (1,016 to 1,143 millimeters)

Mean annual air temperature: 57 to 59 degrees F (14 to 15 degrees C)

Frost-free period: 240 to 260 days

Map Unit Composition

Mounthope loam—50 percent

Hartsmill gravelly loam—40 percent

Minor components—10 percent

Characteristics of Mounthope Loam

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on metavolcanic hills

Parent material: Loamy residuum weathered from metavolcanic rocks

Observed vegetation: Blue oak, foothill pine, interior live oak, manzanita, buckbrush, toyon, and Pacific poison oak

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.7 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; loam

Bt1—3 to 7 inches; loam

Bt2—7 to 15 inches; loam

Bt3—15 to 22 inches; gravelly clay loam

Bt4—22 to 26 inches; gravelly clay loam

Bt5—26 to 31 inches; very gravelly clay loam

Bt6—31 to 42 inches; very gravelly clay loam

Bt7—42 to 52 inches; gravelly clay loam

Cr—52 inches; bedrock

Characteristics of Hartsmill Gravelly Loam

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on metavolcanic hills

Parent material: Loamy residuum weathered from metavolcanic rocks

Observed vegetation: Interior live oak, blue oak, foothill pine, manzanita, buckbrush, toyon, and Pacific poison oak

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 60 to 80 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.7 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 3e-7

Land capability, nonirrigated: 3e-7

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; gravelly loam

Bt1—3 to 6 inches; very gravelly loam

Bt2—6 to 13 inches; very gravelly loam

Bt3—13 to 24 inches; very gravelly loam

BCT1—24 to 35 inches; very cobbly clay loam

BCT2—35 to 62 inches; extremely cobbly clay loam

Crt—62 inches; bedrock

Minor Components in Map Unit 556

Loamy-skeletal soils that are 20 to 40 inches deep to bedrock

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on metavolcanic hills

Hydric soil status: Not hydric

Fine-loamy soils that are more than 60 inches deep to paralithic bedrock

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on metavolcanic hills

Hydric soil status: Not hydric

Rock outcrop

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on metavolcanic hills

Hydric soil status: Not hydric

Soils in areas where the surface has been altered by clearing

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on metavolcanic hills

Hydric soil status: Not hydric

Dunstone gravelly loam and similar soils

Composition: 1 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on metavolcanic hills

Hydric soil status: Not hydric

Fine-loamy soils that are 20 to 40 inches deep to paralithic bedrock

Composition: 1 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on metavolcanic hills

Hydric soil status: Not hydric

557—Mounthope-Hartsmill complex, 15 to 30 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Wildlife habitat, watershed, and homesite development

Major land resource area: 18

Landscape: Northern Sierra Nevada foothills

Elevation: 1,200 to 2,000 feet (366 to 610 meters)

Mean annual precipitation: 40 to 45 inches (1,016 to 1,143 millimeters)

Mean annual air temperature: 57 to 59 degrees F (14 to 15 degrees C)

Frost-free period: 240 to 260 days

Map Unit Composition

Mounthope loam—50 percent

Hartsmill gravelly loam—40 percent

Minor components—10 percent

Characteristics of Mounthope Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes on metavolcanic hills

Parent material: Loamy residuum and/or colluvium derived from metavolcanic rocks

Observed vegetation: Blue oak, foothill pine, interior live oak, manzanita, buckbrush, toyon, and Pacific poison oak

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.7 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; loam

Bt1—3 to 7 inches; loam

Bt2—7 to 15 inches; loam

Bt3—15 to 22 inches; gravelly clay loam

Bt4—22 to 26 inches; gravelly clay loam

Bt5—26 to 31 inches; very gravelly clay loam

Bt6—31 to 42 inches; very gravelly clay loam
 Bt7—42 to 52 inches; gravelly clay loam
 Cr—52 inches; bedrock

Characteristics of Hartsmill Gravelly Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes on metavolcanic hills

Parent material: Loamy residuum and/or colluvium derived from metavolcanic rocks

Observed vegetation: Interior live oak, blue oak, foothill pine, manzanita, buckbrush, toyon, and Pacific poison oak

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 60 to 80 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.7 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; gravelly loam

Bt1—3 to 6 inches; very gravelly loam

Bt2—6 to 13 inches; very gravelly loam

Bt3—13 to 24 inches; very gravelly loam

BCt1—24 to 35 inches; very cobbly clay loam

BCt2—35 to 62 inches; extremely cobbly clay loam

Crt—62 inches; bedrock

Minor Components in Map Unit 557

Loamy-skeletal soils that are 20 to 40 inches deep to bedrock

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on metavolcanic hills

Hydric soil status: Not hydric

Fine-loamy soils that are more than 60 inches deep to paralithic bedrock

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on metavolcanic hills

Hydric soil status: Not hydric

Rock outcrop

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on metavolcanic hills

Hydric soil status: Not hydric

Dunstone gravelly loam and similar soils

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on metavolcanic hills

Hydric soil status: Not hydric

Fine-loamy soils that are 20 to 40 inches deep to paralithic bedrock

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on metavolcanic hills

Hydric soil status: Not hydric

558—Hartsmill-Mounthope complex, 30 to 50 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Wildlife habitat and watershed

Major land resource area: 18

Landscape: Northern Sierra Nevada foothills

Elevation: 1,200 to 2,000 feet (366 to 610 meters)

Mean annual precipitation: 40 to 45 inches (1,016 to 1,143 millimeters)

Mean annual air temperature: 57 to 59 degrees F (14 to 15 degrees C)

Frost-free period: 240 to 260 days

Map Unit Composition

Hartsmill gravelly loam—55 percent

Mounthope loam—30 percent

Minor components—15 percent

Characteristics of Hartsmill Gravelly Loam

Slope: 30 to 50 percent

Geomorphic position: Backslopes on metavolcanic hills

Parent material: Loamy colluvium and/or residuum weathered from metavolcanic rocks

Observed vegetation: Interior live oak, blue oak, foothill pine, manzanita, buckbrush, toyon, and Pacific poison oak

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 60 to 80 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.7 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

*Interpretive groups**Land capability, irrigated:* 6e-1*Land capability, nonirrigated:* 6e-1*Hydric soil status:* Not hydric*Hydrologic soil group:* B*Typical profile*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; gravelly loam

Bt1—3 to 6 inches; very gravelly loam

Bt2—6 to 13 inches; very gravelly loam

Bt3—13 to 24 inches; very gravelly loam

BCt1—24 to 35 inches; very cobbly clay loam

BCt2—35 to 62 inches; extremely cobbly clay loam

Cr—62 inches; bedrock

Characteristics of Mounthope Loam*Slope:* 30 to 50 percent*Geomorphic position:* Backslopes on metavolcanic hills*Parent material:* Loamy colluvium and/or residuum weathered from metavolcanic rocks*Observed vegetation:* Shrubs, live oak, and foothill pine*Texture of the surface layer:* Slightly decomposed plant material*Percentage of the surface covered by rock fragments:* 0 to 15 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders*Depth to a restrictive feature (paralithic bedrock):* 40 to 60 inches*Shrink-swell potential:* Moderate (LEP of 3 to less than 6)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* None*Annual ponding frequency:* None*Water table (zone of saturation):* None observed*Available water capacity:* Moderate (about 6.7 inches)*Natural drainage class:* Well drained*Surface runoff (bare conditions):* High*Interpretive groups**Land capability, irrigated:* 6e-1*Land capability, nonirrigated:* 6e-1*Hydric soil status:* Not hydric*Hydrologic soil group:* B*Typical profile*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; loam

Bt1—3 to 7 inches; loam

Bt2—7 to 15 inches; loam

Bt3—15 to 22 inches; gravelly clay loam

Bt4—22 to 26 inches; gravelly clay loam

Bt5—26 to 31 inches; very gravelly clay loam

Bt6—31 to 42 inches; very gravelly clay loam

Bt7—42 to 52 inches; gravelly clay loam

Cr—52 inches; bedrock

Minor Components in Map Unit 558

Loamy-skeletal soils that are 20 to 40 inches deep to bedrock

Composition: 7 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on metavolcanic hills

Hydric soil status: Not hydric

Fine-loamy soils that are more than 60 inches deep to paralithic bedrock

Composition: 6 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on metavolcanic hills

Hydric soil status: Not hydric

Dunstone gravelly loam and similar soils

Composition: 1 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on metavolcanic hills

Hydric soil status: Not hydric

Fine-loamy soils that are 20 to 40 inches deep to paralithic bedrock

Composition: 1 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on metavolcanic hills

Hydric soil status: Not hydric

559—Hartsmill-Mounthope complex, 50 to 70 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Wildlife habitat and watershed

Major land resource area: 18

Landscape: Northern Sierra Nevada foothills

Elevation: 1,200 to 2,000 feet (366 to 610 meters)

Mean annual precipitation: 40 to 45 inches (1,016 to 1,143 millimeters)

Mean annual air temperature: 57 to 59 degrees F (14 to 15 degrees C)

Frost-free period: 240 to 260 days

Map Unit Composition

Hartsmill gravelly loam—55 percent

Mounthope loam—30 percent

Minor components—15 percent

Characteristics of Hartsmill Gravelly Loam

Slope: 50 to 70 percent

Geomorphic position: Backslopes on metavolcanic hills

Parent material: Loamy colluvium and/or residuum weathered from metavolcanic rocks

Observed vegetation: Interior live oak, blue oak, foothill pine, manzanita, buckbrush, toyon, and Pacific poison oak

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 60 to 80 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.7 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; gravelly loam

Bt1—3 to 6 inches; very gravelly loam

Bt2—6 to 13 inches; very gravelly loam

Bt3—13 to 24 inches; very gravelly loam

BCT1—24 to 35 inches; very cobbly clay loam

BCT2—35 to 62 inches; extremely cobbly clay loam

Crt—62 inches; bedrock

Characteristics of Mounthope Loam

Slope: 50 to 70 percent

Geomorphic position: Backslopes on metavolcanic hills

Parent material: Loamy colluvium and/or residuum weathered from metavolcanic rocks

Observed vegetation: Blue oak, foothill pine, interior live oak, manzanita, buckbrush, toyon, and Pacific poison oak

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.7 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; loam

Bt1—3 to 7 inches; loam
 Bt2—7 to 15 inches; loam
 Bt3—15 to 22 inches; gravelly clay loam
 Bt4—22 to 26 inches; gravelly clay loam
 Bt5—26 to 31 inches; very gravelly clay loam
 Bt6—31 to 42 inches; very gravelly clay loam
 Bt7—42 to 52 inches; gravelly clay loam
 Cr—52 inches; bedrock

Minor Components in Map Unit 559

Loamy-skeletal soils that are 20 to 40 inches deep to bedrock

Composition: 5 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on metavolcanic hills

Hydric soil status: Not hydric

Fine-loamy soils that are more than 60 inches deep to paralithic bedrock

Composition: 5 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on metavolcanic hills

Hydric soil status: Not hydric

Dunstone gravelly loam and similar soils

Composition: 3 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on metavolcanic hills

Hydric soil status: Not hydric

Fine-loamy soils that are 20 to 40 inches deep to paralithic bedrock

Composition: 2 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on metavolcanic hills

Hydric soil status: Not hydric

560—Hartsmill-Mounthope complex, 70 to 90 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Wildlife habitat and watershed

Major land resource area: 18

Landscape: Northern Sierra Nevada foothills

Elevation: 1,200 to 2,000 feet (366 to 610 meters)

Mean annual precipitation: 40 to 45 inches (1,016 to 1,143 millimeters)

Mean annual air temperature: 57 to 59 degrees F (14 to 15 degrees C)

Frost-free period: 240 to 260 days

Map Unit Composition

Hartsmill gravelly loam—50 percent

Mounthope loam—30 percent

Minor components—20 percent

Characteristics of Hartsmill Gravelly Loam

Slope: 70 to 90 percent

Geomorphic position: Backslopes on metavolcanic hills

Parent material: Loamy colluvium and/or residuum weathered from metavolcanic rocks

Observed vegetation: Interior live oak, blue oak, foothill pine, manzanita, buckbrush, toyon, and Pacific poison oak

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 60 to 80 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.7 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; gravelly loam

Bt1—3 to 6 inches; very gravelly loam

Bt2—6 to 13 inches; very gravelly loam

Bt3—13 to 24 inches; very gravelly loam

BCt1—24 to 35 inches; very cobbly clay loam

BCt2—35 to 62 inches; extremely cobbly clay loam

Crt—62 inches; bedrock

Characteristics of Mounthope Loam

Slope: 70 to 90 percent

Geomorphic position: Backslopes on metavolcanic hills

Parent material: Loamy colluvium and/or residuum weathered from metavolcanic rocks

Observed vegetation: Blue oak, foothill pine, interior live oak, manzanita, buckbrush, toyon, and Pacific poison oak

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.7 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

*Interpretive groups**Land capability, irrigated: 8**Land capability, nonirrigated: 8**Hydric soil status: Not hydric**Hydrologic soil group: B**Typical profile*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; loam

Bt1—3 to 7 inches; loam

Bt2—7 to 15 inches; loam

Bt3—15 to 22 inches; gravelly clay loam

Bt4—22 to 26 inches; gravelly clay loam

Bt5—26 to 31 inches; very gravelly clay loam

Bt6—31 to 42 inches; very gravelly clay loam

Bt7—42 to 52 inches; gravelly clay loam

Cr—52 inches; bedrock

Minor Components in Map Unit 560**Rock outcrop***Composition: 7 percent**Slope: 70 to 90 percent**Geomorphic position: Backslopes on metavolcanic hills**Hydric soil status: Not hydric***Fine-loamy soils that are 10 to 20 inches deep to bedrock***Composition: 6 percent**Slope: 70 to 90 percent**Geomorphic position: Backslopes on metavolcanic hills**Hydric soil status: Not hydric***Dunstone gravelly loam and similar soils***Composition: 4 percent**Slope: 70 to 90 percent**Geomorphic position: Backslopes on metavolcanic hills**Hydric soil status: Not hydric***Loamy-skeletal soils that are 10 to 20 inches deep to bedrock***Composition: 3 percent**Slope: 70 to 90 percent**Geomorphic position: Backslopes on metavolcanic hills**Hydric soil status: Not hydric***561—Bigridge-Minniecreek complex, 2 to 15 percent slopes*****Map Unit Setting****General location: Central Butte County**Major uses: Wildlife habitat, homesite development, watershed, and limited timber production**Major land resource area: 18**Landscape: Northern Sierra Nevada foothills**Elevation: 2,000 to 2,595 feet (610 to 792 meters)**Mean annual precipitation: 45 to 50 inches (1,143 to 1,270 millimeters)*

Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)

Frost-free period: 230 to 240 days

Map Unit Composition

Bigridge loam—50 percent

Minniecreek loam—35 percent

Minor components—15 percent

Characteristics of Bigridge Loam

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and footslopes on metavolcanic hills

Parent material: Loamy residuum weathered from metavolcanic rocks

Observed vegetation: Ponderosa pine, California black oak, interior live oak, whiteleaf manzanita, Pacific poison oak, and toyon

Texture of the surface layer: Moderately decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 30 percent coarse, angular gravel, 0 to 5 percent angular cobbles, 0 to 5 percent angular stones

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 3e-7

Land capability, nonirrigated: 3e-7

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oe—0 to 1 inch; moderately decomposed plant material

A—1 to 5 inches; loam

BAt—5 to 9 inches; gravelly loam

Bt1—9 to 15 inches; gravelly loam

Bt2—15 to 20 inches; gravelly loam

BCt1—20 to 27 inches; very gravelly loam

BCt2—27 to 36 inches; extremely gravelly loam

BCt3—36 to 51 inches; very gravelly loam

Crt—51 to 62 inches; bedrock

Characteristics of Minniecreek Loam

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and footslopes on metavolcanic hills

Parent material: Loamy residuum weathered from metavolcanic rocks

Observed vegetation: Ponderosa pine, California black oak, interior live oak, whiteleaf manzanita, Pacific poison oak, and toyon

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: 0 to 40 percent coarse, angular gravel, 0 to 25 percent angular cobbles, 0 to 15 percent angular stones, 0 to 10 percent angular boulders

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 5.7 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 3e-7

Land capability, nonirrigated: 3e-7

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 2 inches; loam

BAt—2 to 8 inches; loam

Bt1—8 to 15 inches; loam

Bt2—15 to 24 inches; silty clay loam

BCt—24 to 32 inches; silty clay loam

Crt1—32 to 47 inches; bedrock

Crt2—47 to 58 inches; bedrock

Cr—58 to 75 inches; bedrock

Minor Components in Map Unit 561

Rock outcrop

Composition: 5 percent

Slope: 8 to 15 percent

Geomorphic position: Ridgetops on metavolcanic hills

Hydric soil status: Not hydric

Loamy-skeletal soils that are 40 to 60 inches deep to bedrock

Composition: 3 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and footslopes on metavolcanic hills

Hydric soil status: Not hydric

Hartsmill and similar soils

Composition: 3 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and footslopes on metavolcanic hills

Hydric soil status: Not hydric

Loamy soils that are 10 to 20 inches deep to paralithic bedrock

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and footslopes on metavolcanic hills

Hydric soil status: Not hydric

Mounthope and similar soils

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and footslopes on metavolcanic hills

Hydric soil status: Not hydric

562—Bigridge-Minniecreek complex, 15 to 30 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Wildlife habitat, homesite development, watershed, and limited timber production

Major land resource area: 18

Landscape: Northern Sierra Nevada foothills

Elevation: 2,000 to 2,595 feet (610 to 792 meters)

Mean annual precipitation: 45 to 50 inches (1,143 to 1,270 millimeters)

Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)

Frost-free period: 230 to 240 days

Map Unit Composition

Bigridge loam—50 percent

Minniecreek loam—35 percent

Minor components—15 percent

Characteristics of Bigridge Loam

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and side slopes on metavolcanic hills

Parent material: Loamy colluvium and/or residuum weathered from metavolcanic rocks

Observed vegetation: Ponderosa pine, California black oak, interior live oak, whiteleaf manzanita, Pacific poison oak, and toyon

Texture of the surface layer: Moderately decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 30 percent coarse, angular gravel, 0 to 5 percent angular cobbles, 0 to 5 percent angular stones

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oe—0 to 1 inch; moderately decomposed plant material

A—1 to 5 inches; loam

BAt—5 to 9 inches; gravelly loam

Bt1—9 to 15 inches; gravelly loam

Bt2—15 to 20 inches; gravelly loam

Bct1—20 to 27 inches; very gravelly loam

Bct2—27 to 36 inches; extremely gravelly loam

Bct3—36 to 51 inches; very gravelly loam

Crt—51 to 62 inches; bedrock

Characteristics of Minniecreek Loam

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and side slopes on metavolcanic hills

Parent material: Loamy colluvium and/or residuum weathered from metavolcanic rocks

Observed vegetation: Ponderosa pine, California black oak, interior live oak, whiteleaf manzanita, Pacific poison oak, and toyon

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: 0 to 40 percent coarse, angular gravel, 0 to 25 percent angular cobbles, 0 to 15 percent angular stones, 0 to 10 percent angular boulders

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 5.7 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 2 inches; loam

BAt—2 to 8 inches; loam

Bt1—8 to 15 inches; loam

Bt2—15 to 24 inches; silty clay loam

BCt—24 to 32 inches; silty clay loam

Crt1—32 to 47 inches; bedrock

Crt2—47 to 58 inches; bedrock

Cr—58 to 75 inches; bedrock

Minor Components in Map Unit 562

Rock outcrop

Composition: 5 percent

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and side slopes on metavolcanic hills

Hydric soil status: Not hydric

Loamy-skeletal soils that are 40 to 60 inches deep to bedrock

Composition: 3 percent

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and side slopes on metavolcanic hills

Hydric soil status: Not hydric

Hartsmill and similar soils

Composition: 3 percent

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and side slopes on metavolcanic hills

Hydric soil status: Not hydric

Loamy soils that are 10 to 20 inches deep to paralithic bedrock*Composition:* 2 percent*Slope:* 15 to 30 percent*Geomorphic position:* Ridgetops and side slopes on metavolcanic hills*Hydric soil status:* Not hydric**Mounthope and similar soils***Composition:* 2 percent*Slope:* 15 to 30 percent*Geomorphic position:* Ridgetops and side slopes on metavolcanic hills*Hydric soil status:* Not hydric**563—Bigridge-Minniecreek complex, 30 to 50 percent slopes*****Map Unit Setting****General location:* Central Butte County*Major uses:* Wildlife habitat, watershed, and limited timber production*Major land resource area:* 18*Landscape:* Northern Sierra Nevada foothills*Elevation:* 1,800 to 2,595 feet (549 to 792 meters)*Mean annual precipitation:* 45 to 50 inches (1,143 to 1,270 millimeters)*Mean annual air temperature:* 55 to 57 degrees F (13 to 14 degrees C)*Frost-free period:* 230 to 240 days***Map Unit Composition***

Bigridge loam—50 percent

Minniecreek loam—35 percent

Minor components—15 percent

Characteristics of Bigridge Loam*Slope:* 30 to 50 percent*Geomorphic position:* Backslopes on metavolcanic hills*Parent material:* Loamy colluvium and/or residuum weathered from metavolcanic rocks*Observed vegetation:* Ponderosa pine, California black oak, interior live oak, whiteleaf manzanita, Pacific poison oak, and toyon*Texture of the surface layer:* Moderately decomposed plant material*Percentage of the surface covered by rock fragments:* 0 to 30 percent coarse, angular gravel, 0 to 5 percent angular cobbles, 0 to 5 percent angular stones*Depth to a restrictive feature (paralithic bedrock):* 40 to 60 inches*Shrink-swell potential:* Low (LEP of less than 3)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* None*Annual ponding frequency:* None*Water table (zone of saturation):* None observed*Available water capacity:* Low (about 4.9 inches)*Natural drainage class:* Well drained*Surface runoff (bare conditions):* High*Interpretive groups**Land capability, irrigated:* 6e-1*Land capability, nonirrigated:* 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oe—0 to 1 inch; moderately decomposed plant material

A—1 to 5 inches; loam

BAt—5 to 9 inches; gravelly loam

Bt1—9 to 15 inches; gravelly loam

Bt2—15 to 20 inches; gravelly loam

BCt1—20 to 27 inches; very gravelly loam

BCt2—27 to 36 inches; extremely gravelly loam

BCt3—36 to 51 inches; very gravelly loam

Crt—51 to 62 inches; bedrock

Characteristics of Minniecreek Loam

Slope: 30 to 50 percent

Geomorphic position: Backslopes on metavolcanic hills

Parent material: Loamy colluvium and/or residuum weathered from metavolcanic rocks

Observed vegetation: Ponderosa pine, California black oak, interior live oak, whiteleaf manzanita, Pacific poison oak, and toyon

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: 0 to 40 percent coarse, angular gravel, 0 to 25 percent angular cobbles, 0 to 15 percent angular stones, 0 to 10 percent angular boulders

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 5.7 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 2 inches; loam

BAt—2 to 8 inches; loam

Bt1—8 to 15 inches; loam

Bt2—15 to 24 inches; silty clay loam

BCt—24 to 32 inches; silty clay loam

Crt1—32 to 47 inches; bedrock

Crt2—47 to 58 inches; bedrock

Cr—58 to 75 inches; bedrock

Minor Components in Map Unit 563

Loamy-skeletal soils that are 40 to 60 inches deep to bedrock

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on metavolcanic hills

Hydric soil status: Not hydric

Hartsmill and similar soils

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on metavolcanic hills

Hydric soil status: Not hydric

Surnuf taxadjunct and similar soils

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Concave backslopes on metavolcanic hills

Loamy soils that are 10 to 20 inches deep to paralithic bedrock

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on metavolcanic hills

Hydric soil status: Not hydric

Mounthope and similar soils

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on metavolcanic hills

Hydric soil status: Not hydric

Rock outcrop

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on metavolcanic hills

Hydric soil status: Not hydric

564—Bigridge-Minniecreek complex, 50 to 70 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Wildlife habitat, watershed, and limited timber production

Major land resource area: 18

Landscape: Northern Sierra Nevada foothills

Elevation: 2,000 to 2,595 feet (610 to 792 meters)

Mean annual precipitation: 45 to 50 inches (1,143 to 1,270 millimeters)

Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)

Frost-free period: 230 to 240 days

Map Unit Composition

Bigridge loam—50 percent

Minniecreek loam—35 percent

Minor components—15 percent

Characteristics of Bigridge Loam

Slope: 50 to 70 percent

Geomorphic position: Backslopes on metavolcanic hills

Parent material: Loamy colluvium and/or residuum weathered from metavolcanic rocks

Observed vegetation: Ponderosa pine, California black oak, interior live oak, whiteleaf manzanita, Pacific poison oak, and toyon

Texture of the surface layer: Moderately decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 30 percent coarse, angular gravel, 0 to 5 percent angular cobbles, 0 to 5 percent angular stones

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oe—0 to 1 inch; moderately decomposed plant material

A—1 to 5 inches; loam

BAt—5 to 9 inches; gravelly loam

Bt1—9 to 15 inches; gravelly loam

Bt2—15 to 20 inches; gravelly loam

BCT1—20 to 27 inches; very gravelly loam

BCT2—27 to 36 inches; extremely gravelly loam

BCT3—36 to 51 inches; very gravelly loam

Crt—51 to 62 inches; bedrock

Characteristics of Minniecreek Loam

Slope: 50 to 70 percent

Geomorphic position: Backslopes on metavolcanic hills

Parent material: Loamy colluvium and/or residuum weathered from metavolcanic rocks

Observed vegetation: Ponderosa pine, California black oak, interior live oak, whiteleaf manzanita, Pacific poison oak, and toyon

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: 0 to 40 percent coarse, angular gravel, 0 to 25 percent angular cobbles, 0 to 15 percent angular stones, 0 to 10 percent angular boulders

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 5.7 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 2 inches; loam

BAt—2 to 8 inches; loam

Bt1—8 to 15 inches; loam

Bt2—15 to 24 inches; silty clay loam

BCt—24 to 32 inches; silty clay loam

Crt1—32 to 47 inches; bedrock

Crt2—47 to 58 inches; bedrock

Cr—58 to 75 inches; bedrock

Minor Components in Map Unit 564

Loamy-skeletal soils that are 40 to 60 inches deep to bedrock

Composition: 5 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on metavolcanic hills

Hydric soil status: Not hydric

Loamy soils that are 10 to 20 inches deep to paralithic bedrock

Composition: 5 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on metavolcanic hills

Hydric soil status: Not hydric

Loamy-skeletal soils that are 20 to 40 inches deep to bedrock

Composition: 3 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on metavolcanic hills

Hydric soil status: Not hydric

Fine-loamy soils that are 40 to 60 inches deep to lithic bedrock

Composition: 2 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on metavolcanic hills

Hydric soil status: Not hydric

565—Dunstone-Argonaut taxadjunct-Sunnyslope complex, 2 to 15 percent slopes

Map Unit Setting

General location: Southeastern Butte County and northwestern Yuba County

Major uses: Livestock grazing, homesite development, wildlife habitat, and watershed

Major land resource area: 18

Landscape: Northern Sierra Nevada foothills

Elevation: 200 to 1,600 feet (61 to 488 meters)

Mean annual precipitation: 28 to 35 inches (711 to 889 millimeters)

Mean annual air temperature: 57 to 63 degrees F (14 to 17 degrees C)

Frost-free period: 230 to 260 days

Map Unit Composition

Dunstone loam, dry—35 percent

Argonaut taxadjunct loam—30 percent

Sunnyslope loam—20 percent
 Minor components—15 percent

Characteristics of Dunstone Loam, Dry

Slope: 2 to 15 percent

Geomorphic position: Metavolcanic hills

Parent material: Loamy residuum weathered from metavolcanic rocks

Observed vegetation: Annual grasses and forbs and blue oak

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: 0 to 5 percent subangular cobbles, 0 to 2 percent subangular stones, 0 to 1 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 2.8 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 2 inches; loam

BA1—2 to 7 inches; loam

Bt1—7 to 10 inches; loam

Bt2—10 to 16 inches; loam

Cr—16 inches; bedrock

Characteristics of Argonaut Taxadjunct Loam

Slope: 2 to 15 percent

Geomorphic position: Metavolcanic hills

Parent material: Clayey residuum weathered from metavolcanic rocks

Observed vegetation: Annual grasses and forbs and blue oak

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: 0 to 5 percent medium, subangular gravel, 0 to 5 percent subangular cobbles

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 3e-4

Land capability, nonirrigated: 3e-4

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A—0 to 2 inches; loam

Bt1—2 to 8 inches; clay loam

Bt2—8 to 14 inches; clay

Bt3—14 to 20 inches; clay

BCT1—20 to 26 inches; clay

BCT2—26 to 30 inches; clay loam

Cr—30 inches; bedrock

Characteristics of Sunnyslope Loam

Slope: 2 to 15 percent

Geomorphic position: Metavolcanic hills

Parent material: Loamy residuum weathered from metavolcanic rocks

Observed vegetation: Annual grasses and forbs and blue oak

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subangular gravel, 0 to 15 percent subangular cobbles, 0 to 5 percent subangular stones

Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.3 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7e-4

Land capability, nonirrigated: 7e-4

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 2 inches; loam

Bt1—2 to 6 inches; gravelly loam

Bt2—6 to 10 inches; very cobbly loam

Bt3—10 to 14 inches; extremely gravelly clay loam

Cr—14 inches; bedrock

Minor Components in Map Unit 565

Fine textured soils that are 20 to 40 inches deep to paralithic bedrock

Composition: 5 percent

Slope: 2 to 15 percent

Geomorphic position: Metavolcanic hills

Hydric soil status: Not hydric

Loafercreek and similar soils

Composition: 4 percent

Slope: 2 to 15 percent

Geomorphic position: Metavolcanic hills

Hydric soil status: Not hydric

Auburn loam and similar soils*Composition:* 2 percent*Slope:* 2 to 15 percent*Geomorphic position:* Metavolcanic hills*Hydric soil status:* Not hydric**Soils that have an abrupt clay layer and are 20 to 40 inches deep to bedrock***Composition:* 2 percent*Slope:* 2 to 15 percent*Geomorphic position:* Metavolcanic hills*Hydric soil status:* Not hydric**Rock outcrop***Composition:* 2 percent*Slope:* 2 to 15 percent*Geomorphic position:* Metavolcanic hills*Hydric soil status:* Not hydric**566—Dunstone-Loafercreek-Katskillhill complex, 2 to 15 percent slopes*****Map Unit Setting****General location:* Southeastern Butte County and northwestern Yuba County*Major uses:* Livestock grazing, homesite development, wildlife habitat, and watershed*Major land resource area:* 18*Landscape:* Northern Sierra Nevada foothills*Elevation:* 295 to 895 feet (91 to 274 meters)*Mean annual precipitation:* 28 to 40 inches (711 to 1,016 millimeters)*Mean annual air temperature:* 57 to 63 degrees F (14 to 17 degrees C)*Frost-free period:* 230 to 260 days***Map Unit Composition***

Dunstone loam, dry—45 percent

Loafercreek silt loam, dry—20 percent

Katskillhill loam—15 percent

Minor components—20 percent

Characteristics of Dunstone Loam, Dry*Slope:* 2 to 15 percent*Geomorphic position:* Metavolcanic hills*Parent material:* Loamy residuum weathered from metavolcanic rocks*Observed vegetation:* Annual grasses and forbs and blue oak*Texture of the surface layer:* Loam*Percentage of the surface covered by rock fragments:* 0 to 5 percent subangular cobbles, 0 to 2 percent subangular stones, 0 to 1 percent subangular boulders*Depth to a restrictive feature (paralithic bedrock):* 10 to 20 inches*Shrink-swell potential:* Low (LEP of less than 3)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* None*Annual ponding frequency:* None*Water table (zone of saturation):* None observed*Available water capacity:* Low (about 2.8 inches)

Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile

A—0 to 2 inches; loam
 BA_t—2 to 7 inches; loam
 B_t1—7 to 10 inches; loam
 B_t2—10 to 16 inches; loam
 Cr—16 inches; bedrock

Characteristics of Loafercreek Silt Loam, Dry

Slope: 2 to 15 percent
Geomorphic position: Metavolcanic hills
Parent material: Loamy residuum weathered from metavolcanic rocks
Observed vegetation: Annual grasses and forbs and blue oak
Texture of the surface layer: Silt loam
Percentage of the surface covered by rock fragments: 0 to 25 percent coarse, subangular gravel
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Low (LEP of less than 3)
Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.6 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

A₁—0 to 2 inches; silt loam
 A₂—2 to 4 inches; silt loam
 BA_t—4 to 11 inches; loam
 B_t1—11 to 20 inches; loam
 B_t2—20 to 29 inches; loam
 Cr_t—29 inches; bedrock

Characteristics of Katskillhill Loam

Slope: 2 to 15 percent
Geomorphic position: Metavolcanic hills
Parent material: Loamy residuum over clayey residuum weathered from metavolcanic rocks
Observed vegetation: Annual grasses and forbs and blue oak
Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: 0 to 3 percent medium, subangular gravel

Depth to a restrictive feature (lithic bedrock): 40 to 60 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.0 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 3e-3

Land capability, nonirrigated: 3e-3

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A—0 to 2 inches; loam

BAt—2 to 8 inches; loam

Bt1—8 to 12 inches; very gravelly loam

2Bt2—12 to 19 inches; clay

2Btss1—19 to 29 inches; clay

2Btss2—29 to 42 inches; clay

2R—42 inches; bedrock

Minor Components in Map Unit 566

Auburn loam and similar soils

Composition: 5 percent

Slope: 2 to 15 percent

Geomorphic position: Metavolcanic hills

Hydric soil status: Not hydric

Clayey soils that are 10 to 20 inches deep to paralithic bedrock

Composition: 5 percent

Slope: 2 to 15 percent

Geomorphic position: Metavolcanic hills

Hydric soil status: Not hydric

Lomarica and similar soils

Composition: 4 percent

Slope: 2 to 15 percent

Geomorphic position: Metavolcanic hills

Hydric soil status: Not hydric

Argonaut taxadjunct loam and similar soils

Composition: 3 percent

Slope: 2 to 15 percent

Geomorphic position: Metavolcanic hills

Hydric soil status: Not hydric

Clayey-skeletal soils that are more than 40 inches deep to paralithic bedrock

Composition: 3 percent

Slope: 2 to 15 percent

Geomorphic position: Metavolcanic hills

Hydric soil status: Not hydric

567—Dunstone-Loafercreek-Argonaut taxadjunct complex, 2 to 15 percent slopes

Map Unit Setting

General location: Southeastern Butte County and northwestern Yuba County

Major uses: Livestock grazing, homesite development, wildlife habitat, and watershed

Major land resource area: 18

Landscape: Northern Sierra Nevada foothills

Elevation: 200 to 1,600 feet (61 to 488 meters)

Mean annual precipitation: 28 to 40 inches (711 to 1,016 millimeters)

Mean annual air temperature: 57 to 63 degrees F (14 to 17 degrees C)

Frost-free period: 230 to 260 days

Map Unit Composition

Dunstone loam, dry—40 percent

Loafercreek silt loam, dry—25 percent

Argonaut taxadjunct loam—20 percent

Minor components—15 percent

Characteristics of Dunstone Loam, Dry

Slope: 2 to 15 percent

Geomorphic position: Metavolcanic hills

Parent material: Loamy residuum weathered from metavolcanic rocks

Observed vegetation: Annual grasses and forbs and blue oak

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: 0 to 5 percent subangular cobbles, 0 to 2 percent subangular stones, 0 to 1 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 2.8 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 2 inches; loam

BA1—2 to 7 inches; loam

Bt1—7 to 10 inches; loam

Bt2—10 to 16 inches; loam

Cr—16 inches; bedrock

Characteristics of Loafercreek Silt Loam, Dry

Slope: 2 to 15 percent

Geomorphic position: Metavolcanic hills

Parent material: Loamy residuum weathered from metavolcanic rocks

Observed vegetation: Annual grasses and forbs and blue oak

Texture of the surface layer: Silt loam

Percentage of the surface covered by rock fragments: 0 to 25 percent coarse, subangular gravel

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.6 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A1—0 to 2 inches; silt loam

A2—2 to 4 inches; silt loam

BAt—4 to 11 inches; loam

Bt1—11 to 20 inches; loam

Bt2—20 to 29 inches; loam

Crt—29 inches; bedrock

Characteristics of Argonaut Taxadjunct Loam

Slope: 2 to 15 percent

Geomorphic position: Metavolcanic hills

Parent material: Clayey residuum weathered from metavolcanic rocks

Observed vegetation: Annual grasses and forbs and blue oak

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: 0 to 5 percent medium, subangular gravel, 0 to 5 percent subangular cobbles

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 3e-4

Land capability, nonirrigated: 3e-4

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A—0 to 2 inches; loam

Bt1—2 to 8 inches; clay loam

Bt2—8 to 14 inches; clay
 Bt3—14 to 20 inches; clay
 BCt1—20 to 26 inches; clay
 BCt2—26 to 30 inches; clay loam
 Cr—30 inches; bedrock

Minor Components in Map Unit 567

Auburn loam and similar soils

Composition: 7 percent
Slope: 2 to 15 percent
Geomorphic position: Metavolcanic hills
Hydric soil status: Not hydric

Katskillhill and similar soils

Composition: 3 percent
Slope: 2 to 15 percent
Geomorphic position: Metavolcanic hills
Hydric soil status: Not hydric

Soils that have an abrupt clay layer and are 40 to 60 inches deep to bedrock

Composition: 3 percent
Slope: 2 to 15 percent
Geomorphic position: Metavolcanic hills
Hydric soil status: Not hydric

Rock outcrop

Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Metavolcanic hills
Hydric soil status: Not hydric

577—Parkshill-Flanly-Hurleton complex, 2 to 15 percent slopes

Map Unit Setting

General location: Southeastern Butte County and northwestern Yuba County
Major uses: Livestock grazing, wildlife habitat, homesite development, and watershed
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 495 to 2,200 feet (152 to 671 meters)
Mean annual precipitation: 32 to 45 inches (813 to 1,143 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 235 to 260 days

Map Unit Composition

Parkshill coarse sandy loam—40 percent
 Flanly loam—25 percent
 Hurleton gravelly sandy loam—20 percent
 Minor components—15 percent

Characteristics of Parkshill Coarse Sandy Loam

Slope: 2 to 15 percent
Geomorphic position: Granitic hills
Parent material: Fine-loamy residuum weathered from intrusive igneous rocks

Observed vegetation: Annual grasses and forbs, blue oak, and scattered interior live oak, foothill pine, whiteleaf manzanita, buckbrush, Pacific poison oak, valley oak, and ponderosa pine

Texture of the surface layer: Coarse sandy loam

Percentage of the surface covered by rock fragments: None

Restrictive feature: None identified

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 8.7 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 4e-4

Land capability, nonirrigated: 4e-4

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 2 inches; coarse sandy loam

AB—2 to 8 inches; coarse sandy loam

Bw1—8 to 18 inches; coarse sandy loam

Bw2—18 to 26 inches; coarse sandy loam

Bt1—26 to 35 inches; sandy clay loam

Bt2—35 to 53 inches; sandy clay loam

BCt—53 to 61 inches; sandy clay loam

Characteristics of Flanly Loam

Slope: 2 to 15 percent

Geomorphic position: Granitic hills

Parent material: Fine-loamy residuum weathered from intrusive igneous rocks

Observed vegetation: Annual grasses and forbs, blue oak, foothill pine, interior live oak, Pacific poison oak, buckbrush, and whiteleaf manzanita

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, subangular gravel, 0 to 3 percent subangular cobbles, 0 to 10 percent subangular stones

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 3.4 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

- A—0 to 2 inches; loam
- BA—2 to 5 inches; sandy loam
- Bt1—5 to 10 inches; sandy loam
- Bt2—10 to 23 inches; sandy clay loam
- Crt—23 to 26 inches; bedrock

Characteristics of Hurleton Gravelly Sandy Loam

Slope: 2 to 15 percent

Geomorphic position: Granitic hills

Parent material: Gravelly and loamy residuum weathered from intrusive igneous rocks

Observed vegetation: Annual grasses and forbs, blue oak, foothill pine, interior live oak, Pacific poison oak, buckbrush, and whiteleaf manzanita

Texture of the surface layer: Gravelly sandy loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (lithic bedrock): 20 to 40 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-4

Land capability, nonirrigated: 7e-4

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

- A1—0 to 3 inches; gravelly sandy loam
- A2—3 to 7 inches; gravelly sandy loam
- BA—7 to 12 inches; gravelly sandy loam
- Bt1—12 to 16 inches; very gravelly sandy loam
- Bt2—16 to 19 inches; very gravelly sandy loam
- Bt3—19 to 25 inches; extremely gravelly sandy clay loam
- R—25 inches; bedrock

Minor Components in Map Unit 577**Mounthope and similar soils**

Composition: 4 percent

Slope: 2 to 15 percent

Geomorphic position: Granitic hills

Hydric soil status: Not hydric

Swedesflat and similar soils

Composition: 3 percent

Slope: 2 to 15 percent

Geomorphic position: Granitic hills

Hydric soil status: Not hydric

Coarse-loamy soils that are less than 40 inches deep to paralithic bedrock

Composition: 3 percent

Slope: 2 to 15 percent

Geomorphic position: Granitic hills

Hydric soil status: Not hydric

Argonaut taxadjunct loam and similar soils

Composition: 3 percent

Slope: 2 to 15 percent

Geomorphic position: Granitic hills

Hydric soil status: Not hydric

Rock outcrop

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: Granitic hills

Hydric soil status: Not hydric

578—Flanly-Swedeflat complex, 2 to 15 percent slopes

Map Unit Setting

General location: Southeastern Butte County and northwestern Yuba County

Major uses: Livestock grazing, wildlife habitat, watershed, and homesite development

Major land resource area: 18

Landscape: Northern Sierra Nevada foothills

Elevation: 495 to 1,945 feet (152 to 594 meters)

Mean annual precipitation: 32 to 45 inches (813 to 1,143 millimeters)

Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)

Frost-free period: 235 to 260 days

Map Unit Composition

Flanly loam—45 percent

Swedeflat cobbly fine sandy loam—35 percent

Minor components—20 percent

Characteristics of Flanly Loam

Slope: 2 to 15 percent

Geomorphic position: Granitic hills

Parent material: Fine-loamy residuum weathered from intrusive igneous rocks

Observed vegetation: Annual grasses and forbs, blue oak, foothill pine, interior live oak, Pacific poison oak, buckbrush, and whiteleaf manzanita

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, subangular gravel, 0 to 3 percent subangular cobbles, 0 to 10 percent subangular stones

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 3.4 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 2 inches; loam

BA—2 to 5 inches; sandy loam

Bt1—5 to 10 inches; sandy loam

Bt2—10 to 23 inches; sandy clay loam

Crt—23 to 26 inches; bedrock

Characteristics of Swedesflat Cobbly Fine Sandy Loam

Slope: 2 to 15 percent

Geomorphic position: Granitic hills

Parent material: Cobbly and loamy residuum weathered from intrusive igneous rocks

Observed vegetation: Annual grasses and forbs, blue oak, foothill pine, interior live oak, Pacific poison oak, buckbrush, and whiteleaf manzanita

Texture of the surface layer: Cobbly fine sandy loam

Percentage of the surface covered by rock fragments: 0 to 3 percent subangular stones

Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.2 inches)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7e-4

Land capability, nonirrigated: 7e-4

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 2 inches; cobbly fine sandy loam

ABt—2 to 8 inches; cobbly sandy loam

Bt—8 to 12 inches; sandy loam

Crt—12 to 18 inches; bedrock

Cr—18 inches; bedrock

Minor Components in Map Unit 578

Fine-loamy soils that are 40 to 60 inches deep to lithic bedrock

Composition: 5 percent

Slope: 2 to 15 percent

Geomorphic position: Granitic hills

Hydric soil status: Not hydric

Argonaut taxadjunct loam and similar soils

Composition: 5 percent

Slope: 2 to 15 percent

Geomorphic position: Granitic hills

Hydric soil status: Not hydric

Loamy soils that are less than 20 inches deep to lithic bedrock*Composition:* 5 percent*Slope:* 2 to 15 percent*Geomorphic position:* Granitic hills*Hydric soil status:* Not hydric**Rock outcrop***Composition:* 5 percent*Slope:* 2 to 15 percent*Geomorphic position:* Granitic hills*Hydric soil status:* Not hydric**580—Surnuf taxadjunct-Griffgulch-Rock outcrop complex,
2 to 15 percent slopes*****Map Unit Setting****General location:* Central Butte County*Major uses:* Timber production, homesite development, wildlife habitat, and watershed*Major land resource area:* 22A*Landscape:* Northern Sierra Nevada Mountains*Elevation:* 2,000 to 2,995 feet (610 to 914 meters)*Mean annual precipitation:* 50 to 55 inches (1,270 to 1,397 millimeters)*Mean annual air temperature:* 55 to 57 degrees F (13 to 14 degrees C)*Frost-free period:* 230 to 250 days***Map Unit Composition***

Surnuf taxadjunct loam—40 percent

Griffgulch very gravelly silt loam—25 percent

Rock outcrop (metavolcanic)—20 percent

Minor components—15 percent

Characteristics of Surnuf Taxadjunct Loam*Slope:* 2 to 15 percent*Geomorphic position:* Ridgetops and side slopes on metamorphic mountains*Parent material:* Silty and clayey residuum and/or colluvium derived from metavolcanic rocks*Observed vegetation:* Ponderosa pine, Douglas-fir, deerbrush, whiteleaf manzanita, Pacific poison oak, and Pacific madrone*Texture of the surface layer:* Slightly decomposed plant material*Percentage of the surface covered by rock fragments:* 0 to 5 percent subangular boulders, 0 to 15 percent subangular stones, 0 to 20 percent subangular cobbles, 0 to 30 percent subangular gravel*Restrictive feature:* None identified*Shrink-swell potential:* High (LEP of 6 to 9)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* None*Annual ponding frequency:* None*Water table (zone of saturation):* None observed*Available water capacity:* High (about 8.3 inches)*Natural drainage class:* Well drained*Surface runoff (bare conditions):* Medium

*Interpretive groups**Land capability, irrigated:* 3e-1*Land capability, nonirrigated:* 3e-1*Hydric soil status:* Not hydric*Hydrologic soil group:* B*Typical profile*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 5 inches; loam

Bt1—5 to 11 inches; clay loam

Bt2—11 to 18 inches; silty clay

Bt3—18 to 31 inches; silty clay

Bt4—31 to 43 inches; silty clay

Bt5—43 to 54 inches; very stony silty clay loam

BCt—54 to 67 inches; silty clay loam

Characteristics of Griffgulch Very Gravelly Silt Loam*Slope:* 2 to 15 percent*Geomorphic position:* Ridgetops and side slopes on metamorphic mountains*Parent material:* Silty and clayey residuum weathered from metavolcanic rocks*Observed vegetation:* Ponderosa pine, Douglas-fir, whiteleaf manzanita, Pacific poison oak, and Pacific madrone*Texture of the surface layer:* Slightly decomposed plant material*Percentage of the surface covered by rock fragments:* 10 to 30 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders*Depth to a restrictive feature (lithic bedrock):* 40 to 60 inches*Shrink-swell potential:* High (LEP of 6 to 9)*Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)**Annual flooding frequency:* None*Annual ponding frequency:* None*Water table (zone of saturation):* None observed*Available water capacity:* Low (about 4.4 inches)*Natural drainage class:* Well drained*Surface runoff (bare conditions):* Low*Interpretive groups**Land capability, irrigated:* 3e-1*Land capability, nonirrigated:* 3e-1*Hydric soil status:* Not hydric*Hydrologic soil group:* B*Typical profile*

Oi—0 to 2 inches; slightly decomposed plant material

Oe—2 to 3 inches; moderately decomposed plant material

A—3 to 7 inches; very gravelly silt loam

Bt1—7 to 11 inches; very cobbly silty clay loam

Bt2—11 to 20 inches; extremely cobbly silty clay loam

Bt3—20 to 33 inches; very cobbly silty clay

Bt4—33 to 47 inches; very cobbly clay

Bt5—47 to 58 inches; extremely gravelly clay

R—58 inches; bedrock

Characteristics of Rock Outcrop (Metavolcanic)

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and side slopes on metamorphic mountains

Surface runoff (bare conditions): Very high

Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 580

Areas with piles of boulders and stones on the surface

Composition: 5 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and side slopes on metamorphic mountains

Hydric soil status: Not hydric

Loamy-skeletal soils that are 40 to 60 inches deep to lithic bedrock

Composition: 5 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and side slopes on metamorphic mountains

Hydric soil status: Not hydric

Soils that have less than 35 percent clay in the upper part of the subsoil

Composition: 3 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and side slopes on metamorphic mountains

Hydric soil status: Not hydric

Loamy-skeletal soils that are more than 60 inches deep to lithic bedrock

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and side slopes on metamorphic mountains

Hydric soil status: Not hydric

581—Surnuf taxadjunct-Griffgulch complex, 15 to 30 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Timber production, homesite development, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 895 to 2,995 feet (274 to 914 meters)

Mean annual precipitation: 50 to 55 inches (1,270 to 1,397 millimeters)

Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)

Frost-free period: 230 to 250 days

Map Unit Composition

Surnuf taxadjunct loam—65 percent

Griffgulch very gravelly silt loam—20 percent

Minor components—15 percent

Characteristics of Surnuf Taxadjunct Loam

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and side slopes on metamorphic mountains

Parent material: Silty and clayey residuum and/or colluvium derived from metavolcanic rocks

Observed vegetation: Ponderosa pine, Douglas-fir, deerbrush, whiteleaf manzanita, Pacific poison oak, and Pacific madrone

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 5 percent subangular boulders, 0 to 15 percent subangular stones, 0 to 20 percent subangular cobbles, 0 to 30 percent subangular gravel

Restrictive feature: None identified

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 8.3 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 5 inches; loam

Bt1—5 to 11 inches; clay loam

Bt2—11 to 18 inches; silty clay

Bt3—18 to 31 inches; silty clay

Bt4—31 to 43 inches; silty clay

Bt5—43 to 54 inches; very stony silty clay loam

BCt—54 to 67 inches; silty clay loam

Characteristics of Griffgulch Very Gravelly Silt Loam

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and side slopes on metamorphic mountains

Parent material: Silty and clayey residuum and/or colluvium derived from metavolcanic rocks

Observed vegetation: Ponderosa pine, Douglas-fir, deerbrush, whiteleaf manzanita, Pacific poison oak, and Pacific madrone

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 10 to 30 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 40 to 60 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.4 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

*Interpretive groups**Land capability, irrigated: 4e-1**Land capability, nonirrigated: 4e-1**Hydric soil status: Not hydric**Hydrologic soil group: B**Typical profile*

Oi—0 to 2 inches; slightly decomposed plant material

Oe—2 to 3 inches; moderately decomposed plant material

A—3 to 7 inches; very gravelly silt loam

Bt1—7 to 11 inches; very cobbly silty clay loam

Bt2—11 to 20 inches; extremely cobbly silty clay loam

Bt3—20 to 33 inches; very cobbly silty clay

Bt4—33 to 47 inches; very cobbly clay

Bt5—47 to 58 inches; extremely gravelly clay

R—58 inches; bedrock

Minor Components in Map Unit 581**Areas with piles of boulders and stones on the surface***Composition: 5 percent**Slope: 15 to 30 percent**Geomorphic position: Ridgetops and side slopes on metamorphic mountains**Hydric soil status: Not hydric***Loamy-skeletal soils that are 40 to 60 inches deep to lithic bedrock***Composition: 5 percent**Slope: 15 to 30 percent**Geomorphic position: Ridgetops and side slopes on metamorphic mountains**Hydric soil status: Not hydric***Soils that have less than 35 percent clay in the upper part of the subsoil***Composition: 3 percent**Slope: 15 to 30 percent**Geomorphic position: Ridgetops and side slopes on metamorphic mountains**Hydric soil status: Not hydric***Loamy-skeletal soils that are more than 60 inches deep to lithic bedrock***Composition: 2 percent**Slope: 15 to 30 percent**Geomorphic position: Ridgetops and side slopes on metamorphic mountains**Hydric soil status: Not hydric***582—Surnuf taxadjunct-Griffgulch complex, 30 to 50 percent slopes*****Map Unit Setting****General location: Central Butte County**Major uses: Timber production, wildlife habitat, and watershed**Major land resource area: 22A**Landscape: Northern Sierra Nevada Mountains**Elevation: 895 to 2,995 feet (274 to 914 meters)**Mean annual precipitation: 50 to 55 inches (1,270 to 1,397 millimeters)**Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)**Frost-free period: 230 to 250 days*

Map Unit Composition

Surnuf taxadjunct loam—50 percent
 Griffgulch very gravelly silt loam—35 percent
 Minor components—15 percent

Characteristics of Surnuf Taxadjunct Loam

Slope: 30 to 50 percent
Geomorphic position: Backslopes on metamorphic mountains
Parent material: Silty and clayey residuum and/or colluvium derived from metavolcanic rocks
Observed vegetation: Ponderosa pine, Douglas-fir, deerbrush, whiteleaf manzanita, Pacific poison oak, and Pacific madrone
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders, 0 to 20 percent subangular cobbles, 0 to 30 percent subangular gravel
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 8.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
 A—1 to 5 inches; loam
 Bt1—5 to 11 inches; clay loam
 Bt2—11 to 18 inches; silty clay
 Bt3—18 to 31 inches; silty clay
 Bt4—31 to 43 inches; silty clay
 Bt5—43 to 54 inches; very stony silty clay loam
 BCt—54 to 67 inches; silty clay loam

Characteristics of Griffgulch Very Gravelly Silt Loam

Slope: 30 to 50 percent
Geomorphic position: Backslopes on metamorphic mountains
Parent material: Silty and clayey residuum and/or colluvium derived from metavolcanic rocks
Observed vegetation: Ponderosa pine, Douglas-fir, deerbrush, whiteleaf manzanita, Pacific poison oak, and Pacific madrone
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 10 to 30 percent medium,

subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 40 to 60 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.4 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

Oe—2 to 3 inches; moderately decomposed plant material

A—3 to 7 inches; very gravelly silt loam

Bt1—7 to 11 inches; very cobbly silty clay loam

Bt2—11 to 20 inches; extremely cobbly silty clay loam

Bt3—20 to 33 inches; very cobbly silty clay

Bt4—33 to 47 inches; very cobbly clay

Bt5—47 to 58 inches; extremely gravelly clay

R—58 inches; bedrock

Minor Components in Map Unit 582

Areas with piles of boulders and stones on the surface

Composition: 5 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on metamorphic mountains

Hydric soil status: Not hydric

Loamy-skeletal soils that are 40 to 60 inches deep to lithic bedrock

Composition: 5 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on metamorphic mountains

Hydric soil status: Not hydric

Soils that have less than 35 percent clay in the upper part of the subsoil

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on metamorphic mountains

Hydric soil status: Not hydric

Loamy-skeletal soils that are more than 60 inches deep to lithic bedrock

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on metamorphic mountains

Hydric soil status: Not hydric

583—Surnuf taxadjunct-Griffgulch complex, 50 to 70 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 895 to 2,995 feet (274 to 914 meters)

Mean annual precipitation: 50 to 55 inches (1,270 to 1,397 millimeters)

Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)

Frost-free period: 230 to 250 days

Map Unit Composition

Surnuf taxadjunct loam—50 percent

Griffgulch very gravelly silt loam—35 percent

Minor components—15 percent

Characteristics of Surnuf Taxadjunct Loam

Slope: 50 to 70 percent

Geomorphic position: Backslopes on metamorphic mountains

Parent material: Silty and clayey residuum and/or colluvium derived from metavolcanic rocks

Observed vegetation: Ponderosa pine, Douglas-fir, deerbrush, whiteleaf manzanita, Pacific poison oak, and Pacific madrone

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 5 percent subangular boulders, 10 to 15 percent subangular stones, 0 to 20 percent subangular cobbles, 0 to 30 percent subangular gravel

Restrictive feature: None identified

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 8.3 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 5 inches; loam

Bt1—5 to 11 inches; clay loam

Bt2—11 to 18 inches; silty clay

Bt3—18 to 31 inches; silty clay

Bt4—31 to 43 inches; silty clay

Bt5—43 to 54 inches; very stony silty clay loam

BCt—54 to 67 inches; silty clay loam

Characteristics of Griffgulch Very Gravelly Silt Loam

Slope: 50 to 70 percent

Geomorphic position: Backslopes on metamorphic mountains

Parent material: Silty and clayey residuum and/or colluvium derived from metavolcanic rocks

Observed vegetation: Ponderosa pine, Douglas-fir, deerbrush, whiteleaf manzanita, Pacific poison oak, and Pacific madrone

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 10 to 30 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 40 to 60 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.4 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

Oe—2 to 3 inches; moderately decomposed plant material

A—3 to 7 inches; very gravelly silt loam

Bt1—7 to 11 inches; very cobbly silty clay loam

Bt2—11 to 20 inches; extremely cobbly silty clay loam

Bt3—20 to 33 inches; very cobbly silty clay

Bt4—33 to 47 inches; very cobbly clay

Bt5—47 to 58 inches; extremely gravelly clay

R—58 inches; bedrock

Minor Components in Map Unit 583

Areas with piles of boulders and stones on the surface

Composition: 5 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on metamorphic mountains

Hydric soil status: Not hydric

Loamy-skeletal soils that are 40 to 60 inches deep to lithic bedrock

Composition: 5 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on metamorphic mountains

Hydric soil status: Not hydric

Soils that have less than 35 percent clay in the upper part of the subsoil

Composition: 3 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on metamorphic mountains

Hydric soil status: Not hydric

Loamy-skeletal soils that are more than 60 inches deep to lithic bedrock

Composition: 2 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on metamorphic mountains

Hydric soil status: Not hydric

584—Flanly-Swedesflat-Rackerby complex, 15 to 30 percent slopes

Map Unit Setting

General location: Southeastern Butte County and northwestern Yuba County

Major uses: Livestock grazing, wildlife habitat, homesite development, and watershed

Major land resource area: 18

Landscape: Northern Sierra Nevada foothills

Elevation: 495 to 2,095 feet (152 to 640 meters)

Mean annual precipitation: 30 to 50 inches (762 to 1,270 millimeters)

Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)

Frost-free period: 235 to 260 days

Map Unit Composition

Flanly loam—35 percent

Swedesflat cobbly fine sandy loam—30 percent

Rackerby very gravelly sandy loam—25 percent

Minor components—10 percent

Characteristics of Flanly Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes on granitic hills

Parent material: Fine-loamy residuum and/or colluvium derived from intrusive igneous rocks

Observed vegetation: Annual grasses and forbs, blue oak, foothill pine, interior live oak, Pacific poison oak, buckbrush, and whiteleaf manzanita

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, subangular gravel, 0 to 3 percent subangular cobbles, 0 to 10 percent subangular stones

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 3.4 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 2 inches; loam

BA—2 to 5 inches; sandy loam

Bt1—5 to 10 inches; sandy loam

Bt2—10 to 23 inches; sandy clay loam

Crt—23 to 26 inches; bedrock

Characteristics of Swedesflat Cobbly Fine Sandy Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes on granitic hills

Parent material: Cobbly and loamy residuum weathered from intrusive igneous rocks

Observed vegetation: Annual grasses and forbs, blue oak, foothill pine, interior live oak, Pacific poison oak, buckbrush, and whiteleaf manzanita

Texture of the surface layer: Cobbly fine sandy loam

Percentage of the surface covered by rock fragments: 0 to 3 percent subangular stones

Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.2 inches)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7e-4

Land capability, nonirrigated: 7e-4

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 2 inches; cobbly fine sandy loam

ABt—2 to 8 inches; cobbly sandy loam

Bt—8 to 12 inches; sandy loam

Crt—12 to 18 inches; bedrock

Cr—18 inches; bedrock

Characteristics of Rackerby Very Gravelly Sandy Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes on granitic hills

Parent material: Gravelly and loamy residuum weathered from intrusive igneous rocks

Observed vegetation: Annual grasses and forbs, blue oak, foothill pine, interior live oak, Pacific poison oak, buckbrush, and whiteleaf manzanita

Texture of the surface layer: Very gravelly sandy loam

Percentage of the surface covered by rock fragments: 0 to 20 percent coarse, subangular gravel, 0 to 5 percent subangular cobbles, 0 to 5 percent subangular stones

Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.1 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7e-4

Land capability, nonirrigated: 7e-4

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 2 inches; very gravelly sandy loam

AB—2 to 5 inches; gravelly sandy loam

Bw—5 to 13 inches; very gravelly sandy loam

Cr—13 inches; bedrock

Minor Components in Map Unit 584

Sommeyflat and similar soils

Composition: 4 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on granitic hills

Hydric soil status: Not hydric

Mounthope and similar soils

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on granitic hills

Hydric soil status: Not hydric

Hurleton and similar soils

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on granitic hills

Hydric soil status: Not hydric

Rock outcrop

Composition: 1 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on granitic hills

Hydric soil status: Not hydric

Loamy soils that are less than 20 inches deep to lithic bedrock

Composition: 1 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on granitic hills

Hydric soil status: Not hydric

585—Flanly-Sommeyflat complex, 2 to 15 percent slopes

Map Unit Setting

General location: Southeastern Butte County and northwestern Yuba County

Major uses: Livestock grazing, wildlife habitat, homesite development, and watershed

Major land resource area: 18

Landscape: Northern Sierra Nevada foothills

Elevation: 1,095 to 2,200 feet (335 to 671 meters)

Mean annual precipitation: 35 to 50 inches (889 to 1,270 millimeters)

Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)

Frost-free period: 240 to 260 days

Map Unit Composition

Flanly loam—45 percent

Sommeyflat loam—35 percent

Minor components—20 percent

Characteristics of Flanly Loam

Slope: 2 to 15 percent

Geomorphic position: Intrusive igneous hills

Parent material: Fine-loamy residuum weathered from intrusive igneous rocks

Observed vegetation: Annual grasses and forbs, blue oak, foothill pine, interior live oak, Pacific poison oak, buckbrush, and whiteleaf manzanita

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, subangular gravel, 0 to 3 percent subangular cobbles, 0 to 10 percent subangular stones

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 3.4 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 2 inches; loam

BA—2 to 5 inches; sandy loam

Bt1—5 to 10 inches; sandy loam

Bt2—10 to 23 inches; sandy clay loam

Crt—23 to 26 inches; bedrock

Characteristics of Sommeyflat Loam

Slope: 2 to 15 percent

Geomorphic position: Intrusive igneous hills

Parent material: Fine-loamy residuum and/or colluvium derived from intrusive igneous rocks

Observed vegetation: Annual grasses and forbs, blue oak, foothill pine, interior live oak, Pacific poison oak, buckbrush, and whiteleaf manzanita

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: 0 to 2 percent coarse, subangular gravel

Depth to a restrictive feature (paralithic bedrock): 60 to 80 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 9.6 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 2 inches; loam

BA—2 to 9 inches; loam

Bt1—9 to 14 inches; loam

Bt2—14 to 24 inches; loam

BCt—24 to 31 inches; loam

C1—31 to 62 inches; loam

C2—62 to 70 inches; loam

Minor Components in Map Unit 585

Mounthope and similar soils

Composition: 5 percent

Slope: 2 to 15 percent

Geomorphic position: Intrusive igneous hills

Hydric soil status: Not hydric

Loamy soils that are less than 20 inches deep to lithic bedrock

Composition: 5 percent

Slope: 2 to 15 percent

Geomorphic position: Intrusive igneous hills

Hydric soil status: Not hydric

Argonaut taxadjunct loam and similar soils

Composition: 4 percent

Slope: 2 to 15 percent

Geomorphic position: Intrusive igneous hills

Hydric soil status: Not hydric

Hurleton and similar soils

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: Intrusive igneous hills

Hydric soil status: Not hydric

Fine textured soils that are more than 60 inches deep to bedrock

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: Intrusive igneous hills

Hydric soil status: Not hydric

Rock outcrop*Composition:* 2 percent*Slope:* 2 to 15 percent*Geomorphic position:* Intrusive igneous hills*Hydric soil status:* Not hydric**586—Sommeyleft-Mounthope complex, 15 to 30 percent slopes*****Map Unit Setting****General location:* Southeastern Butte County and northwestern Yuba County*Major uses:* Wildlife habitat, homesite development, livestock grazing, and watershed*Major land resource area:* 18*Landscape:* Northern Sierra Nevada foothills*Elevation:* 1,600 to 2,095 feet (488 to 640 meters)*Mean annual precipitation:* 45 to 55 inches (1,143 to 1,397 millimeters)*Mean annual air temperature:* 55 to 57 degrees F (13 to 14 degrees C)*Frost-free period:* 240 to 260 days***Map Unit Composition***

Sommeyleft loam—45 percent

Mounthope loam—40 percent

Minor components—15 percent

Characteristics of Sommeyleft Loam*Slope:* 15 to 30 percent*Geomorphic position:* Side slopes on metamorphic and intrusive igneous hills*Parent material:* Fine-loamy colluvium and/or residuum weathered from intrusive igneous and metamorphic rocks*Observed vegetation:* Annual grasses and forbs, blue oak, interior live oak, foothill pine, whiteleaf manzanita, Pacific poison oak, buckbrush, toyon, and ponderosa pine*Texture of the surface layer:* Loam*Percentage of the surface covered by rock fragments:* 0 to 2 percent coarse, subangular gravel*Depth to a restrictive feature (paralithic bedrock):* 60 to 80 inches*Shrink-swell potential:* Low (LEP of less than 3)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* None*Annual ponding frequency:* None*Water table (zone of saturation):* None observed*Available water capacity:* High (about 9.6 inches)*Natural drainage class:* Well drained*Surface runoff (bare conditions):* Medium***Interpretive groups****Land capability, irrigated:* 4e-1*Land capability, nonirrigated:* 4e-1*Hydric soil status:* Not hydric*Hydrologic soil group:* B***Typical profile***

A—0 to 2 inches; loam

BA—2 to 9 inches; loam
 Bt1—9 to 14 inches; loam
 Bt2—14 to 24 inches; loam
 BCt—24 to 31 inches; loam
 C1—31 to 62 inches; loam
 C2—62 to 70 inches; loam

Characteristics of Mounthope Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes on metamorphic and intrusive igneous hills

Parent material: Fine-loamy colluvium and/or residuum weathered from intrusive igneous and metamorphic rocks

Observed vegetation: Annual grasses and forbs, blue oak, interior live oak, foothill pine, whiteleaf manzanita, Pacific poison oak, buckbrush, toyon, and ponderosa pine

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.7 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; loam

Bt1—3 to 7 inches; loam

Bt2—7 to 15 inches; loam

Bt3—15 to 22 inches; gravelly clay loam

Bt4—22 to 26 inches; gravelly clay loam

Bt5—26 to 31 inches; very gravelly clay loam

Bt6—31 to 42 inches; very gravelly clay loam

Bt7—42 to 52 inches; gravelly clay loam

Cr—52 inches; bedrock

Minor Components in Map Unit 586

Flanly and similar soils

Composition: 5 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on metamorphic and intrusive igneous hills

Hydric soil status: Not hydric

Argonaut taxadjunct loam and similar soils*Composition:* 3 percent*Slope:* 15 to 30 percent*Geomorphic position:* Side slopes on metamorphic and intrusive igneous hills*Hydric soil status:* Not hydric**Rock outcrop***Composition:* 3 percent*Slope:* 15 to 30 percent*Geomorphic position:* Side slopes on metamorphic and intrusive igneous hills*Hydric soil status:* Not hydric**Loamy-skeletal soils that are 20 to 40 inches deep to bedrock***Composition:* 2 percent*Slope:* 15 to 30 percent*Geomorphic position:* Side slopes on metamorphic and intrusive igneous hills*Hydric soil status:* Not hydric**Loamy soils that are less than 20 inches deep to lithic bedrock***Composition:* 2 percent*Slope:* 15 to 30 percent*Geomorphic position:* Side slopes on metamorphic and intrusive igneous hills*Hydric soil status:* Not hydric**587—Sommeyleft-Mounthope-Hurleton complex, 30 to 50 percent slopes*****Map Unit Setting****General location:* Southeastern Butte County and northwestern Yuba County*Major uses:* Livestock grazing, wildlife habitat, and watershed*Major land resource area:* 18*Landscape:* Northern Sierra Nevada foothills*Elevation:* 800 to 1,800 feet (244 to 549 meters)*Mean annual precipitation:* 35 to 45 inches (889 to 1,143 millimeters)*Mean annual air temperature:* 57 to 59 degrees F (14 to 15 degrees C)*Frost-free period:* 240 to 260 days***Map Unit Composition***

Sommeyleft loam—35 percent

Mounthope loam—30 percent

Hurleton gravelly sandy loam—25 percent

Minor components—10 percent

Characteristics of Sommeyleft Loam*Slope:* 30 to 50 percent*Geomorphic position:* Backslopes on intrusive igneous and metamorphic hills*Parent material:* Fine-loamy colluvium and/or residuum weathered from intrusive igneous and metamorphic rocks*Observed vegetation:* Annual grasses and forbs, blue oak, interior live oak, foothill pine, whiteleaf manzanita, Pacific poison oak, buckbrush, toyon, and ponderosa pine*Texture of the surface layer:* Loam*Percentage of the surface covered by rock fragments:* 0 to 2 percent coarse, subangular gravel

Depth to a restrictive feature (paralithic bedrock): 60 to 80 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 9.6 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 2 inches; loam

BA—2 to 9 inches; loam

Bt1—9 to 14 inches; loam

Bt2—14 to 24 inches; loam

BCt—24 to 31 inches; loam

C1—31 to 62 inches; loam

C2—62 to 70 inches; loam

Characteristics of Mounthope Loam

Slope: 30 to 50 percent

Geomorphic position: Backslopes on intrusive igneous and metamorphic hills

Parent material: Fine-loamy colluvium and/or residuum weathered from intrusive igneous and metamorphic rocks

Observed vegetation: Annual grasses and forbs, blue oak, interior live oak, foothill pine, whiteleaf manzanita, Pacific poison oak, buckbrush, toyon, and ponderosa pine

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.7 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; loam
 Bt1—3 to 7 inches; loam
 Bt2—7 to 15 inches; loam
 Bt3—15 to 22 inches; gravelly clay loam
 Bt4—22 to 26 inches; gravelly clay loam
 Bt5—26 to 31 inches; very gravelly clay loam
 Bt6—31 to 42 inches; very gravelly clay loam
 Bt7—42 to 52 inches; gravelly clay loam
 Cr—52 inches; bedrock

Characteristics of Hurleton Gravelly Sandy Loam

Slope: 30 to 50 percent

Geomorphic position: Backslopes on intrusive igneous and metamorphic hills

Parent material: Gravelly and loamy colluvium and/or residuum weathered from intrusive igneous and metamorphic rocks

Observed vegetation: Annual grasses and forbs, blue oak, interior live oak, foothill pine, whiteleaf manzanita, Pacific poison oak, buckbrush, toyon, and ponderosa pine

Texture of the surface layer: Gravelly sandy loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (lithic bedrock): 20 to 40 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-4

Land capability, nonirrigated: 7e-4

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A1—0 to 3 inches; gravelly sandy loam

A2—3 to 7 inches; gravelly sandy loam

BA—7 to 12 inches; gravelly sandy loam

Bt1—12 to 16 inches; very gravelly sandy loam

Bt2—16 to 19 inches; very gravelly sandy loam

Bt3—19 to 25 inches; extremely gravelly sandy clay loam

R—25 inches; bedrock

Minor Components in Map Unit 587

Swedesflat and similar soils

Composition: 5 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on intrusive igneous and metamorphic hills

Hydric soil status: Not hydric

Flanly and similar soils

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on intrusive igneous and metamorphic hills

Hydric soil status: Not hydric

Rock outcrop

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on intrusive igneous and metamorphic hills

Hydric soil status: Not hydric

588—Ultic Haploxeralfs, thermic, high terrace, 2 to 15 percent slopes

Map Unit Setting

General location: Southeastern Butte County

Major uses: Livestock grazing, wildlife habitat, watershed, and homesite development

Major land resource area: 18

Landscape: Northern Sierra Nevada foothills

Elevation: 400 to 800 feet (122 to 244 meters)

Mean annual precipitation: 28 to 30 inches (711 to 762 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 250 to 260 days

Map Unit Composition

Ultic Haploxeralfs, thermic, high terrace—95 percent

Minor components—5 percent

Characteristics of Ultic Haploxeralfs, Thermic, High Terrace

Slope: 2 to 15 percent

Geomorphic position: Dissected high terraces

Parent material: Loamy alluvium over loamy and gravelly alluvium derived from igneous and metamorphic rocks

Observed vegetation: Blue oak and annual grasses and forbs, with some foothill pine, whiteleaf manzanita, and buckbrush

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (cemented horizon): 20 to 60 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 10 to 60 inches

Available water capacity: Low (about 2.8 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A—0 to 2 inches; loam

BAt—2 to 6 inches; gravelly loam

Bt1—6 to 12 inches; very gravelly loam
 Bt2—12 to 20 inches; very gravelly loam
 Bt3—20 to 32 inches; extremely gravelly clay loam
 Bq1—32 to 39 inches; extremely gravelly loam
 Bq2—39 to 50 inches; extremely gravelly sandy clay loam

Minor Components in Map Unit 588

Palexerafs, clayey-skeletal, and similar soils

Composition: 5 percent

Slope: 2 to 15 percent

Geomorphic position: Dissected high terraces

Hydric soil status: Not hydric

589—Ultic Haploxerafs, thermic, high terrace, 15 to 30 percent slopes

Map Unit Setting

General location: Southeastern Butte County

Major uses: Livestock grazing, wildlife habitat, and watershed

Major land resource area: 18

Landscape: Northern Sierra Nevada foothills

Elevation: 400 to 800 feet (122 to 244 meters)

Mean annual precipitation: 28 to 30 inches (711 to 762 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 250 to 260 days

Map Unit Composition

Ultic Haploxerafs, thermic, high terrace—95 percent

Minor components—5 percent

Characteristics of Ultic Haploxerafs, Thermic, High Terrace

Slope: 15 to 30 percent

Geomorphic position: Risers on dissected high terraces

Parent material: Loamy alluvium over loamy and gravelly alluvium derived from igneous and metamorphic rocks

Observed vegetation: Blue oak and annual grasses and forbs, with some foothill pine, whiteleaf manzanita, and buckbrush

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (cemented horizon): 20 to 60 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 10 to 60 inches

Available water capacity: Low (about 2.8 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A—0 to 2 inches; loam

BAt—2 to 6 inches; gravelly loam

Bt1—6 to 12 inches; very gravelly loam

Bt2—12 to 20 inches; very gravelly loam

Bt3—20 to 32 inches; extremely gravelly clay loam

Bq1—32 to 39 inches; extremely gravelly loam

Bq2—39 to 50 inches; extremely gravelly sandy clay loam

Minor Components in Map Unit 589

Palexeralfs, clayey-skeletal, and similar soils

Composition: 5 percent

Slope: 15 to 30 percent

Geomorphic position: Risers on dissected high terraces

Hydric soil status: Not hydric

590—Vistarobles-Redding-Argonaut taxadjunct-Haploxererts complex, 0 to 9 percent slopes

Map Unit Setting

General location: Southeastern Butte County and northwestern Yuba County

Major uses: Livestock grazing, homesite development, watershed, and wildlife habitat

Major land resource area: 17

Landscape: Sacramento Valley, Northern Sierra Nevada foothills

Elevation: 110 to 350 feet (34 to 107 meters)

Mean annual precipitation: 20 to 23 inches (508 to 584 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 240 to 260 days

Map Unit Composition

Vistarobles sandy loam—30 percent

Redding loam—25 percent

Argonaut taxadjunct loam—20 percent

Haploxererts gravelly silty clay—15 percent

Minor components—10 percent

Characteristics of Vistarobles Sandy Loam

Slope: 0 to 9 percent

Geomorphic position: Swales on intermediate terraces

Parent material: Loamy alluvium over clayey and gravelly alluvium over cemented, sandy and gravelly alluvium over sandy and cobbly and gravelly alluvium derived from igneous and metamorphic rocks

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Sandy loam

Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, rounded gravel, 0 to 15 percent rounded cobbles

Depth to a restrictive feature (duripan): 10 to 20 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 20 inches
Available water capacity: Very low (about 1.9 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7e-8
Land capability, nonirrigated: 7e-8
Storie index: 10 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile

A1—0 to 5 inches; sandy loam
 A2—5 to 10 inches; sandy clay loam
 2Bt—10 to 14 inches; gravelly clay
 3Bqm—14 to 34 inches; cemented, gravelly duripan
 3C—34 to 40 inches; very cobbly sandy loam

Characteristics of Redding Loam

Slope: 0 to 9 percent
Geomorphic position: Mounds on intermediate terraces
Parent material: Loamy alluvium over clayey alluvium over cemented, sandy and gravelly alluvium derived from igneous and metamorphic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, rounded gravel
Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: Low (LEP of less than 3)
Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 24 to 40 inches
Available water capacity: Moderate (about 5.4 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 3e-3
Land capability, nonirrigated: 3e-3
Storie index: 32 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile

A1—0 to 4 inches; loam
 A2—4 to 11 inches; loam
 BA—11 to 24 inches; loam
 2Bt—24 to 35 inches; clay
 3Bqm—35 to 40 inches; cemented, very gravelly duripan

Characteristics of Argonaut Taxadjunct Loam

Slope: 0 to 9 percent
Geomorphic position: Metamorphic hills

Parent material: Loamy residuum over clayey residuum weathered from metavolcanic rocks

Observed vegetation: Annual grasses and forbs and blue oak

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: 0 to 5 percent medium, subangular gravel, 0 to 5 percent subangular cobbles

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 3e-4

Land capability, nonirrigated: 3e-4

Storie index: 49 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A—0 to 2 inches; loam

Bt1—2 to 8 inches; clay loam

Bt2—8 to 14 inches; clay

Bt3—14 to 20 inches; clay

BCT1—20 to 26 inches; clay

BCT2—26 to 30 inches; clay loam

Cr—30 inches; bedrock

Characteristics of Haploxererts Gravelly Silty Clay

Slope: 0 to 5 percent

Geomorphic position: Small basins and swales on intermediate terraces

Parent material: Clayey alluvium derived from igneous and metamorphic rocks

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Gravelly silty clay

Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, rounded gravel, 0 to 5 percent rounded cobbles

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 60 inches

Available water capacity: Moderate (about 5.1 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 3e-3

Land capability, nonirrigated: 3e-3

Storie index: 17 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

A—0 to 2 inches; gravelly silty clay

Bw—2 to 10 inches; gravelly clay

Bss—10 to 30 inches; gravelly clay

2BCt1—30 to 33 inches; silty clay

2BCt2—33 to 41 inches; silty clay

2Cr—41 to 44 inches; bedrock

Minor Components in Map Unit 590

Durixeralfs, loamy, and similar soils

Composition: 5 percent

Slope: 0 to 9 percent

Geomorphic position: Intermediate terraces

Hydric soil status: Not hydric

Lomarica and similar soils

Composition: 3 percent

Slope: 0 to 9 percent

Geomorphic position: Metamorphic hills

Hydric soil status: Not hydric

Haploxeralfs, fine-loamy, 40 to 60 inches deep to bedrock, and similar soils

Composition: 2 percent

Slope: 0 to 9 percent

Geomorphic position: Metamorphic hills

Hydric soil status: Not hydric

603—Oroville-Thermalito-Fernandez-Thompsonflat complex, 0 to 9 percent slopes

Map Unit Setting

General location: Central and northwestern Butte County

Major uses: Livestock grazing, wildlife habitat, watershed, homesite development, and small olive orchards

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 110 to 255 feet (34 to 79 meters)

Mean annual precipitation: 20 to 26 inches (508 to 660 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 250 to 255 days

Map Unit Composition

Oroville gravelly fine sandy loam—30 percent

Thermalito sandy loam—25 percent

Fernandez sandy loam—15 percent

Thompsonflat fine sandy loam—15 percent

Minor components—15 percent

Characteristics of Oroville Gravelly Fine Sandy Loam

Slope: 0 to 9 percent

Geomorphic position: Swales on intermediate terraces

Parent material: Loamy and gravelly alluvium over clayey and gravelly alluvium over cemented, loamy and gravelly alluvium derived from igneous and metamorphic rocks

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Gravelly fine sandy loam

Percentage of the surface covered by rock fragments: 5 to 20 percent coarse, well rounded gravel

Depth to a restrictive feature (duripan): 20 to 40 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: None

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 40 inches

Available water capacity: Low (about 2.7 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 4e-3

Land capability, nonirrigated: 4e-3

Storie index: 7 (revised)

Hydric soil status: Hydric

Hydrologic soil group: C

Typical profile

A—0 to 2 inches; gravelly fine sandy loam

BAt—2 to 6 inches; gravelly sandy loam

Bt1—6 to 13 inches; gravelly clay loam

2Bt2—13 to 17 inches; gravelly clay

2Btg—17 to 23 inches; gravelly sandy clay

3Bqm1—23 to 31 inches; cemented, extremely gravelly duripan

3Bqm2—31 to 60 inches; cemented, extremely gravelly duripan

Characteristics of Thermalito Sandy Loam

Slope: 0 to 9 percent

Geomorphic position: Mounds on intermediate terraces

Parent material: Loamy and gravelly alluvium over clayey and gravelly alluvium over cemented, sandy and gravelly alluvium derived from igneous and metamorphic rocks

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Sandy loam

Percentage of the surface covered by rock fragments: 0 to 20 percent medium, well rounded gravel

Depth to a restrictive feature (duripan): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 14 to 40 inches

Available water capacity: Low (about 3.7 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 3e-3

Land capability, nonirrigated: 3e-3

Storie index: 22 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A—0 to 2 inches; sandy loam

Bt1—2 to 6 inches; gravelly sandy loam

Bt2—6 to 12 inches; sandy clay loam

Bt3—12 to 18 inches; gravelly sandy clay loam

Bt4—18 to 23 inches; gravelly sandy clay loam

Bt5—23 to 25 inches; gravelly sandy clay loam

2Bt6—25 to 29 inches; gravelly clay

2Bt7—29 to 32 inches; gravelly clay

3Bqm—32 to 60 inches; cemented, gravelly duripan

Characteristics of Fernandez Sandy Loam

Slope: 0 to 9 percent

Geomorphic position: The top of intermediate terraces

Parent material: Fine-loamy alluvium over clayey and gravelly alluvium over cemented, sandy and gravelly alluvium derived from igneous and metamorphic rocks

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Sandy loam

Percentage of the surface covered by rock fragments: 2 to 15 percent medium, well rounded gravel

Depth to a restrictive feature (duripan): 60 to 81 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 40 to 80 inches

Available water capacity: High (about 8.6 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 3e-3

Land capability, nonirrigated: 3e-3

Storie index: 84 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A—0 to 2 inches; sandy loam

Bt1—2 to 6 inches; sandy clay loam

Bt2—6 to 18 inches; sandy clay loam

2Bt3—18 to 28 inches; clay loam

2Bt4—28 to 44 inches; clay loam

2Bt5—44 to 57 inches; clay

2Bt6—57 to 65 inches; gravelly clay

2Bt7—65 to 73 inches; gravelly clay loam
 3Btq—73 to 85 inches; cemented, gravelly duripan

Characteristics of Thompsonflat Fine Sandy Loam

Slope: 0 to 9 percent

Geomorphic position: Intermediate terraces

Parent material: Loamy alluvium over clayey alluvium over sandy and gravelly alluvium derived from igneous and metamorphic rocks

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Fine sandy loam

Percentage of the surface covered by rock fragments: 0 to 5 percent medium, well rounded gravel

Restrictive feature: None identified

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 40 to 81 inches

Available water capacity: Low (about 4.1 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 3e-3

Land capability, nonirrigated: 3e-3

Storie index: 83 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A—0 to 3 inches; fine sandy loam

Bt1—3 to 7 inches; fine sandy loam

Bt2—7 to 11 inches; sandy clay loam

Bt3—11 to 15 inches; sandy clay

2Bt4—15 to 22 inches; gravelly sandy clay

3Btq1—22 to 35 inches; extremely gravelly sandy clay loam

3Btq2—35 to 45 inches; extremely gravelly coarse sandy loam

3Btq3—45 to 53 inches; extremely gravelly coarse sandy loam

3Btq4—53 to 66 inches; extremely gravelly coarse sandy loam

3Btq5—66 to 80 inches; extremely gravelly coarse sandy loam

Minor Components in Map Unit 603

Vistarobles and similar soils

Composition: 2 percent

Slope: 0 to 5 percent

Geomorphic position: Swales on intermediate terraces

Hydric soil status: Hydric

Loamy soils that are 10 to 20 inches deep to a duripan

Composition: 2 percent

Slope: 0 to 5 percent

Geomorphic position: Swales on intermediate terraces

Hydric soil status: Hydric

Palexeralfs, fine, more than 60 inches deep, and similar soils*Composition:* 2 percent*Slope:* 0 to 9 percent*Geomorphic position:* The top of intermediate terraces*Hydric soil status:* Not hydric**Soils that are frequently ponded for long periods***Composition:* 2 percent*Slope:* 0 percent*Geomorphic position:* Vernal pools on intermediate terraces*Hydric soil status:* Hydric**Aquerts, fine, with a duripan at a depth of 20 to 40 inches, and similar soils***Composition:* 1 percent*Slope:* 0 percent*Geomorphic position:* Vernal pools on intermediate terraces*Hydric soil status:* Hydric**Fine-loamy soils that are 20 to 40 inches deep to a duripan***Composition:* 1 percent*Slope:* 0 to 9 percent*Geomorphic position:* Swales on intermediate terraces*Hydric soil status:* Not hydric**Redding and similar soils***Composition:* 1 percent*Slope:* 0 to 9 percent*Geomorphic position:* Mounds on intermediate terraces*Hydric soil status:* Not hydric**Fine textured soils that are deep to a duripan and similar soils***Composition:* 1 percent*Slope:* 0 to 5 percent*Geomorphic position:* Swales on intermediate terraces*Hydric soil status:* Not hydric**Fine-loamy soils that are deep to a duripan and similar soils***Composition:* 1 percent*Slope:* 0 to 9 percent*Geomorphic position:* Mounds on intermediate terraces*Hydric soil status:* Not hydric**Loamy-skeletal soils that are moderately deep to a duripan and similar soils***Composition:* 1 percent*Slope:* 0 to 9 percent*Geomorphic position:* Mounds on intermediate terraces*Hydric soil status:* Not hydric**Clayey-skeletal soils that are shallow to a duripan and similar soils***Composition:* 1 percent*Slope:* 0 to 2 percent*Geomorphic position:* Swales on intermediate terraces*Hydric soil status:* Hydric

605—Duric Xerarents-Oroville complex, 0 to 1 percent slopes, leveled

Map Unit Setting

General location: Central Butte County

Major uses: Cropland and wildlife habitat

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 75 to 160 feet (23 to 50 meters)

Mean annual precipitation: 21 to 23 inches (533 to 584 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 250 to 252 days

Map Unit Composition

Duric Xerarents fine sandy loam, leveled—75 percent

Oroville gravelly fine sandy loam—20 percent

Minor components—5 percent

Characteristics of Duric Xerarents Fine Sandy Loam, Leveled

Slope: 0 to 1 percent

Geomorphic position: Leveled land on intermediate terraces

Parent material: Human-transported, loamy alluvium derived from igneous and metamorphic rocks over cemented, extremely gravelly alluvium derived from igneous and metamorphic rocks

Observed vegetation: Annual grasses and forbs and rice

Surface feature: The surface has been leveled for agricultural production.

Texture of the surface layer: Fine sandy loam

Percentage of the surface covered by rock fragments: 0 to 10 percent medium, well rounded gravel

Depth to a restrictive feature (duripan): 10 to 40 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: None

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 40 inches

Available water capacity: Very low (about 1.5 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7w-2

Land capability, nonirrigated: 7w-2

Storie index: 12 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

Ap—0 to 5 inches; fine sandy loam

C/Bt/Bqm—5 to 12 inches; clay and very gravelly sandy loam

2Bqmb—12 to 18 inches; cemented, extremely gravelly duripan

Characteristics of Oroville Gravelly Fine Sandy Loam

Slope: 0 to 1 percent

Geomorphic position: Mostly undisturbed areas on leveled land on intermediate terraces

Parent material: Loamy and gravelly alluvium over clayey and gravelly alluvium over cemented, loamy and extremely gravelly alluvium derived from igneous and metamorphic rocks

Observed vegetation: Annual grasses and forbs and rice

Surface feature: The surface has been leveled for agricultural production.

Texture of the surface layer: Gravelly fine sandy loam

Percentage of the surface covered by rock fragments: 5 to 20 percent coarse, well rounded gravel

Depth to a restrictive feature (duripan): 20 to 40 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Altered hydrology: Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: None

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 40 inches

Available water capacity: Low (about 2.7 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6s-2

Land capability, nonirrigated: 6s-2

Storie index: 7 (revised)

Hydric soil status: Hydric

Hydrologic soil group: C

Typical profile

A—0 to 2 inches; gravelly fine sandy loam

BAt—2 to 6 inches; gravelly sandy loam

Bt1—6 to 13 inches; gravelly clay loam

2Bt2—13 to 17 inches; gravelly clay

2Btg—17 to 23 inches; gravelly sandy clay

3Bqm1—23 to 31 inches; cemented, extremely gravelly duripan

3Bqm2—31 to 60 inches; cemented, extremely gravelly duripan

Minor Components in Map Unit 605

Extremely altered soils in cut areas

Composition: 3 percent

Slope: 0 to 1 percent

Geomorphic position: Leveled land on intermediate terraces

Hydric soil status: Hydric

Altered soils with up to 3 feet of fill on the surface

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Leveled land on intermediate terraces

Hydric soil status: Not hydric

606—Redtough-Fallager-Anita, gravelly duripan, complex, 0 to 3 percent slopes

Map Unit Setting

General location: Northwestern Butte County

Major uses: Livestock grazing, wildlife habitat, watershed, and homesite development

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 160 to 395 feet (50 to 121 meters)

Mean annual precipitation: 23 to 26 inches (584 to 660 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 250 to 255 days

Map Unit Composition

Redtough loam—45 percent

Fallager loam—30 percent

Anita gravelly clay, gravelly duripan—15 percent

Minor components—10 percent

Characteristics of Redtough Loam

Slope: 0 to 3 percent

Geomorphic position: Mounds on fan terraces

Parent material: Loamy alluvium over cemented, cobbly and gravelly alluvium derived from volcanic rocks

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: 0 to 5 percent medium, well rounded gravel, 0 to 10 percent well rounded cobbles

Depth to a restrictive feature (duripan): 10 to 20 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 2 to 20 inches

Available water capacity: Very low (about 1.6 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7s-8

Land capability, nonirrigated: 7s-8

Storie index: 11 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 1 inch; loam

Bt1—1 to 7 inches; gravelly loam

Bt2—7 to 13 inches; very cobbly loam

Bqm—13 inches; cemented, very gravelly duripan

Characteristics of Fallager Loam

Slope: 0 to 3 percent

Geomorphic position: Swales on fan terraces

Parent material: Loamy alluvium over clayey alluvium over cemented, gravelly alluvium derived from volcanic rocks

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: 0 to 10 percent medium,

rounded gravel, 0 to 25 percent rounded cobbles

Depth to a restrictive feature (duripan): 4 to 10 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 10 inches

Available water capacity: Very low (about 0.9 inch)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Storie index: 5 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

A—0 to 1 inch; loam

Bt1—1 to 3 inches; gravelly clay loam

2Bt2—3 to 7 inches; gravelly clay

3Bqm—7 inches; cemented, gravelly duripan

Characteristics of Anita Gravelly Clay, Gravelly Duripan

Slope: 0 to 3 percent

Geomorphic position: Swales on fan terraces

Parent material: Clayey alluvium over cemented, sandy alluvium derived from volcanic rocks

Observed vegetation: Annual grasses and forbs

Surface feature: Surface cracking occurs when the soil is dry.

Texture of the surface layer: Gravelly clay

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, rounded

gravel, 0 to 25 percent rounded cobbles

Depth to a restrictive feature (duripan): 10 to 20 inches

Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 20 inches

Available water capacity: Very low (about 1.5 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 6s-5

Land capability, nonirrigated: 6s-5

Storie index: 2 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

- A—0 to 3 inches; gravelly clay
- Bss1—3 to 8 inches; gravelly clay
- Bss2—8 to 15 inches; gravelly clay
- 2Bkqm—15 inches; cemented, gravelly duripan

Minor Components in Map Unit 606**Galt clay and similar soils**

- Composition:* 2 percent
- Slope:* 0 to 1 percent
- Geomorphic position:* Swales on fan terraces
- Hydric soil status:* Hydric

Areas where the duripan crops out

- Composition:* 2 percent
- Slope:* 0 to 3 percent
- Geomorphic position:* Fan terraces
- Hydric soil status:* Not hydric

Clayey soils that are less than 10 inches deep to a duripan

- Composition:* 2 percent
- Slope:* 0 to 3 percent
- Geomorphic position:* Swales on fan terraces
- Hydric soil status:* Hydric

Loamy or clayey soils

- Composition:* 2 percent
- Slope:* 0 to 1 percent
- Geomorphic position:* Vernal pools on fan terraces
- Hydric soil status:* Hydric

Tuscan gravelly loam and similar soils

- Composition:* 2 percent
- Slope:* 0 to 3 percent
- Geomorphic position:* Mounds on fan terraces
- Hydric soil status:* Not hydric

**609—Anita, gravelly duripan-Tuscan taxadjunct complex,
0 to 2 percent slopes****Map Unit Setting**

- General location:* Northwestern Butte County
- Major uses:* Livestock grazing, wildlife habitat, and watershed
- Major land resource area:* 17
- Landscape:* Sacramento Valley
- Elevation:* 190 to 295 feet (58 to 91 meters)
- Mean annual precipitation:* 25 to 27 inches (635 to 686 millimeters)
- Mean annual air temperature:* 61 degrees F (16 degrees C)
- Frost-free period:* 250 days

Map Unit Composition

- Anita gravelly clay, gravelly duripan—50 percent
- Tuscan taxadjunct gravelly clay loam—40 percent
- Minor components—10 percent

Characteristics of Anita Gravelly Clay, Gravelly Duripan

Slope: 0 to 2 percent

Geomorphic position: Clay flats and swales on fan terraces

Parent material: Clayey alluvium over cemented, cobbly and gravelly alluvium derived from volcanic rocks

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Gravelly clay

Percentage of the surface covered by rock fragments: 0 to 10 percent medium, rounded gravel, 0 to 60 percent rounded cobbles

Depth to a restrictive feature (duripan): 10 to 20 inches

Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 20 inches

Available water capacity: Very low (about 1.7 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7w-2

Land capability, nonirrigated: 7w-2

Storie index: 3 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

A—0 to 3 inches; gravelly clay

Bss1—3 to 8 inches; gravelly clay

Bss2—8 to 15 inches; gravelly clay

2Bkqm—15 inches; gravelly duripan

Characteristics of Tuscan Taxadjunct Gravelly Clay Loam

Slope: 0 to 2 percent

Geomorphic position: Mounds on fan terraces

Parent material: Clayey alluvium over cemented, cobbly and gravelly alluvium derived from volcanic rocks

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Gravelly clay loam

Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, rounded gravel, 0 to 10 percent rounded cobbles

Depth to a restrictive feature (duripan): 20 to 40 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 2 to 40 inches

Available water capacity: Low (about 3.7 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 5w-8

Land capability, nonirrigated: 5w-8

Storie index: 15 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile

A—0 to 2 inches; gravelly clay loam
 Bt1—2 to 5 inches; gravelly clay
 Bt2—5 to 13 inches; gravelly clay
 Bt3—13 to 23 inches; gravelly clay loam
 Bt4—23 to 29 inches; very gravelly clay loam
 2Bqm—29 inches; cemented, extremely cobbly duripan

Minor Components in Map Unit 609

Galt and similar soils

Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Clay flats on fan terraces
Hydric soil status: Hydric

Wafap and similar soils

Composition: 3 percent
Slope: 0 to 2 percent
Geomorphic position: Bars on fan terraces
Hydric soil status: Not hydric

Soils that are frequently ponded for long periods

Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Vernal pools on fan terraces
Hydric soil status: Hydric

Tuscan and similar soils

Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Mounds on fan terraces
Hydric soil status: Not hydric

614—Doemill-Jokerst complex, 0 to 3 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Livestock grazing, homesite development, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 160 to 520 feet (50 to 160 meters)
Mean annual precipitation: 25 to 29 inches (635 to 737 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 255 days

Map Unit Composition

Doemill gravelly loam—50 percent
 Jokerst very cobbly loam—40 percent
 Minor components—10 percent

Characteristics of Doemill Gravelly Loam

Slope: 0 to 3 percent

Geomorphic position: Mounds on ridgetops and strath terraces on volcanic ridges

Parent material: Loamy residuum weathered from volcanic breccia

Observed vegetation: Annual grasses and forbs and blue oak

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 0 to 20 percent coarse, subangular gravel, 2 to 10 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 10 to 20 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 2 to 20 inches

Available water capacity: Very low (about 2.1 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 6s-8

Land capability, nonirrigated: 6s-8

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 1 inch; gravelly loam

Bt1—1 to 5 inches; gravelly loam

Bt2—5 to 9 inches; gravelly loam

Bt3—9 to 14 inches; gravelly loam

R—14 inches; bedrock

Characteristics of Jokerst Very Cobbly Loam

Slope: 0 to 3 percent

Geomorphic position: Swales on ridgetops and strath terraces on volcanic ridges

Parent material: Loamy residuum weathered from volcanic breccia

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Very cobbly loam

Percentage of the surface covered by rock fragments: 0 to 10 percent medium, subangular gravel, 2 to 30 percent subangular cobbles, 3 to 50 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 2 to 10 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Frequent

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 10 inches

Available water capacity: Very low (about 0.4 inch)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 1 inch; very cobbly loam

Bt—1 to 4 inches; gravelly loam

R—4 inches; bedrock

Minor Components in Map Unit 614

Rock outcrop

Composition: 5 percent

Slope: 0 to 3 percent

Geomorphic position: Ridgetops and strath terraces on volcanic ridges

Hydric soil status: Not hydric

Lithic Xerorthents and similar soils

Composition: 3 percent

Slope: 0 to 3 percent

Geomorphic position: Ridgetops and strath terraces on volcanic ridges

Hydric soil status: Not hydric

Soils that are frequently ponded for long periods

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Vernal pools on ridgetops and strath terraces on volcanic ridges

Hydric soil status: Hydric

615—Doemill-Jokerst complex, 3 to 8 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Livestock grazing, homesite development, wildlife habitat, and watershed

Major land resource area: 18

Landscape: Southern Cascade foothills

Elevation: 160 to 1,000 feet (50 to 305 meters)

Mean annual precipitation: 25 to 29 inches (635 to 737 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 250 to 255 days

Map Unit Composition

Doemill gravelly loam—50 percent

Jokerst very cobbly loam—40 percent

Minor components—10 percent

Characteristics of Doemill Gravelly Loam

Slope: 3 to 8 percent

Geomorphic position: Mounds on ridgetops and strath terraces on volcanic ridges
(fig. 26)

Parent material: Loamy residuum weathered from volcanic breccia

Observed vegetation: Annual grasses and forbs and blue oak

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 0 to 20 percent coarse, subangular gravel, 2 to 10 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 10 to 20 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 2 to 20 inches

Available water capacity: Very low (about 2.1 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 6e-8

Land capability, nonirrigated: 6e-8

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 1 inch; gravelly loam

Bt1—1 to 5 inches; gravelly loam

Bt2—5 to 9 inches; gravelly loam

Bt3—9 to 14 inches; gravelly loam

R—14 inches; bedrock

Characteristics of Jokerst Very Cobbly Loam

Slope: 3 to 8 percent

Geomorphic position: Swales on ridgetops and strath terraces on volcanic ridges (fig. 26)

Parent material: Loamy residuum weathered from volcanic breccia

Observed vegetation: Annual grasses and forbs



Figure 26.—A typical area of Doemill-Jokerst complex, 3 to 8 percent slopes, showing mound and swale microtopography. Highway 99 is in the background. (Photo by Zeke Lunder)

Texture of the surface layer: Very cobbly loam

Percentage of the surface covered by rock fragments: 0 to 10 percent medium, subangular gravel, 2 to 30 percent subangular cobbles, 3 to 50 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 2 to 10 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Frequent

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 10 inches

Available water capacity: Very low (about 0.4 inch)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 1 inch; very cobbly loam

Bt—1 to 4 inches; gravelly loam

R—4 inches; bedrock

Minor Components in Map Unit 615

Rock outcrop

Composition: 6 percent

Slope: 3 to 8 percent

Geomorphic position: Ridgetops and strath terraces on volcanic ridges

Hydric soil status: Not hydric

Lithic Xerorthents and similar soils

Composition: 3 percent

Slope: 3 to 8 percent

Geomorphic position: Ridgetops and strath terraces on volcanic ridges

Hydric soil status: Not hydric

Soils that are frequently ponded for long periods

Composition: 1 percent

Slope: 0 to 1 percent

Geomorphic position: Vernal pools on ridgetops and strath terraces on volcanic ridges

Hydric soil status: Hydric

616—Jokerst-Doemill-Typic Haploxeralfs complex, 8 to 15 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Livestock grazing, wildlife habitat, homesite development, and watershed

Major land resource area: 18

Landscape: Southern Cascade foothills

Elevation: 160 to 1,115 feet (50 to 341 meters)

Mean annual precipitation: 25 to 29 inches (635 to 737 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 250 to 255 days

Map Unit Composition

Jokerst very cobbly loam—35 percent

Doemill gravelly loam—35 percent

Typic Haploxerafls gravelly loam—15 percent

Minor components—15 percent

Characteristics of Jokerst Very Cobbly Loam

Slope: 8 to 15 percent

Geomorphic position: Shoulder slopes and backslopes on volcanic ridges

Parent material: Loamy residuum weathered from volcanic breccia

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Very cobbly loam

Percentage of the surface covered by rock fragments: 0 to 10 percent medium, subangular gravel, 2 to 30 percent subangular cobbles, 3 to 50 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 2 to 10 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 0 to 10 inches

Available water capacity: Very low (about 0.4 inch)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 1 inch; very cobbly loam

Bt—1 to 4 inches; gravelly loam

R—4 inches; bedrock

Characteristics of Doemill Gravelly Loam

Slope: 8 to 15 percent

Geomorphic position: Shoulder slopes and backslopes on volcanic ridges

Parent material: Loamy residuum weathered from volcanic breccia

Observed vegetation: Annual grasses and forbs and blue oak

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 0 to 20 percent coarse, subangular gravel, 2 to 10 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 10 to 20 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 4 to 20 inches

Available water capacity: Very low (about 2.1 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 6e-8

Land capability, nonirrigated: 6e-8

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 1 inch; gravelly loam

Bt1—1 to 5 inches; gravelly loam

Bt2—5 to 9 inches; gravelly loam

Bt3—9 to 14 inches; gravelly loam

R—14 inches; bedrock

Characteristics of Typic Haploxeralfs Gravelly Loam

Slope: 8 to 15 percent

Geomorphic position: Shoulder slopes and backslopes on volcanic ridges

Parent material: Loamy colluvium derived from volcanic rocks

Observed vegetation: Interior live oak, blue oak, foothill pine, whiteleaf manzanita, buckbrush, and annual grasses and forbs

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 0 to 25 percent fine, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 20 percent subangular boulders

Depth to a restrictive feature: 20 to 60 inches to lithic bedrock; 20 to 60 inches to paralithic bedrock

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.6 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 2 inches; gravelly loam

Bt1—2 to 8 inches; gravelly clay loam

Bt2—8 to 16 inches; very gravelly clay loam

Bt3—16 to 27 inches; very gravelly clay loam

Bt4—27 to 40 inches; very gravelly clay loam

2Cr—40 inches; bedrock

Minor Components in Map Unit 616

Rock outcrop

Composition: 10 percent

Slope: 8 to 15 percent

Geomorphic position: Shoulder slopes and backslopes on volcanic ridges

Hydric soil status: Not hydric

Lithic Xerorthents and similar soils

Composition: 5 percent

Slope: 8 to 15 percent

Geomorphic position: Shoulder slopes and backslopes on volcanic ridges

Hydric soil status: Not hydric

617—Jokerst-Doemill-Typic Haploxeralfs complex, 15 to 30 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Livestock grazing, wildlife habitat, and watershed

Major land resource area: 18

Landscape: Southern Cascade foothills

Elevation: 255 to 800 feet (79 to 244 meters)

Mean annual precipitation: 25 to 29 inches (635 to 737 millimeters)

Mean annual air temperature: 61 degrees F (16 degrees C)

Frost-free period: 250 to 255 days

Map Unit Composition

Doemill gravelly loam—35 percent

Jokerst very cobbly loam—30 percent

Typic Haploxeralfs gravelly loam—20 percent

Minor components—15 percent

Characteristics of Doemill Gravelly Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes on volcanic ridges

Parent material: Loamy residuum weathered from volcanic breccia

Observed vegetation: Annual grasses and forbs and blue oak

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 0 to 20 percent coarse, subangular gravel, 2 to 10 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 10 to 20 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 6 to 20 inches

Available water capacity: Very low (about 2.1 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 6e-8

Land capability, nonirrigated: 6e-8

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

- A—0 to 1 inch; gravelly loam
- Bt1—1 to 5 inches; gravelly loam
- Bt2—5 to 9 inches; gravelly loam
- Bt3—9 to 14 inches; gravelly loam
- R—14 inches; bedrock

Characteristics of Jokerst Very Cobbly Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes on volcanic ridges

Parent material: Loamy residuum weathered from volcanic breccia

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Very cobbly loam

Percentage of the surface covered by rock fragments: 0 to 10 percent medium, subangular gravel, 2 to 30 percent subangular cobbles, 3 to 50 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 2 to 10 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 0 to 10 inches

Available water capacity: Very low (about 0.4 inch)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

- A—0 to 1 inch; very cobbly loam
- Bt—1 to 4 inches; gravelly loam
- R—4 inches; bedrock

Characteristics of Typic Haploxeralfs Gravelly Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes on volcanic ridges

Parent material: Loamy colluvium derived from volcanic rocks

Observed vegetation: Interior live oak, blue oak, foothill pine, whiteleaf manzanita, buckbrush, and annual grasses and forbs

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 0 to 25 percent fine, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 20 percent subangular boulders

Depth to a restrictive feature: 20 to 60 inches to lithic bedrock; 20 to 60 inches to paralithic bedrock

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.6 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 2 inches; gravelly loam

Bt1—2 to 8 inches; gravelly clay loam

Bt2—8 to 16 inches; very gravelly clay loam

Bt3—16 to 27 inches; very gravelly clay loam

Bt4—27 to 40 inches; very gravelly clay loam

2Cr—40 inches; bedrock

Minor Components in Map Unit 617

Rock outcrop

Composition: 10 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on volcanic ridges

Hydric soil status: Not hydric

Lithic Xerorthents and similar soils

Composition: 5 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on volcanic ridges

Hydric soil status: Not hydric

619—Carhart taxadjunct, 0 to 2 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Livestock grazing, wildlife habitat, and watershed

Major land resource area: 18

Landscape: Southern Cascade foothills

Elevation: 255 to 530 feet (79 to 162 meters)

Mean annual precipitation: 26 to 29 inches (660 to 737 millimeters)

Mean annual air temperature: 61 degrees F (16 degrees C)

Frost-free period: 250 to 260 days

Map Unit Composition

Carhart taxadjunct clay—90 percent

Minor components—10 percent

Characteristics of Carhart Taxadjunct Clay

Slope: 0 to 2 percent

Geomorphic position: Clay basins on strath terraces

Parent material: Clayey alluvium derived from volcanic rocks

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Clay

Percentage of the surface covered by rock fragments: 0 to 10 percent fine, subrounded gravel, 5 to 30 percent subrounded cobbles, 0 to 20 percent subrounded stones, 0 to 3 percent subrounded boulders

Depth to a restrictive feature (lithic bedrock): 10 to 20 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 40 inches

Available water capacity: Very low (about 2.3 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

A—0 to 4 inches; clay

Bss1—4 to 11 inches; gravelly clay

Bss2—11 to 17 inches; clay

2R—17 inches; bedrock

Minor Components in Map Unit 619

Carhart and similar soils

Composition: 5 percent

Slope: 0 to 2 percent

Geomorphic position: Clay basins on strath terraces

Hydric soil status: Hydric

Anita soils with a gravelly duripan and similar soils

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Clay basins on strath terraces

Hydric soil status: Hydric

Soils that are frequently ponded for long periods

Composition: 2 percent

Slope: 0 to 1 percent

Geomorphic position: Vernal pools in clay basins on strath terraces

Hydric soil status: Hydric

Rock outcrop

Composition: 1 percent

Slope: 0 to 2 percent

Geomorphic position: Strath terraces

Hydric soil status: Not hydric

620—Doemill-Jokerst-Ultic Haploxeralfs, thermic, complex, 3 to 8 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Livestock grazing, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 400 to 1,695 feet (122 to 518 meters)
Mean annual precipitation: 28 to 40 inches (711 to 1,016 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 255 to 260 days

Map Unit Composition

Doemill gravelly loam—40 percent
 Jokerst very cobbly loam—25 percent
 Ultic Haploxeralfs, thermic, gravelly loam—20 percent
 Minor components—15 percent

Characteristics of Doemill Gravelly Loam

Slope: 3 to 8 percent
Geomorphic position: The top of volcanic ridges
Parent material: Loamy residuum weathered from volcanic breccia
Observed vegetation: Annual grasses and forbs, blue oak, and buckbrush
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 20 percent coarse, subangular gravel, 2 to 10 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 10 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)
Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 2 to 20 inches
Available water capacity: Very low (about 2.1 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 6e-8
Land capability, nonirrigated: 6e-8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile

A—0 to 1 inch; gravelly loam
 Bt1—1 to 5 inches; gravelly loam
 Bt2—5 to 9 inches; gravelly loam
 Bt3—9 to 14 inches; gravelly loam
 R—14 inches; bedrock

Characteristics of Jokerst Very Cobbly Loam

Slope: 3 to 8 percent
Geomorphic position: The top of volcanic ridges
Parent material: Loamy residuum weathered from volcanic breccia
Observed vegetation: Annual grasses and forbs and blue oak
Texture of the surface layer: Very cobbly loam
Percentage of the surface covered by rock fragments: 0 to 10 percent medium, subangular gravel, 2 to 30 percent subangular cobbles, 3 to 50 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 2 to 10 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 10 inches

Available water capacity: Very low (about 0.4 inch)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 1 inch; very cobbly loam

Bt—1 to 4 inches; gravelly loam

R—4 inches; bedrock

Characteristics of Ultic Haploxeralfs, Thermic, Gravelly Loam

Slope: 3 to 8 percent

Geomorphic position: The top of volcanic ridges

Parent material: Loamy residuum weathered from volcanic rocks

Observed vegetation: Annual grasses and forbs, blue oak, foothill pine, interior live oak, buckbrush, whiteleaf manzanita, and Pacific poison oak

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 5 to 20 percent fine, subangular gravel, 0 to 80 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 10 percent subangular boulders

Depth to a restrictive feature: 20 to 40 inches to lithic bedrock; 20 to 40 inches to paralithic bedrock

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 18 to 40 inches

Available water capacity: Low (about 3.0 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 4e-8

Land capability, nonirrigated: 4e-8

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A—0 to 2 inches; gravelly loam

Bt1—2 to 6 inches; very cobbly clay loam

Bt2—6 to 13 inches; very cobbly clay loam

Bt3—13 to 21 inches; very cobbly clay loam

Bt4—21 to 31 inches; very cobbly clay loam

R—31 inches; bedrock

Minor Components in Map Unit 620

Rock outcrop

Composition: 10 percent

Slope: 3 to 8 percent

Geomorphic position: The top of volcanic ridges

Hydric soil status: Not hydric

Lithic Xerorthents and similar soils

Composition: 5 percent

Slope: 3 to 8 percent

Geomorphic position: The top of volcanic ridges

Hydric soil status: Not hydric

621—Doemill-Jokerst-Ultic Haploxeralfs, thermic, complex, 8 to 15 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Livestock grazing, wildlife habitat, and watershed

Major land resource area: 18

Landscape: Southern Cascade foothills

Elevation: 400 to 1,695 feet (122 to 518 meters)

Mean annual precipitation: 28 to 40 inches (711 to 1,016 millimeters)

Mean annual air temperature: 61 degrees F (16 degrees C)

Frost-free period: 255 to 260 days

Map Unit Composition

Doemill gravelly loam—30 percent

Jokerst very cobbly loam—30 percent

Ultic Haploxeralfs, thermic, gravelly loam—20 percent

Minor components—20 percent

Characteristics of Doemill Gravelly Loam

Slope: 8 to 15 percent

Geomorphic position: The top and shoulder slopes of volcanic ridges

Parent material: Loamy residuum weathered from volcanic breccia

Observed vegetation: Annual grasses and forbs, blue oak, and buckbrush

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 0 to 20 percent coarse, subangular gravel, 2 to 10 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 10 to 20 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 4 to 20 inches

Available water capacity: Very low (about 2.1 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 6e-8

Land capability, nonirrigated: 6e-8

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 1 inch; gravelly loam

Bt1—1 to 5 inches; gravelly loam

Bt2—5 to 9 inches; gravelly loam

Bt3—9 to 14 inches; gravelly loam

R—14 inches; bedrock

Characteristics of Jokerst Very Cobbly Loam

Slope: 8 to 15 percent

Geomorphic position: The top and shoulder slopes of volcanic ridges

Parent material: Loamy residuum weathered from volcanic breccia

Observed vegetation: Annual grasses and forbs and blue oak

Texture of the surface layer: Very cobbly loam

Percentage of the surface covered by rock fragments: 0 to 10 percent medium, subangular gravel, 2 to 30 percent subangular cobbles, 3 to 50 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 2 to 10 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 0 to 10 inches

Available water capacity: Very low (about 0.4 inch)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 1 inch; very cobbly loam

Bt—1 to 4 inches; gravelly loam

R—4 inches; bedrock

Characteristics of Ultic Haploxeralfs, Thermic, Gravelly Loam

Slope: 8 to 15 percent

Geomorphic position: The top and shoulder slopes of volcanic ridges

Parent material: Loamy residuum weathered from volcanic rocks

Observed vegetation: Annual grasses and forbs, blue oak, foothill pine, interior live oak, buckbrush, whiteleaf manzanita, and Pacific poison oak

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 5 to 20 percent fine, subangular gravel, 0 to 80 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 10 percent subangular boulders

Depth to a restrictive feature: 20 to 40 inches to lithic bedrock; 20 to 40 inches to paralithic bedrock

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 19 to 40 inches

Available water capacity: Low (about 3.0 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-8

Land capability, nonirrigated: 4e-8

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A—0 to 2 inches; gravelly loam

Bt1—2 to 6 inches; very cobbly clay loam

Bt2—6 to 13 inches; very cobbly clay loam

Bt3—13 to 21 inches; very cobbly clay loam

Bt4—21 to 31 inches; very cobbly clay loam

R—31 inches; bedrock

Minor Components in Map Unit 621

Rock outcrop

Composition: 12 percent

Slope: 8 to 15 percent

Geomorphic position: Shoulder slopes on volcanic ridges

Hydric soil status: Not hydric

Lithic Xerorthents and similar soils

Composition: 8 percent

Slope: 8 to 15 percent

Geomorphic position: Shoulder slopes on volcanic ridges

Hydric soil status: Not hydric

622—Xerorthents, shallow-Typic Haploxeralfs-Rock outcrop, cliffs, complex, 15 to 30 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Livestock grazing, wildlife habitat, and watershed

Major land resource area: 18

Landscape: Southern Cascade foothills

Elevation: 200 to 1,495 feet (61 to 457 meters)

Mean annual precipitation: 26 to 38 inches (660 to 965 millimeters)

Mean annual air temperature: 59 to 63 degrees F (15 to 17 degrees C)

Frost-free period: 250 to 260 days

Map Unit Composition

Xerorthents, shallow—40 percent

Typic Haploxeralfs gravelly loam—30 percent

Rock outcrop (mudflow-breccia cliffs)—15 percent

Minor components—15 percent

Characteristics of Xerorthents, Shallow

Slope: 15 to 30 percent

Geomorphic position: Side slopes in canyons

Parent material: Loamy residuum and/or colluvium derived from volcanic rocks

Observed vegetation: Annual grasses and forbs, buckbrush, and blue oak

Texture of the surface layer: Gravelly clay loam

Percentage of the surface covered by rock fragments: 0 to 25 percent fine, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 40 percent subangular stones, 0 to 40 percent subangular boulders

Depth to a restrictive feature: 2 to 20 inches to paralithic bedrock; 2 to 20 inches to lithic bedrock

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.1 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7s-8

Land capability, nonirrigated: 7s-8

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 2 inches; gravelly clay loam

Bt1—2 to 5 inches; gravelly clay loam

Bt2—5 to 8 inches; very cobbly clay loam

2R—8 inches; bedrock

Characteristics of Typic Haploxeralfs Gravelly Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes in canyons

Parent material: Loamy residuum and/or colluvium derived from volcanic rocks

Observed vegetation: Interior live oak, blue oak, foothill pine, buckbrush, manzanita, Pacific poison oak, toyon, and annual grasses and forbs

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 0 to 25 percent fine, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 20 percent subangular boulders

Depth to a restrictive feature: 20 to 60 inches to paralithic bedrock; 20 to 60 inches to lithic bedrock

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.6 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

*Interpretive groups**Land capability, irrigated: 4e-1**Land capability, nonirrigated: 4e-1**Hydric soil status: Not hydric**Hydrologic soil group: B**Typical profile*

A—0 to 2 inches; gravelly loam

Bt1—2 to 8 inches; gravelly clay loam

Bt2—8 to 16 inches; very gravelly clay loam

Bt3—16 to 27 inches; very gravelly clay loam

Bt4—27 to 40 inches; very gravelly clay loam

2Cr—40 inches; bedrock

Characteristics of Rock Outcrop (Mudflow-Breccia Cliffs)*Slope: 15 to 200 percent**Geomorphic position: Backslopes in canyons**Surface runoff (bare conditions): Very high**Definition: Rock outcrop consists of exposures of bedrock with no soil.****Minor Components in Map Unit 622*****Rock outcrop***Composition: 8 percent**Slope: 15 to 30 percent**Geomorphic position: Side slopes in canyons**Hydric soil status: Not hydric***Lithic Haploxeralfs and similar soils***Composition: 5 percent**Slope: 15 to 30 percent**Geomorphic position: Side slopes in canyons**Hydric soil status: Not hydric***Aquic Durixeralfs and similar soils***Composition: 2 percent**Slope: 15 to 30 percent**Geomorphic position: Drainageways on side slopes in canyons**Hydric soil status: Hydric***623—Xerorthents, shallow-Typic Haploxeralfs-Rock outcrop, cliffs, complex, 30 to 50 percent slopes*****Map Unit Setting****General location: North-central Butte County**Major uses: Livestock grazing, wildlife habitat, and watershed**Major land resource area: 18**Landscape: Southern Cascade foothills**Elevation: 295 to 1,495 feet (91 to 457 meters)**Mean annual precipitation: 26 to 38 inches (660 to 965 millimeters)**Mean annual air temperature: 59 to 63 degrees F (15 to 17 degrees C)**Frost-free period: 250 to 260 days*

Map Unit Composition

Xerorthents, shallow—40 percent
 Typic Haploxerafls gravelly loam—25 percent
 Rock outcrop (mudflow-breccia cliffs)—20 percent
 Minor components—15 percent

Characteristics of Xerorthents, Shallow

Slope: 30 to 50 percent
Geomorphic position: Backslopes in canyons
Parent material: Loamy residuum and/or colluvium derived from volcanic rocks
Observed vegetation: Annual grasses and forbs, buckbrush, and blue oak
Texture of the surface layer: Gravelly clay loam
Percentage of the surface covered by rock fragments: 0 to 25 percent fine, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 40 percent subangular stones, 0 to 40 percent subangular boulders
Depth to a restrictive feature: 2 to 20 inches to paralithic bedrock; 2 to 20 inches to lithic bedrock
Shrink-swell potential: Moderate (LEP of 3 to less than 6)
Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.1 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7s-8
Land capability, nonirrigated: 7s-8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile

A—0 to 2 inches; gravelly clay loam
 Bt1—2 to 5 inches; gravelly clay loam
 Bt2—5 to 8 inches; very cobbly clay loam
 2R—8 inches; bedrock

Characteristics of Typic Haploxerafls Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Backslopes in canyons
Parent material: Loamy residuum and/or colluvium derived from volcanic rocks
Observed vegetation: Interior live oak, blue oak, foothill pine, buckbrush, manzanita, Pacific poison oak, toyon, and annual grasses and forbs
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 25 percent fine, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 20 percent subangular boulders
Depth to a restrictive feature: 20 to 60 inches to paralithic bedrock; 20 to 60 inches to lithic bedrock
Shrink-swell potential: Moderate (LEP of 3 to less than 6)
Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None

Water table (zone of saturation): None observed
Available water capacity: Low (about 4.6 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

A—0 to 2 inches; gravelly loam
 Bt1—2 to 8 inches; gravelly clay loam
 Bt2—8 to 16 inches; very gravelly clay loam
 Bt3—16 to 27 inches; very gravelly clay loam
 Bt4—27 to 40 inches; very gravelly clay loam
 2Cr—40 inches; bedrock

Characteristics of Rock Outcrop (Mudflow-Breccia Cliffs)

Slope: 30 to 200 percent
Geomorphic position: Backslopes in canyons
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 623

Rock outcrop

Composition: 10 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Lithic Haploxeralfs and similar soils

Composition: 4 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Aquic Durixeralfs and similar soils

Composition: 1 percent
Slope: 30 to 50 percent
Geomorphic position: Drainageways on backslopes in canyons
Hydric soil status: Hydric

624—Ultic Haploxeralfs, mesic-Rockstripe complex, 2 to 15 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Homesite development, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 895 to 2,200 feet (274 to 671 meters)
Mean annual precipitation: 35 to 55 inches (889 to 1,397 millimeters)

Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)

Frost-free period: 235 to 260 days

Map Unit Composition

Ultic Haploxeralfs, mesic, gravelly loam—60 percent

Rockstripe very gravelly loam—25 percent

Minor components—15 percent

Characteristics of Ultic Haploxeralfs, Mesic, Gravelly Loam

Slope: 2 to 15 percent

Geomorphic position: The top of volcanic ridges

Parent material: Loamy residuum weathered from volcanic breccia

Observed vegetation: Foothill pine, California black oak, whiteleaf manzanita, buckbrush, scrub oak, Pacific poison oak, toyon, and annual grasses and forbs

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 25 percent fine, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 10 percent subangular boulders

Depth to a restrictive feature: 20 to 60 inches to lithic bedrock; 20 to 60 inches to paralithic bedrock

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 3.8 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very low

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-3

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 4 inches; gravelly loam

Bt1—4 to 9 inches; cobbly loam

Bt2—9 to 23 inches; very stony clay loam

Bt3—23 to 32 inches; very cobbly clay loam

Bt4—32 to 42 inches; extremely stony clay loam

Cr—42 inches; bedrock

Characteristics of Rockstripe Very Gravelly Loam

Slope: 2 to 15 percent

Geomorphic position: The top of volcanic ridges

Parent material: Loamy residuum weathered from volcanic breccia

Observed vegetation: Annual grasses and forbs, buckbrush, whiteleaf manzanita, Pacific poison oak, and foothill pine

Texture of the surface layer: Very gravelly loam

Percentage of the surface covered by rock fragments: 5 to 30 percent medium,

subangular gravel, 0 to 20 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 10 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 2 to 10 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.1 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7s-8

Land capability, nonirrigated: 7s-8

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 2 inches; very gravelly loam

Bt1—2 to 6 inches; very cobbly loam

Bt2—6 to 9 inches; cobbly loam

R—9 inches; bedrock

Minor Components in Map Unit 624

Rock outcrop

Composition: 8 percent

Slope: 2 to 15 percent

Geomorphic position: The top of volcanic ridges

Hydric soil status: Not hydric

Paradiso and similar soils

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: The top of volcanic ridges

Hydric soil status: Not hydric

Schott and similar soils

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: The top of volcanic ridges

Hydric soil status: Not hydric

Lithic Haploxeralfs and similar soils

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: The top of volcanic ridges

Hydric soil status: Not hydric

Lithic Dystroxerepts and similar soils

Composition: 1 percent

Slope: 2 to 15 percent

Geomorphic position: The top of volcanic ridges

Hydric soil status: Not hydric

625—Ultic Haploxeralfs, mesic-Rockstripe complex, 15 to 30 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Homesite development, wildlife habitat, and watershed

Major land resource area: 18

Landscape: Southern Cascade foothills

Elevation: 495 to 2,595 feet (152 to 792 meters)

Mean annual precipitation: 35 to 62 inches (889 to 1,575 millimeters)

Mean annual air temperature: 55 to 61 degrees F (13 to 16 degrees C)

Frost-free period: 225 to 260 days

Map Unit Composition

Ultic Haploxeralfs, mesic, gravelly loam—50 percent

Rockstripe very gravelly loam—35 percent

Minor components—15 percent

Characteristics of Ultic Haploxeralfs, Mesic, Gravelly Loam

Slope: 15 to 30 percent

Geomorphic position: The top and shoulder slopes of volcanic ridges

Parent material: Loamy colluvium and/or residuum weathered from volcanic breccia

Observed vegetation: Foothill pine, California black oak, whiteleaf manzanita, buckbrush, scrub oak, Pacific poison oak, toyon, and annual grasses and forbs

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 25 percent fine, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 10 percent subangular boulders

Depth to a restrictive feature: 20 to 60 inches to paralithic bedrock; 20 to 60 inches to lithic bedrock

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 3.8 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 4 inches; gravelly loam

Bt1—4 to 9 inches; cobbly loam

Bt2—9 to 23 inches; very stony clay loam

Bt3—23 to 32 inches; very cobbly clay loam

Bt4—32 to 42 inches; extremely stony clay loam

Cr—42 inches; bedrock

Characteristics of Rockstripe Very Gravelly Loam

Slope: 15 to 30 percent

Geomorphic position: The top and shoulder slopes of volcanic ridges

Parent material: Loamy residuum weathered from volcanic breccia

Observed vegetation: Annual grasses and forbs, buckbrush, whiteleaf manzanita, Pacific poison oak, and foothill pine

Texture of the surface layer: Very gravelly loam

Percentage of the surface covered by rock fragments: 5 to 30 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 10 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 2 to 10 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.1 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7s-8

Land capability, nonirrigated: 7s-8

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 2 inches; very gravelly loam

Bt1—2 to 6 inches; very cobbly loam

Bt2—6 to 9 inches; cobbly loam

R—9 inches; bedrock

Minor Components in Map Unit 625

Rock outcrop

Composition: 10 percent

Slope: 15 to 30 percent

Geomorphic position: The top and shoulder slopes of volcanic ridges

Hydric soil status: Not hydric

Paradiso and similar soils

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: The top and shoulder slopes of volcanic ridges

Hydric soil status: Not hydric

Schott and similar soils

Composition: 1 percent

Slope: 15 to 30 percent

Geomorphic position: The top and shoulder slopes of volcanic ridges

Hydric soil status: Not hydric

Lithic Haploxeralfs and similar soils

Composition: 1 percent

Slope: 15 to 30 percent

Geomorphic position: The top and shoulder slopes of volcanic ridges

Hydric soil status: Not hydric

Lithic Dystroxerepts and similar soils*Composition:* 1 percent*Slope:* 15 to 30 percent*Geomorphic position:* The top and shoulder slopes of volcanic ridges*Hydric soil status:* Not hydric**626—Ultic Haploxeralfs-Rockstripe-Rock outcrop, cliffs, complex, 30 to 50 percent slopes*****Map Unit Setting****General location:* North-central Butte County*Major uses:* Wildlife habitat and watershed*Major land resource area:* 18*Landscape:* Southern Cascade foothills*Elevation:* 600 to 2,495 feet (183 to 762 meters)*Mean annual precipitation:* 30 to 60 inches (762 to 1,524 millimeters)*Mean annual air temperature:* 55 to 61 degrees F (13 to 16 degrees C)*Frost-free period:* 200 to 260 days***Map Unit Composition***

Ultic Haploxeralfs gravelly loam—40 percent

Rockstripe very gravelly loam—35 percent

Rock outcrop (mudflow-breccia cliffs)—15 percent

Minor components—10 percent

Characteristics of Ultic Haploxeralfs Gravelly Loam*Slope:* 30 to 50 percent*Geomorphic position:* Backslopes in canyons*Parent material:* Loamy colluvium derived from volcanic rocks*Observed vegetation:* Foothill pine, live oak, California black oak, scrub oak, Pacific poison oak, California laurel, whiteleaf manzanita, toyon, and deerbrush*Texture of the surface layer:* Gravelly loam*Percentage of the surface covered by rock fragments:* 0 to 25 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 5 percent subangular boulders*Depth to a restrictive feature:* 20 to 60 inches to paralithic bedrock; 20 to 60 inches to lithic bedrock*Shrink-swell potential:* Moderate (LEP of 3 to less than 6)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* None*Annual ponding frequency:* None*Water table (zone of saturation):* None observed*Available water capacity:* Moderate (about 7.5 inches)*Natural drainage class:* Well drained*Surface runoff (bare conditions):* Medium***Interpretive groups****Land capability, irrigated:* 6e-1*Land capability, nonirrigated:* 6e-1*Hydric soil status:* Not hydric*Hydrologic soil group:* B

Typical profile

A—0 to 4 inches; gravelly loam
 Bt1—4 to 10 inches; gravelly loam
 Bt2—10 to 18 inches; gravelly clay loam
 Bt3—18 to 35 inches; gravelly clay loam
 Bt4—35 to 48 inches; gravelly clay
 Crt—48 inches; bedrock

Characteristics of Rockstripe Very Gravelly Loam

Slope: 30 to 50 percent

Geomorphic position: Backslopes in canyons

Parent material: Loamy residuum weathered from volcanic breccia

Observed vegetation: Annual grasses and forbs, buckbrush, whiteleaf manzanita, Pacific poison oak, and foothill pine

Texture of the surface layer: Very gravelly loam

Percentage of the surface covered by rock fragments: 5 to 30 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 10 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 2 to 10 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.1 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7s-8

Land capability, nonirrigated: 7s-8

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 2 inches; very gravelly loam
 Bt1—2 to 6 inches; very cobbly loam
 Bt2—6 to 9 inches; cobbly loam
 R—9 inches; bedrock

Characteristics of Rock Outcrop (Mudflow-Breccia Cliffs)

Slope: 30 to 200 percent

Geomorphic position: Backslopes in canyons

Surface runoff (bare conditions): Very high

Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 626**Tusccoll and similar soils**

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Schott and similar soils

Composition: 3 percent

Slope: 30 to 50 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Lithic Haploxeralfs and similar soils

Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Lithic Dystroxerepts and similar soils

Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

627—Ultic Haploxeralfs-Rockstripe-Rock outcrop, cliffs, complex, 50 to 70 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 245 to 2,595 feet (76 to 792 meters)
Mean annual precipitation: 26 to 55 inches (660 to 1,397 millimeters)
Mean annual air temperature: 55 to 61 degrees F (13 to 16 degrees C)
Frost-free period: 200 to 260 days

Map Unit Composition

Ultic Haploxeralfs gravelly loam—40 percent
 Rockstripe very gravelly loam—35 percent
 Rock outcrop (mudflow-breccia cliffs)—15 percent
 Minor components—10 percent

Characteristics of Ultic Haploxeralfs Gravelly Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Parent material: Loamy colluvium derived from volcanic rocks
Observed vegetation: Foothill pine, live oak, California black oak, scrub oak, Pacific poison oak, California laurel, whiteleaf manzanita, toyon, and deerbrush
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 25 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature: 20 to 60 inches to paralithic bedrock; 20 to 60 inches to lithic bedrock
Shrink-swell potential: Moderate (LEP of 3 to less than 6)
Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 7.5 inches)

Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

A—0 to 4 inches; gravelly loam
 Bt1—4 to 10 inches; gravelly loam
 Bt2—10 to 18 inches; gravelly clay loam
 Bt3—18 to 35 inches; gravelly clay loam
 Bt4—35 to 48 inches; gravelly clay
 Crt—48 inches; bedrock

Characteristics of Rockstripe Very Gravelly Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Parent material: Loamy residuum weathered from volcanic breccia
Observed vegetation: Annual grasses and forbs, buckbrush, whiteleaf manzanita, Pacific poison oak, and foothill pine
Texture of the surface layer: Very gravelly loam
Percentage of the surface covered by rock fragments: 5 to 30 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 10 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 2 to 10 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)
Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.1 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7s-8
Land capability, nonirrigated: 7s-8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile

A—0 to 2 inches; very gravelly loam
 Bt1—2 to 6 inches; very cobbly loam
 Bt2—6 to 9 inches; cobbly loam
 R—9 inches; bedrock

Characteristics of Rock Outcrop (Mudflow-Breccia Cliffs)

Slope: 50 to 200 percent
Geomorphic position: Backslopes in canyons
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 627

Tusccoll and similar soils

Composition: 3 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Schott and similar soils

Composition: 3 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Lithic Haploxeralfs and similar soils

Composition: 2 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Lithic Dystroxerepts and similar soils

Composition: 2 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

628—Rockstripe-Ultic Haploxeralfs-Rock outcrop, cliffs, complex, 70 to 100 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Wildlife habitat and watershed

Major land resource area: 18

Landscape: Southern Cascade foothills

Elevation: 295 to 2,400 feet (91 to 732 meters)

Mean annual precipitation: 26 to 60 inches (660 to 1,524 millimeters)

Mean annual air temperature: 55 to 61 degrees F (13 to 16 degrees C)

Frost-free period: 215 to 260 days

Map Unit Composition

Rockstripe very gravelly loam—40 percent

Ultic Haploxeralfs gravelly loam—35 percent

Rock outcrop (mudflow-breccia cliffs)—20 percent

Minor components—5 percent

Characteristics of Rockstripe Very Gravelly Loam

Slope: 70 to 100 percent

Geomorphic position: Backslopes in canyons

Parent material: Loamy residuum weathered from volcanic breccia

Observed vegetation: Annual grasses and forbs, buckbrush, whiteleaf manzanita, Pacific poison oak, and foothill pine

Texture of the surface layer: Very gravelly loam

Percentage of the surface covered by rock fragments: 5 to 30 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 10 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 2 to 10 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.1 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 2 inches; very gravelly loam

Bt1—2 to 6 inches; very cobbly loam

Bt2—6 to 9 inches; cobbly loam

R—9 inches; bedrock

Characteristics of Ultic Haploxeralfs Gravelly Loam

Slope: 70 to 100 percent

Geomorphic position: Backslopes in canyons

Parent material: Loamy colluvium derived from volcanic rocks

Observed vegetation: Foothill pine, live oak, California black oak, scrub oak, Pacific poison oak, California laurel, whiteleaf manzanita, toyon, and deerbrush

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 0 to 25 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature: 20 to 60 inches to paralithic bedrock; 20 to 60 inches to lithic bedrock

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 7.5 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 4 inches; gravelly loam

Bt1—4 to 10 inches; gravelly loam

Bt2—10 to 18 inches; gravelly clay loam

Bt3—18 to 35 inches; gravelly clay loam

Bt4—35 to 48 inches; gravelly clay
 Crt—48 inches; bedrock

Characteristics of Rock Outcrop (Mudflow-Breccia Cliffs)

Slope: 70 to 200 percent
Geomorphic position: Backslopes in canyons
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 628

Tussock and similar soils

Composition: 3 percent
Slope: 70 to 100 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Lithic Haploxeralfs and similar soils

Composition: 1 percent
Slope: 70 to 100 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Lithic Dystroxerepts and similar soils

Composition: 1 percent
Slope: 70 to 100 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

629—Slideland gravelly loam, 3 to 15 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Homesite development, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 415 to 1,875 feet (128 to 573 meters)
Mean annual precipitation: 30 to 60 inches (762 to 1,524 millimeters)
Mean annual air temperature: 55 to 61 degrees F (13 to 16 degrees C)
Frost-free period: 215 to 260 days

Map Unit Composition

Slideland gravelly loam—80 percent
 Minor components—20 percent

Characteristics of Slideland Gravelly Loam

Slope: 3 to 15 percent
Geomorphic position: Benches in canyons
Parent material: Stream-worked, fine-loamy colluvium derived from volcanic and sedimentary rocks
Observed vegetation: Annual grasses and forbs, California black oak, bigleaf maple, canyon live oak, valley oak, ponderosa pine, foothill pine, blue oak, whiteleaf manzanita, toyon, California laurel, deerbrush, and California buckthorn
Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 0 to 10 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 10 percent subangular boulders

Restrictive feature: None identified

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 9.0 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 2 inches; gravelly loam

Bt1—2 to 9 inches; gravelly loam

Bt2—9 to 14 inches; gravelly clay loam

Bt3—14 to 21 inches; gravelly clay loam

Bt4—21 to 28 inches; gravelly clay loam

Bt5—28 to 38 inches; gravelly clay loam

Bt6—38 to 51 inches; gravelly clay loam

Bt7—51 to 69 inches; very cobbly clay loam

Bt8—69 to 80 inches; very cobbly clay loam

Minor Components in Map Unit 629

Chinacamp and similar soils

Composition: 3 percent

Slope: 3 to 15 percent

Geomorphic position: Benches in canyons

Hydric soil status: Not hydric

Fine textured soils

Composition: 3 percent

Slope: 3 to 15 percent

Geomorphic position: Benches in canyons

Hydric soil status: Not hydric

Soils that are less than 60 inches deep to bedrock

Composition: 3 percent

Slope: 3 to 15 percent

Geomorphic position: Benches in canyons

Hydric soil status: Not hydric

Coalcanyon taxadjunct and similar soils

Composition: 2 percent

Slope: 3 to 15 percent

Geomorphic position: Benches in canyons

Hydric soil status: Not hydric

Haploxeralfs, terrace, and similar soils*Composition:* 2 percent*Slope:* 3 to 6 percent*Geomorphic position:* Stream terraces in canyons*Hydric soil status:* Not hydric**Clayey-skeletal soils***Composition:* 2 percent*Slope:* 3 to 15 percent*Geomorphic position:* Benches in canyons*Hydric soil status:* Not hydric**Ultic Haploxeralfs gravelly loam and similar soils***Composition:* 2 percent*Slope:* 3 to 15 percent*Geomorphic position:* Benches in canyons*Hydric soil status:* Not hydric**Typic Haploxeralfs and similar soils***Composition:* 2 percent*Slope:* 3 to 15 percent*Geomorphic position:* Benches in canyons*Hydric soil status:* Not hydric**Seeps***Composition:* 1 percent*Slope:* 3 to 15 percent*Geomorphic position:* Benches in canyons*Hydric soil status:* Hydric**630—Slideland gravelly loam, 15 to 30 percent slopes*****Map Unit Setting****General location:* North-central Butte County*Major uses:* Homesite development, wildlife habitat, and watershed*Major land resource area:* 18*Landscape:* Southern Cascade foothills*Elevation:* 600 to 1,860 feet (183 to 567 meters)*Mean annual precipitation:* 41 to 60 inches (1,041 to 1,524 millimeters)*Mean annual air temperature:* 55 to 57 degrees F (13 to 14 degrees C)*Frost-free period:* 215 to 240 days***Map Unit Composition***

Slideland gravelly loam—80 percent

Minor components—20 percent

Characteristics of Slideland Gravelly Loam*Slope:* 15 to 30 percent*Geomorphic position:* Benches in canyons*Parent material:* Stream-worked, fine-loamy colluvium derived from volcanic and sedimentary rocks*Observed vegetation:* Annual grasses and forbs, California black oak, bigleaf maple, canyon live oak, valley oak, ponderosa pine, foothill pine, blue oak, whiteleaf manzanita, toyon, California laurel, deerbrush, and California buckthorn*Texture of the surface layer:* Gravelly loam

Percentage of the surface covered by rock fragments: 0 to 10 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 10 percent subangular boulders

Restrictive feature: None identified

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 9.0 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 2 inches; gravelly loam

Bt1—2 to 9 inches; gravelly loam

Bt2—9 to 14 inches; gravelly clay loam

Bt3—14 to 21 inches; gravelly clay loam

Bt4—21 to 28 inches; gravelly clay loam

Bt5—28 to 38 inches; gravelly clay loam

Bt6—38 to 51 inches; gravelly clay loam

Bt7—51 to 69 inches; very cobbly clay loam

Bt8—69 to 80 inches; very cobbly clay loam

Minor Components in Map Unit 630

Chinacamp and similar soils

Composition: 6 percent

Slope: 15 to 30 percent

Geomorphic position: Benches in canyons

Hydric soil status: Not hydric

Fine textured soils

Composition: 3 percent

Slope: 15 to 30 percent

Geomorphic position: Benches in canyons

Hydric soil status: Not hydric

Soils that are less than 60 inches deep to bedrock

Composition: 3 percent

Slope: 15 to 30 percent

Geomorphic position: Benches in canyons

Hydric soil status: Not hydric

Coalcanyon taxadjunct and similar soils

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: Benches in canyons

Hydric soil status: Not hydric

Clayey-skeletal soils

Composition: 2 percent

Slope: 15 to 30 percent
Geomorphic position: Benches in canyons
Hydric soil status: Not hydric

Ultic Haploxeralfs gravelly loam and similar soils

Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Benches in canyons
Hydric soil status: Not hydric

Typic Haploxeralfs and similar soils

Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Benches in canyons
Hydric soil status: Not hydric

631—Slideland gravelly loam, 30 to 50 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 560 to 2,000 feet (171 to 610 meters)
Mean annual precipitation: 37 to 60 inches (940 to 1,524 millimeters)
Mean annual air temperature: 55 to 59 degrees F (13 to 15 degrees C)
Frost-free period: 215 to 255 days

Map Unit Composition

Slideland gravelly loam—80 percent
 Minor components—20 percent

Characteristics of Slideland Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on benches in canyons
Parent material: Stream-worked, fine-loamy colluvium derived from volcanic and sedimentary rocks
Observed vegetation: Annual grasses and forbs, California black oak, bigleaf maple, canyon live oak, valley oak, ponderosa pine, foothill pine, blue oak, whiteleaf manzanita, toyon, California laurel, deerbrush, and California buckthorn
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 10 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 10 percent subangular boulders
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)
Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 9.0 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

*Interpretive groups**Land capability, irrigated: 6e-1**Land capability, nonirrigated: 6e-1**Hydric soil status: Not hydric**Hydrologic soil group: B**Typical profile*

A—0 to 2 inches; gravelly loam

Bt1—2 to 9 inches; gravelly loam

Bt2—9 to 14 inches; gravelly clay loam

Bt3—14 to 21 inches; gravelly clay loam

Bt4—21 to 28 inches; gravelly clay loam

Bt5—28 to 38 inches; gravelly clay loam

Bt6—38 to 51 inches; gravelly clay loam

Bt7—51 to 69 inches; very cobbly clay loam

Bt8—69 to 80 inches; very cobbly clay loam

Minor Components in Map Unit 631**Chinacamp and similar soils***Composition: 8 percent**Slope: 30 to 50 percent**Geomorphic position: Side slopes on benches in canyons**Hydric soil status: Not hydric***Soils that are less than 60 inches deep to bedrock***Composition: 3 percent**Slope: 30 to 50 percent**Geomorphic position: Side slopes on benches in canyons**Hydric soil status: Not hydric***Fine textured soils***Composition: 2 percent**Slope: 30 to 50 percent**Geomorphic position: Side slopes on benches in canyons**Hydric soil status: Not hydric***Coalcanyon taxadjunct and similar soils***Composition: 2 percent**Slope: 30 to 50 percent**Geomorphic position: Side slopes on benches in canyons**Hydric soil status: Not hydric***Ultic Haploxeralfs gravelly loam and similar soils***Composition: 2 percent**Slope: 30 to 50 percent**Geomorphic position: Side slopes on benches in canyons**Hydric soil status: Not hydric***Typic Haploxeralfs and similar soils***Composition: 2 percent**Slope: 30 to 50 percent**Geomorphic position: Side slopes on benches in canyons**Hydric soil status: Not hydric***Clayey-skeletal soils***Composition: 1 percent**Slope: 30 to 50 percent*

Geomorphic position: Side slopes on benches in canyons

Hydric soil status: Not hydric

632—Ultic Haploxeralfs, conglomerate, complex, 3 to 15 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Homesite development, wildlife habitat, and watershed

Major land resource area: 18

Landscape: Areas of marine conglomerate exposed in Southern Cascade foothills

Elevation: 695 to 1,800 feet (213 to 549 meters)

Mean annual precipitation: 37 to 65 inches (940 to 1,651 millimeters)

Mean annual air temperature: 55 to 61 degrees F (13 to 16 degrees C)

Frost-free period: 190 to 260 days

Map Unit Composition

Ultic Haploxeralfs, conglomerate, very deep—50 percent

Ultic Haploxeralfs, conglomerate, moderately deep—40 percent

Minor components—10 percent

Characteristics of Ultic Haploxeralfs, Conglomerate, Very Deep

Slope: 3 to 15 percent

Geomorphic position: Benches in canyons

Parent material: Gravelly residuum weathered from marine conglomerate

Observed vegetation: California black oak, foothill pine, canyon live oak, blue oak, Pacific poison oak, toyon, scrub oak, manzanita, annual grasses and forbs, and scattered ponderosa pine and Douglas-fir

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 25 percent medium, rounded gravel, 0 to 10 percent rounded cobbles, 0 to 10 percent subangular stones, 0 to 10 percent subangular boulders

Restrictive feature: None identified

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 6 inches; gravelly clay loam

Bt1—6 to 10 inches; gravelly clay loam
 Bt2—10 to 17 inches; clay loam
 Bt3—17 to 28 inches; cobbly clay loam
 Bt4—28 to 40 inches; very cobbly clay loam
 2Bt5—40 to 50 inches; very gravelly clay
 2Bt6—50 to 71 inches; very gravelly sandy clay loam
 2Bt7—71 to 84 inches; very gravelly sandy clay loam

Characteristics of Ultic Haploxeralfs, Conglomerate, Moderately Deep

Slope: 3 to 15 percent

Geomorphic position: Benches in canyons

Parent material: Gravelly residuum weathered from marine conglomerate

Observed vegetation: Canyon live oak, blue oak, manzanita, toyon, foothill pine, and annual grasses and forbs

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 30 percent medium, rounded gravel, 0 to 15 percent rounded cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.4 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7s-8

Land capability, nonirrigated: 7s-8

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 5 inches; very gravelly loam

Bt1—5 to 10 inches; very gravelly clay loam

Bt2—10 to 25 inches; extremely gravelly sandy clay loam

Cr—25 inches; bedrock

Minor Components in Map Unit 632

Soils that are 40 to 60 inches deep to bedrock

Composition: 8 percent

Slope: 3 to 15 percent

Geomorphic position: Benches in canyons

Hydric soil status: Not hydric

Ultic Haploxeralfs, sandstone, and similar soils

Composition: 2 percent

Slope: 3 to 15 percent

Geomorphic position: Benches in canyons

Hydric soil status: Not hydric

633—Ultic Haploxeralfs, conglomerate, complex, 15 to 30 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Wildlife habitat and watershed

Major land resource area: 18

Landscape: Areas of marine conglomerate exposed in Southern Cascade foothills

Elevation: 695 to 1,800 feet (213 to 549 meters)

Mean annual precipitation: 37 to 65 inches (940 to 1,651 millimeters)

Mean annual air temperature: 55 to 61 degrees F (13 to 16 degrees C)

Frost-free period: 190 to 260 days

Map Unit Composition

Ultic Haploxeralfs, conglomerate, very deep—60 percent

Ultic Haploxeralfs, conglomerate, moderately deep—30 percent

Minor components—10 percent

Characteristics of Ultic Haploxeralfs, Conglomerate, Very Deep

Slope: 15 to 30 percent

Geomorphic position: Benches in canyons

Parent material: Gravelly colluvium derived from marine conglomerate

Observed vegetation: California black oak, foothill pine, canyon live oak, blue oak, Pacific poison oak, toyon, scrub oak, manzanita, annual grasses and forbs, and scattered ponderosa pine and Douglas-fir

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 25 percent medium, rounded gravel, 0 to 10 percent rounded cobbles, 0 to 10 percent subangular stones, 0 to 10 percent subangular boulders

Restrictive feature: None identified

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 6 inches; gravelly clay loam

Bt1—6 to 10 inches; gravelly clay loam

Bt2—10 to 17 inches; clay loam

Bt3—17 to 28 inches; cobbly clay loam
 Bt4—28 to 40 inches; very cobbly clay loam
 2Bt5—40 to 50 inches; very gravelly clay
 2Bt6—50 to 71 inches; very gravelly sandy clay loam
 2Bt7—71 to 84 inches; very gravelly sandy clay loam

Characteristics of Ultic Haploxeralfs, Conglomerate, Moderately Deep

Slope: 15 to 30 percent

Geomorphic position: Benches in canyons

Parent material: Gravelly residuum weathered from marine conglomerate

Observed vegetation: Canyon live oak, blue oak, manzanita, toyon, foothill pine, and annual grasses and forbs

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 30 percent medium, rounded gravel, 0 to 15 percent rounded cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.4 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7s-8

Land capability, nonirrigated: 7s-8

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 5 inches; very gravelly loam

Bt1—5 to 10 inches; very gravelly clay loam

Bt2—10 to 25 inches; extremely gravelly sandy clay loam

Cr—25 inches; bedrock

Minor Components in Map Unit 633

Soils that are 40 to 60 inches deep to bedrock

Composition: 8 percent

Slope: 15 to 30 percent

Geomorphic position: Benches in canyons

Hydric soil status: Not hydric

Ultic Haploxeralfs, sandstone, and similar soils

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: Benches in canyons

Hydric soil status: Not hydric

634—Ultic Haploxeralfs, conglomerate, complex, 30 to 50 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Wildlife habitat and watershed

Major land resource area: 18

Landscape: Areas of marine conglomerate exposed in Southern Cascade foothills

Elevation: 695 to 1,695 feet (213 to 518 meters)

Mean annual precipitation: 37 to 65 inches (940 to 1,651 millimeters)

Mean annual air temperature: 55 to 61 degrees F (13 to 16 degrees C)

Frost-free period: 190 to 260 days

Map Unit Composition

Ultic Haploxeralfs, conglomerate, very deep—60 percent

Ultic Haploxeralfs, conglomerate, moderately deep—30 percent

Minor components—10 percent

Characteristics of Ultic Haploxeralfs, Conglomerate, Very Deep

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons

Parent material: Gravelly colluvium derived from marine conglomerate

Observed vegetation: California black oak, foothill pine, canyon live oak, blue oak, Pacific poison oak, toyon, scrub oak, manzanita, annual grasses and forbs, and scattered ponderosa pine and Douglas-fir

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 25 percent medium, rounded gravel, 0 to 10 percent rounded cobbles, 0 to 10 percent subangular stones, 0 to 10 percent subangular boulders

Restrictive feature: None identified

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 6 inches; gravelly clay loam

Bt1—6 to 10 inches; gravelly clay loam

Bt2—10 to 17 inches; clay loam

Bt3—17 to 28 inches; cobbly clay loam

Bt4—28 to 40 inches; very cobbly clay loam

2Bt5—40 to 50 inches; very gravelly clay

2Bt6—50 to 71 inches; very gravelly sandy clay loam

2Bt7—71 to 84 inches; very gravelly sandy clay loam

Characteristics of Ultic Haploxeralfs, Conglomerate, Moderately Deep

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons

Parent material: Gravelly colluvium and/or residuum weathered from marine conglomerate

Observed vegetation: Canyon live oak, blue oak, manzanita, toyon, foothill pine, and annual grasses and forbs

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 30 percent medium, rounded gravel, 0 to 15 percent rounded cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.4 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7s-8

Land capability, nonirrigated: 7s-8

Storie index: 0 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 5 inches; very gravelly loam

Bt1—5 to 10 inches; very gravelly clay loam

Bt2—10 to 25 inches; extremely gravelly sandy clay loam

Cr—25 inches; bedrock

Minor Components in Map Unit 634

Soils that are 40 to 60 inches deep to bedrock

Composition: 4 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons

Hydric soil status: Not hydric

Ultic Haploxeralfs, sandstone, and similar soils

Composition: 4 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons

Hydric soil status: Not hydric

Tusccoll and similar soils

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons

Hydric soil status: Not hydric

635—Ultic Haploxeralfs, conglomerate, complex, 50 to 70 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Wildlife habitat and watershed

Major land resource area: 18

Landscape: Areas of marine conglomerate exposed in Southern Cascade foothills

Elevation: 1,000 to 1,695 feet (305 to 518 meters)

Mean annual precipitation: 55 to 65 inches (1,397 to 1,651 millimeters)

Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)

Frost-free period: 190 to 230 days

Map Unit Composition

Ultic Haploxeralfs, conglomerate, very deep—50 percent

Ultic Haploxeralfs, conglomerate, moderately deep—40 percent

Minor components—10 percent

Characteristics of Ultic Haploxeralfs, Conglomerate, Very Deep

Slope: 50 to 70 percent

Geomorphic position: Drainageways in canyons

Parent material: Gravelly colluvium derived from marine conglomerate

Observed vegetation: California black oak, foothill pine, canyon live oak, blue oak, Pacific poison oak, toyon, scrub oak, manzanita, annual grasses and forbs, and scattered ponderosa pine and Douglas-fir

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 25 percent medium, rounded gravel, 0 to 10 percent rounded cobbles, 0 to 10 percent subangular stones, 0 to 10 percent subangular boulders

Restrictive feature: None identified

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 6 inches; gravelly clay loam

Bt1—6 to 10 inches; gravelly clay loam

Bt2—10 to 17 inches; clay loam

Bt3—17 to 28 inches; cobbly clay loam

Bt4—28 to 40 inches; very cobbly clay loam

2Bt5—40 to 50 inches; very gravelly clay

2Bt6—50 to 71 inches; very gravelly sandy clay loam

2Bt7—71 to 84 inches; very gravelly sandy clay loam

Characteristics of Ultic Haploxeralfs, Conglomerate, Moderately Deep

Slope: 50 to 70 percent

Geomorphic position: Drainageways in canyons

Parent material: Gravelly colluvium and/or residuum weathered from marine conglomerate

Observed vegetation: Canyon live oak, blue oak, manzanita, toyon, foothill pine, and annual grasses and forbs

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 30 percent medium, rounded gravel, 0 to 15 percent rounded cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.4 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7s-8

Land capability, nonirrigated: 7s-8

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 5 inches; very gravelly loam

Bt1—5 to 10 inches; very gravelly clay loam

Bt2—10 to 25 inches; extremely gravelly sandy clay loam

Cr—25 inches; bedrock

Minor Components in Map Unit 635

Tuscoll and similar soils

Composition: 6 percent

Slope: 50 to 70 percent

Geomorphic position: Drainageways in canyons

Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to bedrock

Composition: 2 percent

Slope: 50 to 70 percent

Geomorphic position: Drainageways in canyons

Hydric soil status: Not hydric

Ultic Haploxeralfs, sandstone, and similar soils

Composition: 2 percent

Slope: 50 to 70 percent

Geomorphic position: Drainageways in canyons

Hydric soil status: Not hydric

636—Ultic Haploxeralfs, conglomerate, complex, 70 to 100 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Wildlife habitat and watershed

Major land resource area: 18

Landscape: Areas of marine conglomerate exposed in Southern Cascade foothills

Elevation: 1,000 to 1,600 feet (305 to 488 meters)

Mean annual precipitation: 58 to 60 inches (1,473 to 1,524 millimeters)

Mean annual air temperature: 55 degrees F (13 degrees C)

Frost-free period: 215 days

Map Unit Composition

Ultic Haploxeralfs, conglomerate, moderately deep—50 percent

Ultic Haploxeralfs, conglomerate, very deep—40 percent

Minor components—10 percent

Characteristics of Ultic Haploxeralfs, Conglomerate, Moderately Deep

Slope: 70 to 100 percent

Geomorphic position: Ravines in canyons

Parent material: Gravelly colluvium and/or residuum weathered from marine conglomerate

Observed vegetation: Canyon live oak, blue oak, manzanita, toyon, foothill pine, and annual grasses and forbs

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 30 percent medium, rounded gravel, 0 to 15 percent rounded cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.4 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 5 inches; very gravelly loam

Bt1—5 to 10 inches; very gravelly clay loam

Bt2—10 to 25 inches; extremely gravelly sandy clay loam

Cr—25 inches; bedrock

Characteristics of Ultic Haploxeralfs, Conglomerate, Very Deep

Slope: 70 to 100 percent

Geomorphic position: Ravines in canyons

Parent material: Gravelly colluvium derived from marine conglomerate

Observed vegetation: California black oak, foothill pine, canyon live oak, blue oak, Pacific poison oak, toyon, scrub oak, manzanita, annual grasses and forbs, and scattered ponderosa pine and Douglas-fir

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 25 percent medium, rounded gravel, 0 to 10 percent rounded cobbles, 0 to 10 percent subangular stones, 0 to 10 percent subangular boulders

Restrictive feature: None identified

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 6 inches; gravelly clay loam

Bt1—6 to 10 inches; gravelly clay loam

Bt2—10 to 17 inches; clay loam

Bt3—17 to 28 inches; cobbly clay loam

Bt4—28 to 40 inches; very cobbly clay loam

2Bt5—40 to 50 inches; very gravelly clay

2Bt6—50 to 71 inches; very gravelly sandy clay loam

2Bt7—71 to 84 inches; very gravelly sandy clay loam

Minor Components in Map Unit 636

Tussock and similar soils

Composition: 6 percent

Slope: 70 to 100 percent

Geomorphic position: Ravines in canyons

Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to bedrock

Composition: 2 percent

Slope: 70 to 100 percent

Geomorphic position: Ravines in canyons

Hydric soil status: Not hydric

Ultic Haploxeralfs, sandstone, and similar soils

Composition: 2 percent

Slope: 70 to 100 percent

Geomorphic position: Ravines in canyons

Hydric soil status: Not hydric

637—Ultic Haploxeralfs, sandstone, 3 to 15 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Wildlife habitat and watershed

Major land resource area: 18

Landscape: Areas of marine sandstone exposed in Southern Cascade foothills

Elevation: 1,000 to 1,475 feet (305 to 451 meters)

Mean annual precipitation: 58 inches (1,473 millimeters)

Mean annual air temperature: 55 degrees F (13 degrees C)

Frost-free period: 220 days

Map Unit Composition

Ultic Haploxeralfs, sandstone—80 percent

Minor components—20 percent

Characteristics of Ultic Haploxeralfs, Sandstone

Slope: 3 to 15 percent

Geomorphic position: Benches in canyons

Parent material: Sandy colluvium and/or residuum weathered from marine sandstone

Observed vegetation: Canyon live oak, blue oak, California black oak, foothill pine, manzanita, deerbrush, California laurel, Pacific poison oak, toyon, and annual grasses and forbs

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 15 percent fine, subangular gravel, 0 to 5 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 40 to 80 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.8 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material

A—0.5 inch to 2 inches; very fine sandy loam

Bt1—2 to 6 inches; very fine sandy loam

Bt2—6 to 11 inches; very fine sandy loam

Bt3—11 to 17 inches; very fine sandy loam

Bt4—17 to 24 inches; very fine sandy loam
 2Bt5—24 to 32 inches; very gravelly very fine sandy loam
 2Cr/Bt—32 to 53 inches; very gravelly sandy clay loam
 2Cr1—53 to 65 inches; bedrock
 2Cr2—65 inches; bedrock

Minor Components in Map Unit 637

Soils that are less than 40 inches deep to bedrock

Composition: 10 percent
Slope: 3 to 15 percent
Geomorphic position: Benches in canyons
Hydric soil status: Not hydric

Chinacamp and similar soils

Composition: 10 percent
Slope: 3 to 15 percent
Geomorphic position: Benches in canyons
Hydric soil status: Not hydric

638—Ultic Haploxeralfs, sandstone, 15 to 30 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 18
Landscape: Areas of marine sandstone exposed in Southern Cascade foothills
Elevation: 1,200 to 2,000 feet (366 to 610 meters)
Mean annual precipitation: 58 inches (1,473 millimeters)
Mean annual air temperature: 55 degrees F (13 degrees C)
Frost-free period: 220 days

Map Unit Composition

Ultic Haploxeralfs, sandstone—80 percent
 Minor components—20 percent

Characteristics of Ultic Haploxeralfs, Sandstone

Slope: 15 to 30 percent
Geomorphic position: Benches in canyons
Parent material: Sandy colluvium and/or residuum weathered from marine sandstone
Observed vegetation: Canyon live oak, blue oak, California black oak, foothill pine, manzanita, deerbrush, California laurel, Pacific poison oak, toyon, and annual grasses and forbs
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent fine, subangular gravel, 0 to 5 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 40 to 80 inches
Shrink-swell potential: Low (LEP of less than 3)
Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed

Available water capacity: Low (about 4.8 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material

A—0.5 inch to 2 inches; very fine sandy loam

Bt1—2 to 6 inches; very fine sandy loam

Bt2—6 to 11 inches; very fine sandy loam

Bt3—11 to 17 inches; very fine sandy loam

Bt4—17 to 24 inches; very fine sandy loam

2Bt5—24 to 32 inches; very gravelly very fine sandy loam

2Cr/Bt—32 to 53 inches; very gravelly sandy clay loam

2Cr1—53 to 65 inches; bedrock

2Cr2—65 inches; bedrock

Minor Components in Map Unit 638

Soils that are less than 40 inches deep to bedrock

Composition: 10 percent

Slope: 15 to 30 percent

Geomorphic position: Benches in canyons

Hydric soil status: Not hydric

Chinacamp and similar soils

Composition: 10 percent

Slope: 15 to 30 percent

Geomorphic position: Benches in canyons

Hydric soil status: Not hydric

639—Ultic Haploxeralfs, sandstone, 30 to 50 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Wildlife habitat and watershed

Major land resource area: 18

Landscape: Areas of marine sandstone exposed in Southern Cascade foothills

Elevation: 950 to 1,715 feet (290 to 524 meters)

Mean annual precipitation: 47 to 50 inches (1,194 to 1,270 millimeters)

Mean annual air temperature: 57 degrees F (14 degrees C)

Frost-free period: 235 to 240 days

Map Unit Composition

Ultic Haploxeralfs, sandstone—75 percent

Minor components—25 percent

Characteristics of Ultic Haploxeralfs, Sandstone

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons

Parent material: Sandy colluvium and/or residuum weathered from marine sandstone

Observed vegetation: Canyon live oak, blue oak, California black oak, foothill pine, manzanita, deerbrush, California laurel, Pacific poison oak, toyon, and annual grasses and forbs

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 15 percent fine, subangular gravel, 0 to 5 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 40 to 80 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.8 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material

A—0.5 inch to 2 inches; very fine sandy loam

Bt1—2 to 6 inches; very fine sandy loam

Bt2—6 to 11 inches; very fine sandy loam

Bt3—11 to 17 inches; very fine sandy loam

Bt4—17 to 24 inches; very fine sandy loam

2Bt5—24 to 32 inches; very gravelly very fine sandy loam

2Cr/Bt—32 to 53 inches; very gravelly sandy clay loam

2Cr1—53 to 65 inches; bedrock

2Cr2—65 inches; bedrock

Minor Components in Map Unit 639

Chinacamp and similar soils

Composition: 13 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons

Hydric soil status: Not hydric

Soils that are less than 40 inches deep to bedrock

Composition: 10 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons

Hydric soil status: Not hydric

Rock outcrop*Composition:* 2 percent*Slope:* 30 to 50 percent*Geomorphic position:* Side slopes in canyons*Hydric soil status:* Not hydric**640—Ultic Haploxeralfs, sandstone, 50 to 70 percent slopes*****Map Unit Setting****General location:* North-central Butte County*Major uses:* Wildlife habitat and watershed*Major land resource area:* 18*Landscape:* Areas of marine sandstone exposed in Southern Cascade foothills*Elevation:* 715 to 1,800 feet (219 to 549 meters)*Mean annual precipitation:* 35 to 58 inches (889 to 1,473 millimeters)*Mean annual air temperature:* 55 to 59 degrees F (13 to 15 degrees C)*Frost-free period:* 220 to 250 days***Map Unit Composition***

Ultic Haploxeralfs, sandstone—75 percent

Minor components—25 percent

Characteristics of Ultic Haploxeralfs, Sandstone*Slope:* 50 to 70 percent*Geomorphic position:* Backslopes in canyons*Parent material:* Sandy colluvium and/or residuum weathered from marine sandstone*Observed vegetation:* Canyon live oak, Douglas-fir, ponderosa pine, California black oak, foothill pine, manzanita, deerbrush, California laurel, Pacific poison oak, toyon, and annual grasses and forbs*Texture of the surface layer:* Slightly decomposed plant material*Percentage of the surface covered by rock fragments:* 0 to 15 percent fine, subangular gravel, 0 to 5 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 5 percent subangular boulders*Depth to a restrictive feature (paralithic bedrock):* 40 to 80 inches*Shrink-swell potential:* Low (LEP of less than 3)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* None*Annual ponding frequency:* None*Water table (zone of saturation):* None observed*Available water capacity:* Low (about 4.8 inches)*Natural drainage class:* Well drained*Surface runoff (bare conditions):* High***Interpretive groups****Land capability, irrigated:* 7e-1*Land capability, nonirrigated:* 7e-1*Hydric soil status:* Not hydric*Hydrologic soil group:* B***Typical profile***

Oi—0 to 0.5 inch; slightly decomposed plant material

A—0.5 inch to 2 inches; very fine sandy loam

Bt1—2 to 6 inches; very fine sandy loam
 Bt2—6 to 11 inches; very fine sandy loam
 Bt3—11 to 17 inches; very fine sandy loam
 Bt4—17 to 24 inches; very fine sandy loam
 2Bt5—24 to 32 inches; very gravelly very fine sandy loam
 2Cr/Bt—32 to 53 inches; very gravelly sandy clay loam
 2Cr1—53 to 65 inches; bedrock
 2Cr2—65 inches; bedrock

Minor Components in Map Unit 640

Rock outcrop

Composition: 10 percent

Slope: 50 to 175 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Coalcanyon taxadjunct and similar soils

Composition: 5 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Soils that are less than 40 inches deep to bedrock

Composition: 5 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Chinacamp and similar soils

Composition: 5 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

641—Ultic Haploxeralfs, sandstone, 70 to 100 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Wildlife habitat and watershed

Major land resource area: 18

Landscape: Areas of marine sandstone exposed in Southern Cascade foothills

Elevation: 600 to 1,800 feet (183 to 549 meters)

Mean annual precipitation: 50 to 58 inches (1,270 to 1,473 millimeters)

Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)

Frost-free period: 220 to 235 days

Map Unit Composition

Ultic Haploxeralfs, sandstone—75 percent

Minor components—25 percent

Characteristics of Ultic Haploxeralfs, Sandstone

Slope: 70 to 100 percent

Geomorphic position: Backslopes in canyons

Parent material: Sandy colluvium and/or residuum weathered from marine sandstone

Observed vegetation: Canyon live oak, Douglas-fir, ponderosa pine, California black oak, foothill pine, manzanita, deerbrush, California laurel, Pacific poison oak, toyon, and annual grasses and forbs

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 15 percent fine, subangular gravel, 0 to 5 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 40 to 80 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.8 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material

A—0.5 inch to 2 inches; very fine sandy loam

Bt1—2 to 6 inches; very fine sandy loam

Bt2—6 to 11 inches; very fine sandy loam

Bt3—11 to 17 inches; very fine sandy loam

Bt4—17 to 24 inches; very fine sandy loam

2Bt5—24 to 32 inches; very gravelly very fine sandy loam

2Cr/Bt—32 to 53 inches; very gravelly sandy clay loam

2Cr1—53 to 65 inches; bedrock

2Cr2—65 inches; bedrock

Minor Components in Map Unit 641

Rock outcrop

Composition: 10 percent

Slope: 70 to 175 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Coalcanyon taxadjunct and similar soils

Composition: 5 percent

Slope: 70 to 100 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Soils that are less than 40 inches deep to bedrock

Composition: 5 percent

Slope: 70 to 100 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Chinacamp and similar soils*Composition:* 5 percent*Slope:* 70 to 100 percent*Geomorphic position:* Backslopes in canyons*Hydric soil status:* Not hydric**642—Chinacamp gravelly loam, 3 to 15 percent slopes*****Map Unit Setting****General location:* North-central Butte County*Major uses:* Homesite development, wildlife habitat, and watershed*Major land resource area:* 18*Landscape:* Southern Cascade foothills*Elevation:* 340 to 1,100 feet (104 to 336 meters)*Mean annual precipitation:* 29 to 50 inches (737 to 1,270 millimeters)*Mean annual air temperature:* 57 to 61 degrees F (14 to 16 degrees C)*Frost-free period:* 230 to 255 days***Map Unit Composition***

Chinacamp gravelly loam—70 percent

Minor components—30 percent

Characteristics of Chinacamp Gravelly Loam*Slope:* 3 to 15 percent*Geomorphic position:* Toeslopes in canyons*Parent material:* Stony, fine-loamy colluvium derived from volcanic breccia*Observed vegetation:* Canyon live oak, California black oak, blue oak, manzanita, bigleaf maple, California laurel, deerbrush, Pacific poison oak, foothill pine, valley oak, ponderosa pine, and annual grasses and forbs*Texture of the surface layer:* Slightly decomposed plant material*Percentage of the surface covered by rock fragments:* 0 to 10 percent medium gravel, 0 to 20 percent cobbles, 0 to 30 percent stones, 0 to 15 percent boulders*Restrictive feature:* None identified*Shrink-swell potential:* Moderate (LEP of 3 to less than 6)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* None*Annual ponding frequency:* None*Water table (zone of saturation):* None observed*Available water capacity:* Moderate (about 6.3 inches)*Natural drainage class:* Well drained*Surface runoff (bare conditions):* Low***Interpretive groups****Land capability, irrigated:* 3e-1*Land capability, nonirrigated:* 3e-1*Hydric soil status:* Not hydric*Hydrologic soil group:* B***Typical profile***

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 5 inches; gravelly loam

Bt1—5 to 15 inches; gravelly clay loam

Bt2—15 to 29 inches; gravelly clay loam

Bt3—29 to 38 inches; gravelly clay loam
 Bt4—38 to 44 inches; gravelly clay loam
 Bt5—44 to 61 inches; extremely stony clay loam
 Bt6—61 to 72 inches; very stony clay loam

Minor Components in Map Unit 642

Clayey-skeletal soils

Composition: 6 percent
Slope: 3 to 15 percent
Geomorphic position: Toeslopes in canyons
Hydric soil status: Not hydric

Durixeralfs and similar soils

Composition: 5 percent
Slope: 3 to 15 percent
Geomorphic position: Terrace remnants on toeslopes in canyons
Hydric soil status: Not hydric

Ultic Haploxeralfs gravelly loam and similar soils

Composition: 5 percent
Slope: 3 to 15 percent
Geomorphic position: Toeslopes in canyons
Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to bedrock

Composition: 5 percent
Slope: 3 to 15 percent
Geomorphic position: Toeslopes in canyons
Hydric soil status: Not hydric

Slideland and similar soils

Composition: 3 percent
Slope: 3 to 15 percent
Geomorphic position: Toeslopes in canyons
Hydric soil status: Not hydric

Soils that have more than 10 percent boulders in the subsoil

Composition: 3 percent
Slope: 3 to 15 percent
Geomorphic position: Areas along drainageways on toeslopes in canyons
Hydric soil status: Not hydric

Soils that have more than 30 percent stones in the subsoil

Composition: 3 percent
Slope: 3 to 15 percent
Geomorphic position: Areas along drainageways on toeslopes in canyons
Hydric soil status: Not hydric

643—Chinacamp gravelly loam, 15 to 30 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Homesite development, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 295 to 1,800 feet (91 to 549 meters)

Mean annual precipitation: 30 to 57 inches (762 to 1,448 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 215 to 255 days

Map Unit Composition

Chinacamp gravelly loam—70 percent
 Minor components—30 percent

Characteristics of Chinacamp Gravelly Loam

Slope: 15 to 30 percent

Geomorphic position: Footslopes in canyons

Parent material: Stony, fine-loamy colluvium derived from volcanic breccia

Observed vegetation: Canyon live oak, California black oak, blue oak, manzanita, bigleaf maple, California laurel, deerbrush, Pacific poison oak, foothill pine, valley oak, ponderosa pine, and annual grasses and forbs

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent medium gravel, 0 to 20 percent cobbles, 0 to 30 percent stones, 0 to 15 percent boulders

Restrictive feature: None identified

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.3 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 5 inches; gravelly loam

Bt1—5 to 15 inches; gravelly clay loam

Bt2—15 to 29 inches; gravelly clay loam

Bt3—29 to 38 inches; gravelly clay loam

Bt4—38 to 44 inches; gravelly clay loam

Bt5—44 to 61 inches; extremely stony clay loam

Bt6—61 to 72 inches; very stony clay loam

Minor Components in Map Unit 643

Clayey-skeletal soils

Composition: 6 percent

Slope: 15 to 30 percent

Geomorphic position: Footslopes in canyons

Hydric soil status: Not hydric

Ultic Haploxeralfs gravelly loam and similar soils

Composition: 6 percent

Slope: 15 to 30 percent

Geomorphic position: Footslopes in canyons

Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to bedrock

Composition: 6 percent

Slope: 15 to 30 percent

Geomorphic position: Footslopes in canyons

Hydric soil status: Not hydric

Durixeralfs and similar soils

Composition: 3 percent

Slope: 15 to 30 percent

Geomorphic position: Terrace remnants on footslopes in canyons

Hydric soil status: Not hydric

Slideland and similar soils

Composition: 3 percent

Slope: 15 to 30 percent

Geomorphic position: Footslopes in canyons

Hydric soil status: Not hydric

Soils that have more than 10 percent boulders in the subsoil

Composition: 3 percent

Slope: 15 to 30 percent

Geomorphic position: Areas along drainageways on footslopes in canyons

Hydric soil status: Not hydric

Soils that have more than 30 percent stones in the subsoil

Composition: 3 percent

Slope: 15 to 30 percent

Geomorphic position: Areas along drainageways on footslopes in canyons

Hydric soil status: Not hydric

644—Chinacamp gravelly loam, 30 to 50 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Wildlife habitat and watershed

Major land resource area: 18

Landscape: Southern Cascade foothills

Elevation: 415 to 2,000 feet (128 to 610 meters)

Mean annual precipitation: 30 to 57 inches (762 to 1,448 millimeters)

Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)

Frost-free period: 215 to 260 days

Map Unit Composition

Chinacamp gravelly loam—70 percent

Minor components—30 percent

Characteristics of Chinacamp Gravelly Loam

Slope: 30 to 50 percent

Geomorphic position: Backslopes in canyons

Parent material: Stony, fine-loamy colluvium derived from volcanic breccia

Observed vegetation: Canyon live oak, California black oak, blue oak, manzanita, bigleaf maple, California laurel, deerbrush, Pacific poison oak, foothill pine, valley oak, ponderosa pine, and annual grasses and forbs

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent medium gravel,
0 to 20 percent cobbles, 0 to 30 percent stones, 0 to 15 percent boulders

Restrictive feature: None identified

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.3 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 5 inches; gravelly loam

Bt1—5 to 15 inches; gravelly clay loam

Bt2—15 to 29 inches; gravelly clay loam

Bt3—29 to 38 inches; gravelly clay loam

Bt4—38 to 44 inches; gravelly clay loam

Bt5—44 to 61 inches; extremely stony clay loam

Bt6—61 to 72 inches; very stony clay loam

Minor Components in Map Unit 644

Clayey-skeletal soils

Composition: 6 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to bedrock

Composition: 6 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Soils that are 20 to 40 inches deep to bedrock

Composition: 6 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Ultic Haploxeralfs gravelly loam and similar soils

Composition: 6 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Rock outcrop

Composition: 6 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

645—Chinacamp gravelly loam, 50 to 70 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Wildlife habitat and watershed

Major land resource area: 18

Landscape: Southern Cascade foothills

Elevation: 400 to 1,600 feet (122 to 488 meters)

Mean annual precipitation: 30 to 50 inches (762 to 1,270 millimeters)

Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)

Frost-free period: 230 to 260 days

Map Unit Composition

Chinacamp gravelly loam—70 percent

Minor components—30 percent

Characteristics of Chinacamp Gravelly Loam

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Parent material: Stony, fine-loamy colluvium derived from volcanic breccia

Observed vegetation: Canyon live oak, California black oak, blue oak, manzanita, bigleaf maple, California laurel, deerbrush, Pacific poison oak, foothill pine, valley oak, ponderosa pine, and annual grasses and forbs

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent medium gravel, 0 to 20 percent cobbles, 0 to 30 percent stones, 0 to 15 percent boulders

Restrictive feature: None identified

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.3 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 5 inches; gravelly loam

Bt1—5 to 15 inches; gravelly clay loam

Bt2—15 to 29 inches; gravelly clay loam

Bt3—29 to 38 inches; gravelly clay loam

Bt4—38 to 44 inches; gravelly clay loam

Bt5—44 to 61 inches; extremely stony clay loam

Bt6—61 to 72 inches; very stony clay loam

Minor Components in Map Unit 645

Rock outcrop

Composition: 8 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Soils that are 20 to 40 inches deep to bedrock

Composition: 5 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to bedrock

Composition: 5 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Ultic Haploxeralfs gravelly loam and similar soils

Composition: 5 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Clayey-skeletal soils

Composition: 4 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Soils that are 10 to 20 inches deep to bedrock

Composition: 3 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

646—Coalcanyon taxadjunct very gravelly loam, 3 to 15 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Wildlife habitat, watershed, and livestock grazing

Major land resource area: 18

Landscape: Southern Cascade foothills

Elevation: 600 to 1,115 feet (183 to 341 meters)

Mean annual precipitation: 30 to 37 inches (762 to 940 millimeters)

Mean annual air temperature: 59 to 61 degrees F (15 to 16 degrees C)

Frost-free period: 255 to 260 days

Map Unit Composition

Coalcanyon Taxadjunct very gravelly loam—80 percent

Minor components—20 percent

Characteristics of Coalcanyon Taxadjunct Very Gravelly Loam

Slope: 3 to 15 percent

Geomorphic position: Benches in canyons

Parent material: Stony and gravelly colluvium derived from basalt

Observed vegetation: Blue oak, interior live oak, canyon live oak, foothill pine, California laurel, Pacific poison oak, manzanita, deerbrush, toyon, and annual grasses and forbs

Texture of the surface layer: Very gravelly loam

Percentage of the surface covered by rock fragments: 10 to 60 percent subangular gravel, 5 to 50 percent subangular cobbles, 0 to 25 percent subangular stones, 0 to 20 percent subangular boulders

Restrictive feature: None identified

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 5.5 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 4s-7

Land capability, nonirrigated: 4s-7

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 2 inches; very gravelly loam

Bt1—2 to 6 inches; very gravelly loam

Bt2—6 to 14 inches; very gravelly clay loam

Bt3—14 to 24 inches; very gravelly clay loam

Bt4—24 to 42 inches; extremely cobbly clay loam

2Bt5—42 to 54 inches; very cobbly clay

2Bt6—54 to 72 inches; very gravelly clay loam

Minor Components in Map Unit 646

Clayey-skeletal soils

Composition: 10 percent

Slope: 3 to 15 percent

Geomorphic position: Benches in canyons

Hydric soil status: Not hydric

Chinacamp and similar soils

Composition: 5 percent

Slope: 3 to 15 percent

Geomorphic position: Benches in canyons

Hydric soil status: Not hydric

Coonhollow gravelly loam and similar soils

Composition: 5 percent

Slope: 3 to 15 percent

Geomorphic position: Benches in canyons

Hydric soil status: Not hydric

647—Coalcanyon taxadjunct very gravelly loam, 15 to 30 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Wildlife habitat, watershed, and livestock grazing

Major land resource area: 18

Landscape: Southern Cascade foothills

Elevation: 635 to 1,275 feet (195 to 390 meters)

Mean annual precipitation: 30 to 47 inches (762 to 1,194 millimeters)

Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)

Frost-free period: 240 to 260 days

Map Unit Composition

Coalcanyon Taxadjunct very gravelly loam—75 percent

Minor components—25 percent

Characteristics of Coalcanyon Taxadjunct Very Gravelly Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes in canyons

Parent material: Stony and gravelly colluvium derived from basalt

Observed vegetation: Blue oak, interior live oak, canyon live oak, foothill pine, California laurel, Pacific poison oak, manzanita, deerbrush, toyon, and annual grasses and forbs

Texture of the surface layer: Very gravelly loam

Percentage of the surface covered by rock fragments: 10 to 60 percent subangular gravel, 5 to 50 percent subangular cobbles, 0 to 25 percent subangular stones, 0 to 20 percent subangular boulders

Restrictive feature: None identified

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 5.5 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 4s-7

Land capability, nonirrigated: 4s-7

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 2 inches; very gravelly loam

Bt1—2 to 6 inches; very gravelly loam

Bt2—6 to 14 inches; very gravelly clay loam

Bt3—14 to 24 inches; very gravelly clay loam

Bt4—24 to 42 inches; extremely cobbly clay loam

2Bt5—42 to 54 inches; very cobbly clay

2Bt6—54 to 72 inches; very gravelly clay loam

Minor Components in Map Unit 647

Clayey-skeletal soils

Composition: 10 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes in canyons

Hydric soil status: Not hydric

Chinacamp and similar soils

Composition: 5 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes in canyons

Hydric soil status: Not hydric

Coonhollow gravelly loam and similar soils

Composition: 5 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes in canyons

Hydric soil status: Not hydric

Ultic Haploxeralfs, sandstone, and similar soils

Composition: 5 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes in canyons

Hydric soil status: Not hydric

648—Coalcanyon taxadjunct very gravelly loam, 30 to 50 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Wildlife habitat, watershed, and livestock grazing

Major land resource area: 18

Landscape: Southern Cascade foothills

Elevation: 435 to 1,555 feet (134 to 475 meters)

Mean annual precipitation: 30 to 47 inches (762 to 1,194 millimeters)

Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)

Frost-free period: 240 to 260 days

Map Unit Composition

Coalcanyon Taxadjunct very gravelly loam—80 percent

Minor components—20 percent

Characteristics of Coalcanyon Taxadjunct Very Gravelly Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons

Parent material: Stony and gravelly colluvium derived from basalt

Observed vegetation: Blue oak, interior live oak, canyon live oak, foothill pine, California laurel, Pacific poison oak, manzanita, deerbrush, toyon, and annual grasses and forbs

Texture of the surface layer: Very gravelly loam

Percentage of the surface covered by rock fragments: 10 to 60 percent subangular

gravel, 5 to 50 percent subangular cobbles, 0 to 25 percent subangular stones, 0 to 20 percent subangular boulders

Restrictive feature: None identified

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 5.5 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 6e-7

Land capability, nonirrigated: 6e-7

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 2 inches; very gravelly loam

Bt1—2 to 6 inches; very gravelly loam

Bt2—6 to 14 inches; very gravelly clay loam

Bt3—14 to 24 inches; very gravelly clay loam

Bt4—24 to 42 inches; extremely cobbly clay loam

2Bt5—42 to 54 inches; very cobbly clay

2Bt6—54 to 72 inches; very gravelly clay loam

Minor Components in Map Unit 648

Ultic Haploxeralfs, sandstone, and similar soils

Composition: 8 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons

Hydric soil status: Not hydric

Clayey-skeletal soils

Composition: 5 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons

Hydric soil status: Not hydric

Chinacamp and similar soils

Composition: 5 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons

Hydric soil status: Not hydric

Coonhollow gravelly loam and similar soils

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons

Hydric soil status: Not hydric

649—Coalcanyon taxadjunct very gravelly loam, 50 to 70 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Wildlife habitat, watershed, and livestock grazing

Major land resource area: 18

Landscape: Southern Cascade foothills

Elevation: 675 to 1,915 feet (207 to 585 meters)

Mean annual precipitation: 35 to 47 inches (889 to 1,194 millimeters)

Mean annual air temperature: 57 to 59 degrees F (14 to 15 degrees C)

Frost-free period: 240 to 255 days

Map Unit Composition

Coalcanyon Taxadjunct very gravelly loam—75 percent

Minor components—25 percent

Characteristics of Coalcanyon Taxadjunct Very Gravelly Loam

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Parent material: Stony and gravelly colluvium derived from basalt

Observed vegetation: Blue oak, interior live oak, canyon live oak, foothill pine, California laurel, Pacific poison oak, manzanita, deerbrush, toyon, and annual grasses and forbs

Texture of the surface layer: Very gravelly loam

Percentage of the surface covered by rock fragments: 0 to 25 percent subangular stones, 0 to 20 percent subangular boulders, 10 to 60 percent subangular gravel, 5 to 50 percent subangular cobbles

Restrictive feature: None identified

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 5.5 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 7e-7

Land capability, nonirrigated: 7e-7

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 2 inches; very gravelly loam

Bt1—2 to 6 inches; very gravelly loam

Bt2—6 to 14 inches; very gravelly clay loam

Bt3—14 to 24 inches; very gravelly clay loam

Bt4—24 to 42 inches; extremely cobbly clay loam

2Bt5—42 to 54 inches; very cobbly clay

2Bt6—54 to 72 inches; very gravelly clay loam

Minor Components in Map Unit 649

Ultic Haploxeralfs, sandstone, and similar soils

Composition: 10 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Chinacamp and similar soils

Composition: 5 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Coonhollow gravelly loam and similar soils

Composition: 5 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Clayey-skeletal soils

Composition: 5 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

650—Schott very gravelly loam, 3 to 15 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Homesite development, timber production, watershed, and wildlife habitat

Major land resource area: 22B

Landscape: Southern Cascade Mountains

Elevation: 1,400 to 3,595 feet (427 to 1,097 meters)

Mean annual precipitation: 40 to 72 inches (1,016 to 1,829 millimeters)

Mean annual air temperature: 52 to 57 degrees F (11 to 14 degrees C)

Frost-free period: 155 to 230 days

Map Unit Composition

Schott very gravelly loam—65 percent

Minor components—35 percent

Characteristics of Schott Very Gravelly Loam

Slope: 3 to 15 percent

Geomorphic position: The top of volcanic ridges

Parent material: Loamy residuum weathered from volcanic breccia

Observed vegetation: Ponderosa pine, Douglas-fir, incense cedar, California black oak, canyon live oak, manzanita, California buckthorn, Pacific poison oak, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 25 percent medium, subangular gravel, 0 to 15 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 3.3 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 6 inches; very gravelly loam

Bt1—6 to 13 inches; very gravelly clay loam

Bt2—13 to 22 inches; very cobbly clay loam

Bt3—22 to 40 inches; extremely gravelly clay loam

Bt4—40 to 50 inches; extremely gravelly sandy clay loam

R—50 inches; bedrock

Minor Components in Map Unit 650

Lydon soils, 20 to 35 percent clay, and similar soils

Composition: 10 percent

Slope: 3 to 15 percent

Geomorphic position: The top of volcanic ridges

Hydric soil status: Not hydric

Lydon and similar soils

Composition: 8 percent

Slope: 3 to 15 percent

Geomorphic position: The top of volcanic ridges

Hydric soil status: Not hydric

Andic Haploxeralfs with paralithic bedrock at a depth of 20 to 60 inches and similar soils

Composition: 7 percent

Slope: 3 to 15 percent

Geomorphic position: The top of volcanic ridges

Hydric soil status: Not hydric

Paradiso and similar soils

Composition: 5 percent

Slope: 3 to 15 percent

Geomorphic position: The top of volcanic ridges

Hydric soil status: Not hydric

Rock outcrop

Composition: 3 percent

Slope: 3 to 15 percent

Geomorphic position: The top of volcanic ridges

Hydric soil status: Not hydric

Rockstripe and similar soils

Composition: 2 percent

Slope: 3 to 15 percent

Geomorphic position: The top of volcanic ridges

Hydric soil status: Not hydric

651—Schott very gravelly loam, 15 to 30 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Timber production, watershed, and wildlife habitat

Major land resource area: 22B

Landscape: Southern Cascade Mountains

Elevation: 1,400 to 3,595 feet (427 to 1,097 meters)

Mean annual precipitation: 40 to 72 inches (1,016 to 1,829 millimeters)

Mean annual air temperature: 52 to 57 degrees F (11 to 14 degrees C)

Frost-free period: 155 to 230 days

Map Unit Composition

Schott very gravelly loam—65 percent

Minor components—35 percent

Characteristics of Schott Very Gravelly Loam

Slope: 15 to 30 percent

Geomorphic position: The top and shoulder slopes of volcanic ridges

Parent material: Loamy colluvium and/or residuum weathered from volcanic breccia

Observed vegetation: Ponderosa pine, Douglas-fir, incense cedar, California black oak, canyon live oak, manzanita, California buckthorn, Pacific poison oak, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 25 percent medium, subangular gravel, 0 to 15 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 3.3 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 6 inches; very gravelly loam

Bt1—6 to 13 inches; very gravelly clay loam

Bt2—13 to 22 inches; very cobbly clay loam

Bt3—22 to 40 inches; extremely gravelly clay loam

Bt4—40 to 50 inches; extremely gravelly sandy clay loam

R—50 inches; bedrock

Minor Components in Map Unit 651

Lydon and similar soils

Composition: 9 percent

Slope: 15 to 30 percent

Geomorphic position: The top and shoulder slopes of volcanic ridges

Hydric soil status: Not hydric

Rock outcrop

Composition: 8 percent

Slope: 15 to 30 percent

Geomorphic position: The top and shoulder slopes of volcanic ridges

Hydric soil status: Not hydric

Lydon soils, 20 to 35 percent clay, and similar soils

Composition: 6 percent

Slope: 15 to 30 percent

Geomorphic position: The top and shoulder slopes of volcanic ridges

Hydric soil status: Not hydric

Andic Haploxeralfs with paralithic bedrock at a depth of 20 to 60 inches and similar soils

Composition: 5 percent

Slope: 15 to 30 percent

Geomorphic position: The top and shoulder slopes of volcanic ridges

Hydric soil status: Not hydric

Rockstripe and similar soils

Composition: 4 percent

Slope: 15 to 30 percent

Geomorphic position: The top and shoulder slopes of volcanic ridges

Hydric soil status: Not hydric

Paradiso and similar soils

Composition: 3 percent

Slope: 15 to 30 percent

Geomorphic position: The top and shoulder slopes of volcanic ridges

Hydric soil status: Not hydric

652—Schott-Rock outcrop complex, 30 to 50 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Timber production, watershed, and wildlife habitat

Major land resource area: 22B

Landscape: Southern Cascade Mountains

Elevation: 1,400 to 3,595 feet (427 to 1,097 meters)

Mean annual precipitation: 40 to 72 inches (1,016 to 1,829 millimeters)

Mean annual air temperature: 52 to 57 degrees F (11 to 14 degrees C)

Frost-free period: 155 to 230 days

Map Unit Composition

Schott very gravelly loam—65 percent

Rock outcrop (mudflow breccia)—20 percent

Minor components—15 percent

Characteristics of Schott Very Gravelly Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons

Parent material: Loamy residuum and/or colluvium derived from volcanic breccia

Observed vegetation: Ponderosa pine, Douglas-fir, incense cedar, California black oak, canyon live oak, manzanita, California buckthorn, Pacific poison oak, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 25 percent medium, subangular gravel, 0 to 15 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 3.3 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 6 inches; very gravelly loam

Bt1—6 to 13 inches; very gravelly clay loam

Bt2—13 to 22 inches; very cobbly clay loam

Bt3—22 to 40 inches; extremely gravelly clay loam

Bt4—40 to 50 inches; extremely gravelly sandy clay loam

R—50 inches; bedrock

Characteristics of Rock Outcrop (Mudflow Breccia)

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons

Surface runoff (bare conditions): Very high

Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 652

Lydon soils, 20 to 35 percent clay, and similar soils

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons

Hydric soil status: Not hydric

Lydon and similar soils

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons

Hydric soil status: Not hydric

Andic Haploxeralfs with paralithic bedrock at a depth of 20 to 60 inches and similar soils

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons

Hydric soil status: Not hydric

Tusccoll and similar soils

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons

Hydric soil status: Not hydric

Rockstripe and similar soils

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons

Hydric soil status: Not hydric

Paradiso and similar soils

Composition: 1 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons

Hydric soil status: Not hydric

654—Coridge-Rock outcrop complex, 3 to 8 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Livestock grazing, homesite development, wildlife habitat, and watershed

Major land resource area: 18

Landscape: Southern Cascade foothills

Elevation: 340 to 1,755 feet (104 to 536 meters)

Mean annual precipitation: 26 to 37 inches (660 to 940 millimeters)

Mean annual air temperature: 59 to 61 degrees F (15 to 16 degrees C)

Frost-free period: 250 to 260 days

Map Unit Composition

Coridge bouldery loam—70 percent

Rock outcrop (Cohasset basalt)—20 percent

Minor components—10 percent

Characteristics of Coridge Bouldery Loam

Slope: 3 to 8 percent

Geomorphic position: The top of basalt ridges

Parent material: Fine-loamy residuum over clayey residuum weathered from basalt

Observed vegetation: Annual grasses and forbs, blue oak, foothill pine, buckbrush, chamise, scrub oak, manzanita, and Pacific poison oak

Texture of the surface layer: Bouldery loam

Percentage of the surface covered by rock fragments: 5 to 25 percent medium gravel, 5 to 15 percent cobbles, 5 to 15 percent stones, 2 to 20 percent boulders

Depth to a restrictive feature (lithic bedrock): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 10 to 40 inches

Available water capacity: Low (about 3.0 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7e-7

Land capability, nonirrigated: 7e-7

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A—0 to 1 inch; bouldery loam

Bt1—1 to 6 inches; gravelly loam

Bt2—6 to 12 inches; gravelly clay loam

Bt3—12 to 19 inches; very gravelly clay loam

Bt4—19 to 24 inches; very gravelly clay

R—24 inches; bedrock

Characteristics of Rock Outcrop (Cohasset Basalt)

Slope: 3 to 8 percent

Geomorphic position: The top of basalt ridges

Surface runoff (bare conditions): Very high

Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 654

Soils that are less than 20 inches deep to bedrock

Composition: 5 percent

Slope: 3 to 8 percent

Geomorphic position: The top of basalt ridges

Hydric soil status: Not hydric

Soils that are more than 40 inches deep to bedrock

Composition: 5 percent

Slope: 3 to 8 percent

Geomorphic position: The top of basalt ridges

Hydric soil status: Not hydric

655—Coridge-Rock outcrop complex, 8 to 15 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Livestock grazing, homesite development, wildlife habitat, and watershed

Major land resource area: 18

Landscape: Southern Cascade foothills

Elevation: 380 to 1,095 feet (116 to 335 meters)

Mean annual precipitation: 27 to 29 inches (686 to 737 millimeters)

Mean annual air temperature: 61 degrees F (16 degrees C)

Frost-free period: 250 to 260 days

Map Unit Composition

Coridge bouldery loam—70 percent
 Rock outcrop (Cohasset basalt)—20 percent
 Minor components—10 percent

Characteristics of Coridge Bouldery Loam

Slope: 8 to 15 percent

Geomorphic position: The top of basalt ridges

Parent material: Fine-loamy residuum over clayey residuum weathered from basalt

Observed vegetation: Annual grasses and forbs, blue oak, foothill pine, buckbrush, chamise, scrub oak, manzanita, and Pacific poison oak

Texture of the surface layer: Bouldery loam

Percentage of the surface covered by rock fragments: 5 to 25 percent medium gravel, 5 to 15 percent cobbles, 5 to 15 percent stones, 2 to 20 percent boulders

Depth to a restrictive feature (lithic bedrock): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 10 to 40 inches

Available water capacity: Low (about 3.0 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-7

Land capability, nonirrigated: 7e-7

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A—0 to 1 inch; bouldery loam

Bt1—1 to 6 inches; gravelly loam

Bt2—6 to 12 inches; gravelly clay loam

Bt3—12 to 19 inches; very gravelly clay loam

Bt4—19 to 24 inches; very gravelly clay

R—24 inches; bedrock

Characteristics of Rock Outcrop (Cohasset Basalt)

Slope: 8 to 15 percent

Geomorphic position: The top of basalt ridges

Surface runoff (bare conditions): Very high

Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 655

Soils that are less than 20 inches deep to bedrock

Composition: 5 percent

Slope: 8 to 15 percent

Geomorphic position: The top of basalt ridges

Hydric soil status: Not hydric

Soils that are more than 40 inches deep to bedrock

Composition: 5 percent

Slope: 8 to 15 percent

Geomorphic position: The top of basalt ridges

Hydric soil status: Not hydric

656—Rock outcrop, cliffs-Coalcanyon taxadjunct complex, 15 to 50 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Wildlife habitat, watershed, and livestock grazing

Major land resource area: 18

Landscape: Southern Cascade foothills

Elevation: 295 to 2,200 feet (91 to 671 meters)

Mean annual precipitation: 27 to 53 inches (686 to 1,346 millimeters)

Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)

Frost-free period: 230 to 260 days

Map Unit Composition

Rock outcrop (basalt cliffs)—40 percent

Coalcanyon Taxadjunct very gravelly loam—40 percent

Minor components—20 percent

Characteristics of Rock Outcrop (Basalt Cliffs)

Slope: 15 to 200 percent

Geomorphic position: Basalt escarpments in canyons

Surface runoff (bare conditions): Very high

Definition: Rock outcrop consists of exposures of bedrock with no soil.

Characteristics of Coalcanyon Taxadjunct Very Gravelly Loam

Slope: 15 to 50 percent

Geomorphic position: Basalt escarpments in canyons

Parent material: Bouldery and gravelly colluvium derived from basalt

Observed vegetation: Interior live oak, canyon live oak, California laurel, Pacific poison oak, toyon, blue oak, and annual grasses and forbs

Texture of the surface layer: Very gravelly loam

Percentage of the surface covered by rock fragments: 10 to 60 percent subangular gravel, 5 to 50 percent subangular cobbles, 0 to 25 percent subangular stones, 0 to 20 percent subangular boulders

Restrictive feature: None identified

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 5.5 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 6e-7

Land capability, nonirrigated: 6e-7

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

- A—0 to 2 inches; very gravelly loam
- Bt1—2 to 6 inches; very gravelly loam
- Bt2—6 to 14 inches; very gravelly clay loam
- Bt3—14 to 24 inches; very gravelly clay loam
- Bt4—24 to 42 inches; extremely cobbly clay loam
- 2Bt5—42 to 54 inches; very cobbly clay
- 2Bt6—54 to 72 inches; very gravelly clay loam

Minor Components in Map Unit 656**Coonhollow gravelly loam and similar soils***Composition:* 10 percent*Slope:* 15 to 50 percent*Geomorphic position:* Basalt escarpments in canyons*Hydric soil status:* Not hydric**Clayey-skeletal soils***Composition:* 5 percent*Slope:* 15 to 50 percent*Geomorphic position:* Basalt escarpments in canyons*Hydric soil status:* Not hydric**Talus***Composition:* 5 percent*Slope:* 15 to 50 percent*Geomorphic position:* Basalt escarpments in canyons*Hydric soil status:* Not hydric**657—Bonneyridge-Chawanakee-Rock outcrop complex, 2 to 15 percent slopes*****Map Unit Setting****General location:* Northeastern Butte County and western Plumas County*Major uses:* Timber production, wildlife habitat, and watershed*Major land resource area:* 22A*Landscape:* Northern Sierra Nevada Mountains*Elevation:* 3,595 to 5,600 feet (1,097 to 1,707 meters)*Mean annual precipitation:* 70 to 80 inches (1,778 to 2,032 millimeters)*Mean annual air temperature:* 48 to 54 degrees F (9 to 12 degrees C)*Frost-free period:* 80 to 170 days***Map Unit Composition***

Bonneyridge sandy loam—35 percent

Chawanakee gravelly sandy loam—30 percent

Rock outcrop (quartz diorite)—20 percent

Minor components—15 percent

Characteristics of Bonneyridge Sandy Loam*Slope:* 2 to 15 percent*Geomorphic position:* Ridgetops on granitic mountains*Parent material:* Coarse-loamy colluvium and/or residuum weathered from quartz diorite*Observed vegetation:* Ponderosa pine, white fir, sugar pine, incense cedar, California

black oak, tanoak, whitethorn ceanothus, Sierra chinquapin, manzanita, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 5 percent subrounded cobbles, 0 to 5 percent subrounded stones

Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.9 inches)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: A

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A1—1 to 3 inches; sandy loam

A2—3 to 6 inches; sandy loam

Bw1—6 to 16 inches; coarse sandy loam

Bw2—16 to 22 inches; coarse sandy loam

Bw3—22 to 31 inches; coarse sandy loam

Bw4—31 to 39 inches; sandy loam

C1—39 to 56 inches; loamy coarse sand

C2—56 to 76 inches; gravelly loamy coarse sand

Characteristics of Chawanakee Gravelly Sandy Loam

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on granitic mountains

Parent material: Coarse-loamy residuum weathered from quartz diorite

Observed vegetation: Manzanita, ponderosa pine, sugar pine, white fir, canyon live oak, tanoak, incense cedar, shrub tanoak, whitethorn ceanothus, and Sierra chinquapin

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent subrounded gravel, 0 to 5 percent subrounded boulders

Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.4 inches)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

Oe—1 to 2 inches; moderately decomposed plant material

A—2 to 5 inches; gravelly sandy loam

Bw1—5 to 11 inches; gravelly sandy loam

Bw2—11 to 19 inches; gravelly sandy loam

Cr—19 inches; bedrock

Characteristics of Rock Outcrop (Quartz Diorite)

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on granitic mountains

Surface runoff (bare conditions): Very high

Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 657

At an elevation of more than 4,800 feet, soils with a frigid soil temperature regime

Composition: 5 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on granitic mountains

Hydric soil status: Not hydric

Soils that are 20 to 40 inches deep to bedrock

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on granitic mountains

Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to bedrock

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on granitic mountains

Hydric soil status: Not hydric

Lithic Xerorthents and similar soils

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on granitic mountains

Hydric soil status: Not hydric

Dystric Xeropsamments and similar soils

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on granitic mountains

Hydric soil status: Not hydric

Lithic Xeropsamments and similar soils

Composition: 1 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on granitic mountains

Hydric soil status: Not hydric

Billscabin gravelly sandy loam and similar soils

Composition: 1 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on granitic mountains

Hydric soil status: Not hydric

658—Bonneyridge-Chawanakee-Rock outcrop complex, 15 to 30 percent slopes

Map Unit Setting

General location: Northeastern Butte County and western Plumas County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 3,595 to 5,780 feet (1,097 to 1,762 meters)

Mean annual precipitation: 70 to 80 inches (1,778 to 2,032 millimeters)

Mean annual air temperature: 48 to 54 degrees F (9 to 12 degrees C)

Frost-free period: 80 to 170 days

Map Unit Composition

Bonneyridge sandy loam—35 percent

Chawanakee gravelly sandy loam—30 percent

Rock outcrop (quartz diorite)—25 percent

Minor components—10 percent

Characteristics of Bonneyridge Sandy Loam

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and shoulder slopes on granitic mountains

Parent material: Coarse-loamy colluvium derived from quartz diorite

Observed vegetation: Ponderosa pine, white fir, sugar pine, incense cedar, California black oak, tanoak, whitethorn ceanothus, Sierra chinquapin, manzanita, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 5 percent subrounded cobbles, 0 to 5 percent subrounded stones

Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.9 inches)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: A

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A1—1 to 3 inches; sandy loam

A2—3 to 6 inches; sandy loam
 Bw1—6 to 16 inches; coarse sandy loam
 Bw2—16 to 22 inches; coarse sandy loam
 Bw3—22 to 31 inches; coarse sandy loam
 Bw4—31 to 39 inches; sandy loam
 C1—39 to 56 inches; loamy coarse sand
 C2—56 to 76 inches; gravelly loamy coarse sand

Characteristics of Chawanakee Gravelly Sandy Loam

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and shoulder slopes on granitic mountains

Parent material: Coarse-loamy residuum weathered from quartz diorite

Observed vegetation: Manzanita, ponderosa pine, sugar pine, white fir, canyon live oak, tanoak, incense cedar, shrub tanoak, whitethorn ceanothus, and Sierra chinquapin

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent subrounded gravel, 0 to 5 percent subrounded boulders

Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.4 inches)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

Oe—1 to 2 inches; moderately decomposed plant material

A—2 to 5 inches; gravelly sandy loam

Bw1—5 to 11 inches; gravelly sandy loam

Bw2—11 to 19 inches; gravelly sandy loam

Cr—19 inches; bedrock

Characteristics of Rock Outcrop (Quartz Diorite)

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and shoulder slopes on granitic mountains

Surface runoff (bare conditions): Very high

Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 658

At an elevation of more than 4,800 feet, soils with a frigid soil temperature regime

Composition: 5 percent

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and shoulder slopes on granitic mountains

Hydric soil status: Not hydric

Soils that are 20 to 40 inches deep to bedrock*Composition:* 1 percent*Slope:* 15 to 30 percent*Geomorphic position:* Ridgetops and shoulder slopes on granitic mountains*Hydric soil status:* Not hydric**Soils that are 40 to 60 inches deep to bedrock***Composition:* 1 percent*Slope:* 15 to 30 percent*Geomorphic position:* Ridgetops and shoulder slopes on granitic mountains*Hydric soil status:* Not hydric**Lithic Xerorthents and similar soils***Composition:* 1 percent*Slope:* 15 to 30 percent*Geomorphic position:* Ridgetops and shoulder slopes on granitic mountains*Hydric soil status:* Not hydric**Lithic Xeropsamments and similar soils***Composition:* 1 percent*Slope:* 15 to 30 percent*Geomorphic position:* Ridgetops and shoulder slopes on granitic mountains*Hydric soil status:* Not hydric**Dystric Xeropsamments and similar soils***Composition:* 1 percent*Slope:* 15 to 30 percent*Geomorphic position:* Ridgetops and shoulder slopes on granitic mountains*Hydric soil status:* Not hydric**659—Bonneyridge-Chawanakee-Rock outcrop complex,
30 to 50 percent slopes*****Map Unit Setting****General location:* Northeastern Butte County and western Plumas County*Major uses:* Timber production, wildlife habitat, and watershed*Major land resource area:* 22A*Landscape:* Northern Sierra Nevada Mountains*Elevation:* 2,795 to 5,600 feet (853 to 1,707 meters)*Mean annual precipitation:* 70 to 80 inches (1,778 to 2,032 millimeters)*Mean annual air temperature:* 48 to 54 degrees F (9 to 12 degrees C)*Frost-free period:* 80 to 170 days***Map Unit Composition***

Bonneyridge sandy loam—35 percent

Chawanakee gravelly sandy loam—30 percent

Rock outcrop (quartz diorite)—25 percent

Minor components—10 percent

Characteristics of Bonneyridge Sandy Loam*Slope:* 30 to 50 percent*Geomorphic position:* Side slopes on granitic mountains*Parent material:* Coarse-loamy colluvium derived from quartz diorite

Observed vegetation: Ponderosa pine, white fir, sugar pine, incense cedar, California black oak, tanoak, whitethorn ceanothus, Sierra chinquapin, manzanita, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 5 percent subrounded cobbles, 0 to 5 percent subrounded stones

Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.9 inches)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: A

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A1—1 to 3 inches; sandy loam

A2—3 to 6 inches; sandy loam

Bw1—6 to 16 inches; coarse sandy loam

Bw2—16 to 22 inches; coarse sandy loam

Bw3—22 to 31 inches; coarse sandy loam

Bw4—31 to 39 inches; sandy loam

C1—39 to 56 inches; loamy coarse sand

C2—56 to 76 inches; gravelly loamy coarse sand

Characteristics of Chawanakee Gravelly Sandy Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes on granitic mountains

Parent material: Coarse-loamy residuum weathered from quartz diorite

Observed vegetation: Manzanita, ponderosa pine, sugar pine, white fir, canyon live oak, tanoak, incense cedar, shrub tanoak, whitethorn ceanothus, and Sierra chinquapin

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent subrounded gravel, 0 to 5 percent subrounded boulders

Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.4 inches)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): Very high

*Interpretive groups**Land capability, irrigated: 7e-1**Land capability, nonirrigated: 7e-1**Hydric soil status: Not hydric**Hydrologic soil group: C**Typical profile**Oi—0 to 1 inch; slightly decomposed plant material**Oe—1 to 2 inches; moderately decomposed plant material**A—2 to 5 inches; gravelly sandy loam**Bw1—5 to 11 inches; gravelly sandy loam**Bw2—11 to 19 inches; gravelly sandy loam**Cr—19 inches; bedrock****Characteristics of Rock Outcrop (Quartz Diorite)****Slope: 30 to 50 percent**Geomorphic position: Side slopes on granitic mountains**Surface runoff (bare conditions): Very high**Definition: Rock outcrop consists of exposures of bedrock with no soil.****Minor Components in Map Unit 659*****At an elevation of more than 4,800 feet, soils with a frigid soil temperature regime***Composition: 5 percent**Slope: 30 to 50 percent**Geomorphic position: Side slopes on granitic mountains**Hydric soil status: Not hydric***Soils that are 20 to 40 inches deep to bedrock***Composition: 1 percent**Slope: 30 to 50 percent**Geomorphic position: Side slopes on granitic mountains**Hydric soil status: Not hydric***Soils that are 40 to 60 inches deep to bedrock***Composition: 1 percent**Slope: 30 to 50 percent**Geomorphic position: Side slopes on granitic mountains**Hydric soil status: Not hydric***Lithic Xerorthents and similar soils***Composition: 1 percent**Slope: 30 to 50 percent**Geomorphic position: Side slopes on granitic mountains**Hydric soil status: Not hydric***Lithic Xeropsamments and similar soils***Composition: 1 percent**Slope: 30 to 50 percent**Geomorphic position: Side slopes on granitic mountains**Hydric soil status: Not hydric***Billscabin gravelly sandy loam and similar soils***Composition: 1 percent**Slope: 30 to 50 percent**Geomorphic position: Side slopes on granitic mountains**Hydric soil status: Not hydric*

660—Bonneyridge-Chawanakee-Rock outcrop complex, 50 to 70 percent slopes

Map Unit Setting

General location: Northeastern Butte County and western Plumas County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 2,495 to 4,900 feet (762 to 1,494 meters)

Mean annual precipitation: 70 to 80 inches (1,778 to 2,032 millimeters)

Mean annual air temperature: 48 to 54 degrees F (9 to 12 degrees C)

Frost-free period: 80 to 170 days

Map Unit Composition

Bonneyridge sandy loam—30 percent

Chawanakee gravelly sandy loam—30 percent

Rock outcrop (quartz diorite)—30 percent

Minor components—10 percent

Characteristics of Bonneyridge Sandy Loam

Slope: 50 to 70 percent

Geomorphic position: Backslopes on granitic mountains

Parent material: Coarse-loamy colluvium derived from quartz diorite

Observed vegetation: Ponderosa pine, white fir, sugar pine, incense cedar, Douglas-fir, California black oak, tanoak, whitethorn ceanothus, Sierra chinquapin, manzanita, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 5 percent subrounded cobbles, 0 to 5 percent subrounded stones

Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.9 inches)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: A

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A1—1 to 3 inches; sandy loam

A2—3 to 6 inches; sandy loam

Bw1—6 to 16 inches; coarse sandy loam

Bw2—16 to 22 inches; coarse sandy loam

Bw3—22 to 31 inches; coarse sandy loam

Bw4—31 to 39 inches; sandy loam

C1—39 to 56 inches; loamy coarse sand

C2—56 to 76 inches; gravelly loamy coarse sand

Characteristics of Chawanakee Gravelly Sandy Loam

Slope: 50 to 70 percent

Geomorphic position: Backslopes on granitic mountains

Parent material: Coarse-loamy colluvium and/or residuum weathered from quartz diorite

Observed vegetation: Manzanita, ponderosa pine, sugar pine, white fir, canyon live oak, tanoak, incense cedar, shrub tanoak, whitethorn ceanothus, and Sierra chinquapin

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent subrounded gravel, 0 to 5 percent subrounded boulders

Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.4 inches)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

Oe—1 to 2 inches; moderately decomposed plant material

A—2 to 5 inches; gravelly sandy loam

Bw1—5 to 11 inches; gravelly sandy loam

Bw2—11 to 19 inches; gravelly sandy loam

Cr—19 inches; bedrock

Characteristics of Rock Outcrop (Quartz Diorite)

Slope: 50 to 70 percent

Geomorphic position: Backslopes on granitic mountains

Surface runoff (bare conditions): Very high

Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 660

Lithic Xerorthents and similar soils

Composition: 3 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on granitic mountains

Hydric soil status: Not hydric

Lithic Xeropsamments and similar soils

Composition: 3 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on granitic mountains

Hydric soil status: Not hydric

At an elevation of more than 4,800 feet, soils with a frigid soil temperature regime

Composition: 1 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on granitic mountains

Hydric soil status: Not hydric

Soils that are 20 to 40 inches deep to bedrock

Composition: 1 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on granitic mountains

Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to bedrock

Composition: 1 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on granitic mountains

Hydric soil status: Not hydric

Billscabin gravelly sandy loam and similar soils

Composition: 1 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on granitic mountains

Hydric soil status: Not hydric

661—Millerridge-Boxrobber complex, 3 to 15 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Wildlife habitat, watershed, and homesite development

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 1,400 to 2,850 feet (427 to 869 meters)

Mean annual precipitation: 45 to 55 inches (1,143 to 1,397 millimeters)

Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)

Frost-free period: 230 to 250 days

Map Unit Composition

Millerridge gravelly sandy clay loam—45 percent

Boxrobber cobbly sandy clay loam—40 percent

Minor components—15 percent

Characteristics of Millerridge Gravelly Sandy Clay Loam

Slope: 3 to 15 percent

Geomorphic position: Ridgetops and footslopes on ultramafic mountains

Parent material: Fine-loamy colluvium and/or residuum weathered from ultramafic rocks

Observed vegetation: Blue oak, foothill pine, California laurel, manzanita, buckbrush, and annual grasses and forbs

Texture of the surface layer: Gravelly sandy clay loam

Percentage of the surface covered by rock fragments: 0 to 60 percent medium, subangular gravel, 0 to 30 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 15 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.1 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 3e-9

Land capability, nonirrigated: 3e-9

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A—0 to 2 inches; gravelly sandy clay loam

Bt1—2 to 6 inches; stony sandy clay loam

Bt2—6 to 12 inches; cobbly clay loam

Bt3—12 to 20 inches; cobbly clay loam

Bt4—20 to 26 inches; gravelly clay

Crt—26 inches; bedrock

Characteristics of Boxrobber Cobbly Sandy Clay Loam

Slope: 3 to 15 percent

Geomorphic position: Ridgetops and footslopes on ultramafic mountains

Parent material: Gravelly and loamy residuum weathered from ultramafic rocks

Observed vegetation: Blue oak, foothill pine, California laurel, manzanita, buckbrush, and annual grasses and forbs

Texture of the surface layer: Cobbly sandy clay loam

Percentage of the surface covered by rock fragments: 5 to 60 percent medium gravel, 5 to 30 percent cobbles, 5 to 20 percent stones, 3 to 15 percent boulders

Depth to a restrictive feature: 10 to 20 inches to paralithic bedrock; 20 to 79 inches to lithic bedrock

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.3 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-7

Land capability, nonirrigated: 7e-7

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 2 inches; cobbly sandy clay loam

Bt1—2 to 8 inches; very gravelly sandy clay loam

Bt2—8 to 16 inches; very gravelly clay loam

Crt—16 to 30 inches; bedrock

R—30 inches; bedrock

Minor Components in Map Unit 661

Earlal and similar soils

Composition: 3 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops and footslopes on ultramafic mountains

Hydric soil status: Not hydric

Typic Haploxeralfs, magnesian, and similar soils

Composition: 3 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops and footslopes on ultramafic mountains

Hydric soil status: Not hydric

Griffgulch and similar soils

Composition: 3 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops and footslopes on metavolcanic mountains

Hydric soil status: Not hydric

At an elevation of less than 1,800 feet, soils with a thermic soil temperature regime

Composition: 3 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops and footslopes on ultramafic mountains

Hydric soil status: Not hydric

Rock outcrop

Composition: 2 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops and footslopes on ultramafic mountains

Hydric soil status: Not hydric

Surnuf and similar soils

Composition: 1 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops and footslopes on metavolcanic mountains

Hydric soil status: Not hydric

662—Millerridge-Boxrobber complex, 15 to 30 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Wildlife habitat, watershed, and homesite development

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 1,400 to 2,700 feet (427 to 823 meters)

Mean annual precipitation: 45 to 55 inches (1,143 to 1,397 millimeters)

Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)

Frost-free period: 230 to 250 days

Map Unit Composition

Millerridge gravelly sandy clay loam—45 percent

Boxrobber cobbly sandy clay loam—40 percent

Minor components—15 percent

Characteristics of Millerridge Gravelly Sandy Clay Loam

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and side slopes on ultramafic mountains

Parent material: Fine-loamy colluvium derived from ultramafic rocks

Observed vegetation: Blue oak, foothill pine, California laurel, manzanita, buckbrush, and annual grasses and forbs

Texture of the surface layer: Gravelly sandy clay loam

Percentage of the surface covered by rock fragments: 0 to 60 percent medium, subangular gravel, 0 to 30 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 15 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.1 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-9

Land capability, nonirrigated: 4e-9

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A—0 to 2 inches; gravelly sandy clay loam

Bt1—2 to 6 inches; stony sandy clay loam

Bt2—6 to 12 inches; cobbly clay loam

Bt3—12 to 20 inches; cobbly clay loam

Bt4—20 to 26 inches; gravelly clay

Crt—26 inches; bedrock

Characteristics of Boxrobber Cobbly Sandy Clay Loam

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and side slopes on ultramafic mountains

Parent material: Gravelly and loamy colluvium derived from ultramafic rocks

Observed vegetation: Blue oak, foothill pine, California laurel, manzanita, buckbrush, and annual grasses and forbs

Texture of the surface layer: Cobbly sandy clay loam

Percentage of the surface covered by rock fragments: 5 to 60 percent medium gravel, 5 to 30 percent cobbles, 5 to 20 percent stones, 3 to 15 percent boulders

Depth to a restrictive feature: 10 to 20 inches to paralithic bedrock; 20 to 79 inches to lithic bedrock

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-7
Land capability, nonirrigated: 7e-7
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile

A—0 to 2 inches; cobbly sandy clay loam
 Bt1—2 to 8 inches; very gravelly sandy clay loam
 Bt2—8 to 16 inches; very gravelly clay loam
 Crt—16 to 30 inches; bedrock
 R—30 inches; bedrock

Minor Components in Map Unit 662

Earlal and similar soils

Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on ultramafic mountains
Hydric soil status: Not hydric

Typic Haploxeralfs, magnesian, and similar soils

Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on ultramafic mountains
Hydric soil status: Not hydric

Griffgulch and similar soils

Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metavolcanic mountains
Hydric soil status: Not hydric

At an elevation of less than 1,800 feet, soils with a thermic soil temperature regime

Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on ultramafic mountains
Hydric soil status: Not hydric

Rock outcrop

Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on ultramafic mountains
Hydric soil status: Not hydric

Surnuf and similar soils

Composition: 1 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metavolcanic mountains
Hydric soil status: Not hydric

663—Millerridge-Boxrobber complex, 30 to 50 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Wildlife habitat and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 950 to 2,795 feet (290 to 853 meters)

Mean annual precipitation: 47 to 55 inches (1,194 to 1,397 millimeters)

Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)

Frost-free period: 230 to 240 days

Map Unit Composition

Millerridge gravelly sandy clay loam—45 percent

Boxrobber cobbly sandy clay loam—40 percent

Minor components—15 percent

Characteristics of Millerridge Gravelly Sandy Clay Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes on ultramafic mountains

Parent material: Fine-loamy colluvium derived from ultramafic rocks

Observed vegetation: Canyon live oak, blue oak, foothill pine, California laurel, manzanita, buckbrush, and annual grasses and forbs

Texture of the surface layer: Gravelly sandy clay loam

Percentage of the surface covered by rock fragments: 0 to 60 percent medium, subangular gravel, 0 to 30 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 15 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.1 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-9

Land capability, nonirrigated: 6e-9

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A—0 to 2 inches; gravelly sandy clay loam

Bt1—2 to 6 inches; stony sandy clay loam

Bt2—6 to 12 inches; cobbly clay loam

Bt3—12 to 20 inches; cobbly clay loam

Bt4—20 to 26 inches; gravelly clay

Crt—26 inches; bedrock

Characteristics of Boxrobber Cobbly Sandy Clay Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes on ultramafic mountains

Parent material: Gravelly and loamy colluvium derived from ultramafic rocks

Observed vegetation: Canyon live oak, blue oak, foothill pine, California laurel, manzanita, buckbrush, and annual grasses and forbs

Texture of the surface layer: Cobbly sandy clay loam

Percentage of the surface covered by rock fragments: 5 to 60 percent medium gravel, 5 to 30 percent cobbles, 5 to 20 percent stones, 3 to 15 percent boulders

Depth to a restrictive feature: 10 to 20 inches to paralithic bedrock; 20 to 79 inches to lithic bedrock

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.3 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-7

Land capability, nonirrigated: 7e-7

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 2 inches; cobbly sandy clay loam

Bt1—2 to 8 inches; very gravelly sandy clay loam

Bt2—8 to 16 inches; very gravelly clay loam

Crt—16 to 30 inches; bedrock

R—30 inches; bedrock

Minor Components in Map Unit 663

Earlal and similar soils

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on ultramafic mountains

Hydric soil status: Not hydric

Typic Haploxeralfs, magnesian, and similar soils

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on ultramafic mountains

Hydric soil status: Not hydric

Griffgulch and similar soils

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on metavolcanic mountains

Hydric soil status: Not hydric

Rock outcrop

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on ultramafic mountains

Hydric soil status: Not hydric

Surnuf and similar soils

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on metavolcanic mountains

Hydric soil status: Not hydric

664—Millerridge-Boxrobber complex, 50 to 70 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Wildlife habitat and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 950 to 2,595 feet (290 to 792 meters)

Mean annual precipitation: 47 to 55 inches (1,194 to 1,397 millimeters)

Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)

Frost-free period: 230 to 240 days

Map Unit Composition

Millerridge gravelly sandy clay loam—45 percent

Boxrobber cobbly sandy clay loam—40 percent

Minor components—15 percent

Characteristics of Millerridge Gravelly Sandy Clay Loam

Slope: 50 to 70 percent

Geomorphic position: Backslopes on ultramafic mountains

Parent material: Fine-loamy colluvium derived from ultramafic rocks

Observed vegetation: Canyon live oak, blue oak, foothill pine, California laurel, manzanita, buckbrush, and annual grasses and forbs

Texture of the surface layer: Gravelly sandy clay loam

Percentage of the surface covered by rock fragments: 0 to 60 percent medium, subangular gravel, 0 to 30 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 15 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.1 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-9

Land capability, nonirrigated: 7e-9

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A—0 to 2 inches; gravelly sandy clay loam
 Bt1—2 to 6 inches; stony sandy clay loam
 Bt2—6 to 12 inches; cobbly clay loam
 Bt3—12 to 20 inches; cobbly clay loam
 Bt4—20 to 26 inches; gravelly clay
 Crt—26 inches; bedrock

Characteristics of Boxrobber Cobbly Sandy Clay Loam

Slope: 50 to 70 percent

Geomorphic position: Backslopes on ultramafic mountains

Parent material: Gravelly and loamy colluvium derived from ultramafic rocks

Observed vegetation: Canyon live oak, blue oak, foothill pine, California laurel, manzanita, buckbrush, and annual grasses and forbs

Texture of the surface layer: Cobbly sandy clay loam

Percentage of the surface covered by rock fragments: 5 to 60 percent medium gravel, 5 to 30 percent cobbles, 5 to 20 percent stones, 3 to 15 percent boulders

Depth to a restrictive feature: 10 to 20 inches to paralithic bedrock; 20 to 79 inches to lithic bedrock

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.3 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-7

Land capability, nonirrigated: 7e-7

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 2 inches; cobbly sandy clay loam
 Bt1—2 to 8 inches; very gravelly sandy clay loam
 Bt2—8 to 16 inches; very gravelly clay loam
 Crt—16 to 30 inches; bedrock
 R—30 inches; bedrock

Minor Components in Map Unit 664**Earlal and similar soils**

Composition: 3 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on ultramafic mountains

Hydric soil status: Not hydric

Typic Haploxeralfs, magnesian, and similar soils

Composition: 3 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on ultramafic mountains

Hydric soil status: Not hydric

Griffgulch and similar soils

Composition: 3 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on metavolcanic mountains

Hydric soil status: Not hydric

Rock outcrop

Composition: 3 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on ultramafic mountains

Hydric soil status: Not hydric

Surnuf and similar soils

Composition: 3 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on metavolcanic mountains

Hydric soil status: Not hydric

665—Surnuf-Bigridge complex, 3 to 15 percent slopes

Map Unit Setting

General location: East-central Butte County

Major uses: Timber production, homesite development, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 1,440 to 2,295 feet (439 to 701 meters)

Mean annual precipitation: 46 to 55 inches (1,168 to 1,397 millimeters)

Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)

Frost-free period: 235 to 245 days

Map Unit Composition

Surnuf gravelly loam—40 percent

Bigridge loam—40 percent

Minor components—20 percent

Characteristics of Surnuf Gravelly Loam

Slope: 3 to 15 percent

Geomorphic position: Ridgetops and footslopes on metasedimentary mountains

Parent material: Silty and clayey residuum weathered from metasedimentary rocks

Observed vegetation: Ponderosa pine, Douglas-fir, canyon live oak, California black oak, incense cedar, tanoak, Pacific madrone, manzanita, toyon, and Pacific poison oak

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 30 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 2 percent subangular stones

Restrictive feature: None identified

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 7.5 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Low

*Interpretive groups**Land capability, irrigated:* 3e-1*Land capability, nonirrigated:* 3e-1*Hydric soil status:* Not hydric*Hydrologic soil group:* B*Typical profile*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 4 inches; gravelly loam

Bt1—4 to 9 inches; gravelly clay loam

Bt2—9 to 16 inches; gravelly clay loam

Bt3—16 to 27 inches; gravelly clay

Bt4—27 to 29 inches; gravelly clay

Bt5—29 to 56 inches; gravelly silty clay

Bt6—56 to 72 inches; silty clay

Characteristics of Bigridge Loam*Slope:* 3 to 15 percent*Geomorphic position:* Ridgetops and footslopes on metasedimentary mountains*Parent material:* Fine-loamy residuum weathered from metasedimentary rocks*Observed vegetation:* Ponderosa pine, Douglas-fir, canyon live oak, California black oak, incense cedar, tanoak, Pacific madrone, manzanita, toyon, and Pacific poison oak*Texture of the surface layer:* Moderately decomposed plant material*Percentage of the surface covered by rock fragments:* 0 to 30 percent coarse, angular gravel, 0 to 5 percent angular cobbles, 0 to 5 percent angular stones*Depth to a restrictive feature (paralithic bedrock):* 40 to 60 inches*Shrink-swell potential:* Low (LEP of less than 3)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* None*Annual ponding frequency:* None*Water table (zone of saturation):* None observed*Available water capacity:* Low (about 4.9 inches)*Natural drainage class:* Well drained*Surface runoff (bare conditions):* Low*Interpretive groups**Land capability, irrigated:* 3e-1*Land capability, nonirrigated:* 3e-1*Hydric soil status:* Not hydric*Hydrologic soil group:* B*Typical profile*

Oe—0 to 1 inch; moderately decomposed plant material

A—1 to 5 inches; loam

BAAt—5 to 9 inches; gravelly loam

Bt1—9 to 15 inches; gravelly loam

Bt2—15 to 20 inches; gravelly loam

BCt1—20 to 27 inches; very gravelly loam

BCt2—27 to 36 inches; extremely gravelly loam

BCt3—36 to 51 inches; very gravelly loam

Crt—51 to 62 inches; bedrock

Minor Components in Map Unit 665

Ultic Haploxeralfs, fine-loamy, more than 60 inches deep to bedrock, and similar soils

Composition: 10 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops and footslopes on metasedimentary mountains

Hydric soil status: Not hydric

Minniecreek and similar soils

Composition: 5 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops and footslopes on metasedimentary mountains

Hydric soil status: Not hydric

Spine taxadjunct and similar soils

Composition: 4 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops and footslopes on metasedimentary mountains

Hydric soil status: Not hydric

Rock outcrop

Composition: 1 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops and footslopes on metasedimentary mountains

Hydric soil status: Not hydric

666—Surnuf-Bigridge complex, 15 to 30 percent slopes

Map Unit Setting

General location: East-central Butte County

Major uses: Timber production, homesite development, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 1,095 to 2,795 feet (335 to 853 meters)

Mean annual precipitation: 46 to 60 inches (1,168 to 1,524 millimeters)

Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)

Frost-free period: 200 to 245 days

Map Unit Composition

Surnuf gravelly loam—40 percent

Bigridge loam—40 percent

Minor components—20 percent

Characteristics of Surnuf Gravelly Loam

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and side slopes on metasedimentary mountains

Parent material: Silty and clayey colluvium and/or residuum weathered from metasedimentary rocks

Observed vegetation: Ponderosa pine, Douglas-fir, canyon live oak, California black oak, incense cedar, tanoak, Pacific madrone, manzanita, toyon, and Pacific poison oak

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 30 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 2 percent subangular stones

Restrictive feature: None identified

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 7.5 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 4 inches; gravelly loam

Bt1—4 to 9 inches; gravelly clay loam

Bt2—9 to 16 inches; gravelly clay loam

Bt3—16 to 27 inches; gravelly clay

Bt4—27 to 29 inches; gravelly clay

Bt5—29 to 56 inches; gravelly silty clay

Bt6—56 to 72 inches; silty clay

Characteristics of Bigridge Loam

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and side slopes on metasedimentary mountains

Parent material: Fine-loamy colluvium and/or residuum weathered from metasedimentary rocks

Observed vegetation: Ponderosa pine, Douglas-fir, canyon live oak, California black oak, incense cedar, tanoak, Pacific madrone, manzanita, toyon, and Pacific poison oak

Texture of the surface layer: Moderately decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 30 percent coarse, angular gravel, 0 to 5 percent angular cobbles, 0 to 5 percent angular stones

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oe—0 to 1 inch; moderately decomposed plant material
 A—1 to 5 inches; loam
 BA_t—5 to 9 inches; gravelly loam
 B_t1—9 to 15 inches; gravelly loam
 B_t2—15 to 20 inches; gravelly loam
 BC_t1—20 to 27 inches; very gravelly loam
 BC_t2—27 to 36 inches; extremely gravelly loam
 BC_t3—36 to 51 inches; very gravelly loam
 C_rt—51 to 62 inches; bedrock

Minor Components in Map Unit 666**Ultic Haploxeralfs, fine-loamy, more than 60 inches deep to bedrock, and similar soils***Composition:* 10 percent*Slope:* 15 to 30 percent*Geomorphic position:* Ridgetops and side slopes on metasedimentary mountains*Hydric soil status:* Not hydric**Minniecreek and similar soils***Composition:* 5 percent*Slope:* 15 to 30 percent*Geomorphic position:* Ridgetops and side slopes on metasedimentary mountains*Hydric soil status:* Not hydric**Spine taxadjunct and similar soils***Composition:* 4 percent*Slope:* 15 to 30 percent*Geomorphic position:* Ridgetops and side slopes on metasedimentary mountains*Hydric soil status:* Not hydric**Rock outcrop***Composition:* 1 percent*Slope:* 15 to 30 percent*Geomorphic position:* Ridgetops and side slopes on metasedimentary mountains*Hydric soil status:* Not hydric**667—Surnuf-Bigrigge complex, 30 to 50 percent slopes*****Map Unit Setting****General location:* East-central Butte County*Major uses:* Timber production, wildlife habitat, and watershed*Major land resource area:* 22A*Landscape:* Northern Sierra Nevada Mountains*Elevation:* 1,000 to 2,715 feet (305 to 829 meters)*Mean annual precipitation:* 46 to 60 inches (1,168 to 1,524 millimeters)*Mean annual air temperature:* 55 to 57 degrees F (13 to 14 degrees C)*Frost-free period:* 200 to 245 days***Map Unit Composition***

Surnuf gravelly loam—40 percent

Bigrigge loam—40 percent

Minor components—20 percent

Characteristics of Surnuf Gravelly Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes on metasedimentary mountains

Parent material: Silty and clayey residuum and/or colluvium derived from metasedimentary rocks

Observed vegetation: Ponderosa pine, Douglas-fir, canyon live oak, California black oak, incense cedar, tanoak, Pacific madrone, manzanita, toyon, and Pacific poison oak

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 30 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 2 percent subangular stones

Restrictive feature: None identified

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 7.5 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 4 inches; gravelly loam

Bt1—4 to 9 inches; gravelly clay loam

Bt2—9 to 16 inches; gravelly clay loam

Bt3—16 to 27 inches; gravelly clay

Bt4—27 to 29 inches; gravelly clay

Bt5—29 to 56 inches; gravelly silty clay

Bt6—56 to 72 inches; silty clay

Characteristics of Bigridge Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes on metasedimentary mountains

Parent material: Fine-loamy residuum and/or colluvium derived from metasedimentary rocks

Observed vegetation: Ponderosa pine, Douglas-fir, canyon live oak, California black oak, incense cedar, tanoak, Pacific madrone, manzanita, toyon, and Pacific poison oak

Texture of the surface layer: Moderately decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 30 percent coarse, angular gravel, 0 to 5 percent angular cobbles, 0 to 5 percent angular stones

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed
Available water capacity: Low (about 4.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oe—0 to 1 inch; moderately decomposed plant material
 A—1 to 5 inches; loam
 BA_t—5 to 9 inches; gravelly loam
 B_t1—9 to 15 inches; gravelly loam
 B_t2—15 to 20 inches; gravelly loam
 BC_t1—20 to 27 inches; very gravelly loam
 BC_t2—27 to 36 inches; extremely gravelly loam
 BC_t3—36 to 51 inches; very gravelly loam
 C_rt—51 to 62 inches; bedrock

Minor Components in Map Unit 667

Ultic Haploxeralfs, fine-loamy, more than 60 inches deep to bedrock, and similar soils

Composition: 10 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metasedimentary mountains
Hydric soil status: Not hydric

Minniecreek and similar soils

Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metasedimentary mountains
Hydric soil status: Not hydric

Spine taxadjunct and similar soils

Composition: 4 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metasedimentary mountains
Hydric soil status: Not hydric

Rock outcrop

Composition: 1 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metasedimentary mountains
Hydric soil status: Not hydric

668—Surnuf-Bigridge complex, 50 to 70 percent slopes

Map Unit Setting

General location: East-central Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 895 to 2,715 feet (274 to 829 meters)

Mean annual precipitation: 46 to 60 inches (1,168 to 1,524 millimeters)

Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)

Frost-free period: 200 to 245 days

Map Unit Composition

Surnuf gravelly loam—40 percent

Bigridge loam—40 percent

Minor components—20 percent

Characteristics of Surnuf Gravelly Loam

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Parent material: Silty and clayey residuum and/or colluvium derived from metasedimentary rocks

Observed vegetation: Ponderosa pine, Douglas-fir, canyon live oak, California black oak, incense cedar, tanoak, Pacific madrone, manzanita, toyon, and Pacific poison oak

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 30 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 2 percent subangular stones

Restrictive feature: None identified

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 7.5 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 4 inches; gravelly loam

Bt1—4 to 9 inches; gravelly clay loam

Bt2—9 to 16 inches; gravelly clay loam

Bt3—16 to 27 inches; gravelly clay

Bt4—27 to 29 inches; gravelly clay

Bt5—29 to 56 inches; gravelly silty clay

Bt6—56 to 72 inches; silty clay

Characteristics of Bigridge Loam

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Parent material: Fine-loamy residuum and/or colluvium derived from metasedimentary rocks

Observed vegetation: Ponderosa pine, Douglas-fir, canyon live oak, California black oak, incense cedar, tanoak, Pacific madrone, manzanita, toyon, and Pacific poison oak

Texture of the surface layer: Moderately decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 30 percent coarse, angular gravel, 0 to 5 percent angular cobbles, 0 to 5 percent angular stones
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oe—0 to 1 inch; moderately decomposed plant material
 A—1 to 5 inches; loam
 BA_t—5 to 9 inches; gravelly loam
 B_t1—9 to 15 inches; gravelly loam
 B_t2—15 to 20 inches; gravelly loam
 BC_t1—20 to 27 inches; very gravelly loam
 BC_t2—27 to 36 inches; extremely gravelly loam
 BC_t3—36 to 51 inches; very gravelly loam
 C_{rt}—51 to 62 inches; bedrock

Minor Components in Map Unit 668

Ultic Haploxeralfs, fine-loamy, more than 60 inches deep to bedrock, and similar soils

Composition: 10 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Minniecreek and similar soils

Composition: 5 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Spine taxadjunct and similar soils

Composition: 4 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Rock outcrop

Composition: 1 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

669—Oroshore-Mounthope-Dunstone complex, 3 to 15 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Homesite development, livestock grazing, wildlife habitat, and watershed

Major land resource area: 18

Landscape: Northern Sierra Nevada foothills

Elevation: 435 to 2,095 feet (134 to 640 meters)

Mean annual precipitation: 35 to 50 inches (889 to 1,270 millimeters)

Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)

Frost-free period: 240 to 260 days

Map Unit Composition

Oroshore gravelly loam—35 percent

Mounthope loam—25 percent

Dunstone gravelly loam—20 percent

Minor components—20 percent

Characteristics of Oroshore Gravelly Loam

Slope: 3 to 15 percent

Geomorphic position: Ridgetops and footslopes on metamorphic hills

Parent material: Gravelly and loamy residuum weathered from metamorphic rocks

Observed vegetation: Annual grasses and forbs, blue oak, interior live oak, canyon live oak, foothill pine, buckbrush, manzanita, toyon, and Pacific poison oak

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 5 to 30 percent angular gravel, 0 to 25 percent angular cobbles, 0 to 10 percent angular stones, 0 to 10 percent angular boulders

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.1 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 2 inches; gravelly loam

Bt1—2 to 15 inches; gravelly clay loam

Bt2—15 to 28 inches; very cobbly clay loam

Bt3—28 to 34 inches; extremely gravelly clay loam

Crt—34 inches; bedrock

Characteristics of Mounthope Loam

Slope: 3 to 15 percent

Geomorphic position: Ridgetops and footslopes on metamorphic hills

Parent material: Fine-loamy residuum weathered from metamorphic rocks

Observed vegetation: Interior live oak, canyon live oak, foothill pine, blue oak, buckbrush, manzanita, toyon, and Pacific poison oak

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.7 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; loam

Bt1—3 to 7 inches; loam

Bt2—7 to 15 inches; loam

Bt3—15 to 22 inches; gravelly clay loam

Bt4—22 to 26 inches; gravelly clay loam

Bt5—26 to 31 inches; very gravelly clay loam

Bt6—31 to 42 inches; very gravelly clay loam

Bt7—42 to 52 inches; gravelly clay loam

Cr—52 inches; bedrock

Characteristics of Dunstone Gravelly Loam

Slope: 3 to 15 percent

Geomorphic position: Ridgetops and footslopes on metamorphic hills

Parent material: Loamy residuum weathered from metamorphic rocks

Observed vegetation: Annual grasses and forbs, blue oak, interior live oak, canyon live oak, foothill pine, buckbrush, manzanita, toyon, and Pacific poison oak

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 0 to 5 percent subangular cobbles, 0 to 2 percent subangular stones, 0 to 1 percent subangular boulders

Depth to a restrictive feature: 10 to 20 inches to paralithic bedrock; 20 to 40 inches to lithic bedrock

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A1—0 to 4 inches; gravelly loam

A2—4 to 6 inches; gravelly loam

Bt1—6 to 10 inches; gravelly loam

Bt2—10 to 15 inches; very gravelly loam

Crt—15 to 37 inches; bedrock

R—37 inches; bedrock

Minor Components in Map Unit 669

Rock outcrop

Composition: 6 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops and footslopes on metamorphic hills

Hydric soil status: Not hydric

Fine textured soils

Composition: 5 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops and footslopes on metamorphic hills

Hydric soil status: Not hydric

Clayey-skeletal soils

Composition: 5 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops and footslopes on metamorphic hills

Hydric soil status: Not hydric

Boxrobber and similar soils

Composition: 2 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops and footslopes on ultramafic hills

Hydric soil status: Not hydric

Loamy-skeletal soils that are 10 to 20 inches deep to bedrock

Composition: 2 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops and footslopes on metamorphic hills

Hydric soil status: Not hydric

670—Oroshore-Mounthope-Dunstone complex, 15 to 30 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Homesite development, livestock grazing, wildlife habitat, and watershed

Major land resource area: 18

Landscape: Northern Sierra Nevada foothills
Elevation: 435 to 2,095 feet (134 to 640 meters)
Mean annual precipitation: 35 to 60 inches (889 to 1,524 millimeters)
Mean annual air temperature: 55 to 61 degrees F (13 to 16 degrees C)
Frost-free period: 200 to 260 days

Map Unit Composition

Oroshore gravelly loam—35 percent
 Mounthope loam—25 percent
 Dunstone gravelly loam—20 percent
 Minor components—20 percent

Characteristics of Oroshore Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metamorphic hills
Parent material: Gravelly and loamy residuum and/or colluvium derived from metamorphic rocks
Observed vegetation: Annual grasses and forbs, blue oak, interior live oak, canyon live oak, foothill pine, buckbrush, manzanita, toyon, and Pacific poison oak
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 5 to 30 percent angular gravel, 0 to 25 percent angular cobbles, 0 to 10 percent angular stones, 0 to 10 percent angular boulders
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)
Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.1 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

A—0 to 2 inches; gravelly loam
 Bt1—2 to 15 inches; gravelly clay loam
 Bt2—15 to 28 inches; very cobbly clay loam
 Bt3—28 to 34 inches; extremely gravelly clay loam
 Crt—34 inches; bedrock

Characteristics of Mounthope Loam

Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metamorphic hills
Parent material: Fine-loamy residuum and/or colluvium derived from metamorphic rocks
Observed vegetation: Interior live oak, canyon live oak, foothill pine, blue oak, buckbrush, manzanita, toyon, and Pacific poison oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent coarse,

subangular gravel, 0 to 10 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.7 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; loam

Bt1—3 to 7 inches; loam

Bt2—7 to 15 inches; loam

Bt3—15 to 22 inches; gravelly clay loam

Bt4—22 to 26 inches; gravelly clay loam

Bt5—26 to 31 inches; very gravelly clay loam

Bt6—31 to 42 inches; very gravelly clay loam

Bt7—42 to 52 inches; gravelly clay loam

Cr—52 inches; bedrock

Characteristics of Dunstone Gravelly Loam

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and side slopes on metamorphic hills

Parent material: Loamy residuum and/or colluvium derived from metamorphic rocks

Observed vegetation: Annual grasses and forbs, blue oak, interior live oak, canyon live oak, foothill pine, buckbrush, manzanita, toyon, and Pacific poison oak

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 0 to 5 percent subangular cobbles, 0 to 2 percent subangular stones, 0 to 1 percent subangular boulders

Depth to a restrictive feature: 10 to 20 inches to paralithic bedrock; 20 to 40 inches to lithic bedrock

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

- A1—0 to 4 inches; gravelly loam
- A2—4 to 6 inches; gravelly loam
- Bt1—6 to 10 inches; gravelly loam
- Bt2—10 to 15 inches; very gravelly loam
- Crt—15 to 37 inches; bedrock
- R—37 inches; bedrock

Minor Components in Map Unit 670**Rock outcrop***Composition:* 8 percent*Slope:* 15 to 30 percent*Geomorphic position:* Ridgetops and side slopes on metamorphic hills*Hydric soil status:* Not hydric**Fine textured soils***Composition:* 4 percent*Slope:* 15 to 30 percent*Geomorphic position:* Ridgetops and side slopes on metamorphic hills*Hydric soil status:* Not hydric**Clayey-skeletal soils***Composition:* 4 percent*Slope:* 15 to 30 percent*Geomorphic position:* Ridgetops and side slopes on metamorphic hills*Hydric soil status:* Not hydric**Boxrobber and similar soils***Composition:* 2 percent*Slope:* 15 to 30 percent*Geomorphic position:* Ridgetops and side slopes on ultramafic hills*Hydric soil status:* Not hydric**Loamy-skeletal soils that are 10 to 20 inches deep to bedrock***Composition:* 2 percent*Slope:* 15 to 30 percent*Geomorphic position:* Ridgetops and side slopes on metamorphic hills*Hydric soil status:* Not hydric**671—Oroshore-Mounthope-Dunstone complex, 30 to 50 percent slopes****Map Unit Setting***General location:* Central Butte County*Major uses:* Wildlife habitat, watershed, and livestock grazing*Major land resource area:* 18*Landscape:* Northern Sierra Nevada foothills*Elevation:* 590 to 2,400 feet (180 to 732 meters)*Mean annual precipitation:* 35 to 60 inches (889 to 1,524 millimeters)*Mean annual air temperature:* 55 to 61 degrees F (13 to 16 degrees C)*Frost-free period:* 200 to 260 days**Map Unit Composition**

Oroshore gravelly loam—35 percent

Mounthope loam—25 percent

Dunstone gravelly loam—20 percent
 Minor components—20 percent

Characteristics of Oroshore Gravelly Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons and on metamorphic hills

Parent material: Gravelly and loamy residuum and/or colluvium derived from metamorphic rocks

Observed vegetation: Annual grasses and forbs, blue oak, interior live oak, canyon live oak, foothill pine, buckbrush, manzanita, toyon, and Pacific poison oak

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 5 to 30 percent angular gravel, 0 to 25 percent angular cobbles, 0 to 10 percent angular stones, 0 to 10 percent angular boulders

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.1 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 2 inches; gravelly loam

Bt1—2 to 15 inches; gravelly clay loam

Bt2—15 to 28 inches; very cobbly clay loam

Bt3—28 to 34 inches; extremely gravelly clay loam

Crt—34 inches; bedrock

Characteristics of Mounthope Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons and on metamorphic hills

Parent material: Fine-loamy residuum and/or colluvium derived from metamorphic rocks

Observed vegetation: Interior live oak, canyon live oak, foothill pine, blue oak, buckbrush, manzanita, toyon, and Pacific poison oak

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.7 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; loam

Bt1—3 to 7 inches; loam

Bt2—7 to 15 inches; loam

Bt3—15 to 22 inches; gravelly clay loam

Bt4—22 to 26 inches; gravelly clay loam

Bt5—26 to 31 inches; very gravelly clay loam

Bt6—31 to 42 inches; very gravelly clay loam

Bt7—42 to 52 inches; gravelly clay loam

Cr—52 inches; bedrock

Characteristics of Dunstone Gravelly Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons and on metamorphic hills

Parent material: Loamy residuum and/or colluvium derived from metamorphic rocks

Observed vegetation: Annual grasses and forbs, blue oak, interior live oak, canyon live oak, foothill pine, buckbrush, manzanita, toyon, and Pacific poison oak

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 0 to 5 percent subangular cobbles, 0 to 2 percent subangular stones, 0 to 1 percent subangular boulders

Depth to a restrictive feature: 10 to 20 inches to paralithic bedrock; 20 to 40 inches to lithic bedrock

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A1—0 to 4 inches; gravelly loam

A2—4 to 6 inches; gravelly loam

Bt1—6 to 10 inches; gravelly loam

Bt2—10 to 15 inches; very gravelly loam

Crt—15 to 37 inches; bedrock

R—37 inches; bedrock

Minor Components in Map Unit 671

Rock outcrop

Composition: 10 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons and on metamorphic hills

Hydric soil status: Not hydric

Fine textured soils

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons and on metamorphic hills

Hydric soil status: Not hydric

Clayey-skeletal soils

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons and on metamorphic hills

Hydric soil status: Not hydric

Boxrobber and similar soils

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on ultramafic hills

Hydric soil status: Not hydric

Loamy-skeletal soils that are 10 to 20 inches deep to bedrock

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons and on metamorphic hills

Hydric soil status: Not hydric

672—Oroshore-Mounthope-Dunstone complex, 50 to 70 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Wildlife habitat and watershed

Major land resource area: 18

Landscape: Northern Sierra Nevada foothills

Elevation: 895 to 2,400 feet (274 to 732 meters)

Mean annual precipitation: 37 to 60 inches (940 to 1,524 millimeters)

Mean annual air temperature: 55 to 61 degrees F (13 to 16 degrees C)

Frost-free period: 200 to 260 days

Map Unit Composition

Oroshore gravelly loam—30 percent

Mounthope loam—25 percent

Dunstone gravelly loam—25 percent

Minor components—20 percent

Characteristics of Oroshore Gravelly Loam

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Parent material: Gravelly and loamy residuum and/or colluvium derived from metamorphic rocks

Observed vegetation: Annual grasses and forbs, blue oak, interior live oak, canyon live oak, foothill pine, buckbrush, manzanita, toyon, and Pacific poison oak

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 5 to 30 percent angular gravel, 0 to 25 percent angular cobbles, 0 to 10 percent angular stones, 0 to 10 percent angular boulders

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.1 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 2 inches; gravelly loam

Bt1—2 to 15 inches; gravelly clay loam

Bt2—15 to 28 inches; very cobbly clay loam

Bt3—28 to 34 inches; extremely gravelly clay loam

Crt—34 inches; bedrock

Characteristics of Mounthope Loam

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Parent material: Fine-loamy residuum and/or colluvium derived from metamorphic rocks

Observed vegetation: Interior live oak, canyon live oak, foothill pine, blue oak, buckbrush, manzanita, toyon, and Pacific poison oak

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.7 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; loam

Bt1—3 to 7 inches; loam

Bt2—7 to 15 inches; loam

Bt3—15 to 22 inches; gravelly clay loam

Bt4—22 to 26 inches; gravelly clay loam

Bt5—26 to 31 inches; very gravelly clay loam

Bt6—31 to 42 inches; very gravelly clay loam

Bt7—42 to 52 inches; gravelly clay loam

Cr—52 inches; bedrock

Characteristics of Dunstone Gravelly Loam

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Parent material: Loamy residuum and/or colluvium derived from metamorphic rocks

Observed vegetation: Annual grasses and forbs, blue oak, interior live oak, canyon live oak, foothill pine, buckbrush, manzanita, toyon, and Pacific poison oak

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 0 to 5 percent subangular cobbles, 0 to 2 percent subangular stones, 0 to 1 percent subangular boulders

Depth to a restrictive feature: 10 to 20 inches to paralithic bedrock; 20 to 40 inches to lithic bedrock

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A1—0 to 4 inches; gravelly loam

A2—4 to 6 inches; gravelly loam

Bt1—6 to 10 inches; gravelly loam

Bt2—10 to 15 inches; very gravelly loam

Crt—15 to 37 inches; bedrock

R—37 inches; bedrock

Minor Components in Map Unit 672

Rock outcrop

Composition: 12 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Fine textured soils*Composition:* 2 percent*Slope:* 50 to 70 percent*Geomorphic position:* Backslopes in canyons*Hydric soil status:* Not hydric**Clayey-skeletal soils***Composition:* 2 percent*Slope:* 50 to 70 percent*Geomorphic position:* Backslopes in canyons*Hydric soil status:* Not hydric**Boxrobber and similar soils***Composition:* 2 percent*Slope:* 50 to 70 percent*Geomorphic position:* Backslopes in canyons*Hydric soil status:* Not hydric**Loamy-skeletal soils that are 10 to 20 inches deep to bedrock***Composition:* 2 percent*Slope:* 50 to 70 percent*Geomorphic position:* Backslopes in canyons*Hydric soil status:* Not hydric**674—Chawanakee-Bonneyridge-Rock outcrop complex,
70 to 110 percent slopes*****Map Unit Setting****General location:* Northeastern Butte County and western Plumas County*Major uses:* Wildlife habitat and watershed*Major land resource area:* 22A*Landscape:* Northern Sierra Nevada Mountains*Elevation:* 1,675 to 3,995 feet (512 to 1,219 meters)*Mean annual precipitation:* 72 to 78 inches (1,829 to 1,981 millimeters)*Mean annual air temperature:* 48 to 52 degrees F (9 to 11 degrees C)*Frost-free period:* 100 to 150 days***Map Unit Composition***

Chawanakee gravelly sandy loam—30 percent

Bonneyridge sandy loam—30 percent

Rock outcrop (quartz diorite)—30 percent

Minor components—10 percent

Characteristics of Chawanakee Gravelly Sandy Loam*Slope:* 70 to 110 percent*Geomorphic position:* Backslopes in canyons*Parent material:* Coarse-loamy colluvium and/or residuum weathered from quartz diorite*Observed vegetation:* Manzanita, ponderosa pine, sugar pine, white fir, canyon live oak, tanoak, incense cedar, shrub tanoak, whitethorn ceanothus, and Sierra chinquapin*Texture of the surface layer:* Slightly decomposed plant material*Percentage of the surface covered by rock fragments:* 0 to 10 percent subrounded gravel, 0 to 5 percent subrounded boulders

Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.4 inches)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

Oe—1 to 2 inches; moderately decomposed plant material

A—2 to 5 inches; gravelly sandy loam

Bw1—5 to 11 inches; gravelly sandy loam

Bw2—11 to 19 inches; gravelly sandy loam

Cr—19 inches; bedrock

Characteristics of Bonneyridge Sandy Loam

Slope: 70 to 110 percent

Geomorphic position: Backslopes in canyons

Parent material: Coarse-loamy colluvium derived from quartz diorite

Observed vegetation: Ponderosa pine, white fir, sugar pine, incense cedar, Douglas-fir, California black oak, tanoak, whitethorn ceanothus, Sierra chinquapin, manzanita, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 5 percent subrounded cobbles, 0 to 5 percent subrounded stones

Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.9 inches)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: A

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A1—1 to 3 inches; sandy loam

A2—3 to 6 inches; sandy loam

Bw1—6 to 16 inches; coarse sandy loam
 Bw2—16 to 22 inches; coarse sandy loam
 Bw3—22 to 31 inches; coarse sandy loam
 Bw4—31 to 39 inches; sandy loam
 C1—39 to 56 inches; loamy coarse sand
 C2—56 to 76 inches; gravelly loamy coarse sand

Characteristics of Rock Outcrop (Quartz Diorite)

Slope: 70 to 110 percent
Geomorphic position: Backslopes in canyons
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 674

Lithic Xerorthents and similar soils

Composition: 3 percent
Slope: 70 to 110 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Lithic Xeropsamments and similar soils

Composition: 3 percent
Slope: 70 to 110 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Soils that are 20 to 40 inches deep to bedrock

Composition: 2 percent
Slope: 70 to 110 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to bedrock

Composition: 1 percent
Slope: 70 to 110 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Billscabin gravelly sandy loam and similar soils

Composition: 1 percent
Slope: 70 to 110 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

675—Clearhayes-Hamslough complex, 0 to 2 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 140 to 400 feet (43 to 122 meters)
Mean annual precipitation: 25 to 29 inches (635 to 737 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 250 to 255 days

Map Unit Composition

Clearhayes sandy clay loam—70 percent

Hamslough clay—15 percent

Minor components—15 percent

Characteristics of Clearhayes Sandy Clay Loam

Slope: 0 to 2 percent

Geomorphic position: Bars on low strath terraces

Parent material: Fine-loamy alluvium derived from volcanic rocks over gravelly alluvium derived from andesite

Observed vegetation: Annual grasses and forbs, with blue oak, interior live oak, and buckeye at the higher elevations

Texture of the surface layer: Sandy clay loam

Percentage of the surface covered by rock fragments: 0 to 30 percent medium, rounded gravel, 0 to 5 percent rounded cobbles, 0 to 2 percent rounded stones

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Occasional

Annual ponding frequency: None

Depth to a water table (zone of saturation): 13 to 60 inches

Available water capacity: Low (about 3.0 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Storie index: 55 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 2 inches; sandy clay loam

Bt1—2 to 10 inches; gravelly sandy clay loam

Bt2—10 to 19 inches; gravelly sandy clay loam

C1—19 to 28 inches; extremely gravelly sandy loam

C2—28 to 38 inches; extremely gravelly loamy coarse sand

C3—38 to 46 inches; extremely gravelly sandy clay loam

2Cr—46 inches; bedrock

Characteristics of Hamslough Clay

Slope: 0 to 2 percent

Geomorphic position: Channels on low strath terraces

Parent material: Clayey alluvium over gravelly alluvium derived from volcanic rocks

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Clay

Percentage of the surface covered by rock fragments: 0 to 20 percent medium, rounded gravel, 0 to 25 percent rounded cobbles

Depth to a restrictive feature: 20 to 40 inches to a duripan; 44 to 88 inches to paralithic bedrock

Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Occasional

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 80 inches

Available water capacity: Very low (about 2.3 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Storie index: 15 (revised)

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

A1—0 to 3 inches; clay

A2—3 to 14 inches; cobbly clay

Bw—14 to 19 inches; extremely gravelly clay

Bg—19 to 27 inches; extremely gravelly sandy clay

2Bqm—27 inches; duripan

Minor Components in Map Unit 675

Soils that are less than 40 inches deep to bedrock

Composition: 3 percent

Slope: 0 to 2 percent

Geomorphic position: Bars on low strath terraces

Hydric soil status: Not hydric

Redsluff taxadjunct and similar soils

Composition: 3 percent

Slope: 0 to 2 percent

Geomorphic position: Strath terraces

Hydric soil status: Not hydric

Soils that are frequently flooded

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Flood plains

Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to lithic bedrock

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Strath terraces

Hydric soil status: Not hydric

Anita soils with a gravelly duripan and similar soils

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Clayey swales on strath terraces

Hydric soil status: Hydric

Typic Haploxeralfs, very stony, and similar soils

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Strath terraces in canyons

Hydric soil status: Not hydric

Soils that are frequently ponded for long periods*Composition:* 1 percent*Slope:* 0 to 1 percent*Geomorphic position:* Channels and vernal pools on low strath terraces*Hydric soil status:* Hydric**676—Carhart-Anita taxadjunct complex, 0 to 12 percent slopes*****Map Unit Setting****General location:* Central Butte County*Major uses:* Livestock grazing, homesite development, wildlife habitat, and watershed*Major land resource area:* 18*Landscape:* Southern Cascade foothills*Elevation:* 140 to 495 feet (44 to 152 meters)*Mean annual precipitation:* 25 to 30 inches (635 to 762 millimeters)*Mean annual air temperature:* 61 to 63 degrees F (16 to 17 degrees C)*Frost-free period:* 250 to 260 days***Map Unit Composition***

Carhart clay—50 percent

Anita taxadjunct clay—40 percent

Minor components—10 percent

Characteristics of Carhart Clay*Slope:* 0 to 12 percent*Geomorphic position:* Basins, toeslopes, footslopes, and head slopes on volcanic hills*Parent material:* Clayey alluvium derived from volcanic rocks*Observed vegetation:* Annual grasses and forbs*Texture of the surface layer:* Clay*Percentage of the surface covered by rock fragments:* 0 to 5 percent medium, subrounded gravel, 0 to 5 percent subrounded cobbles*Depth to a restrictive feature (paralithic bedrock):* 20 to 40 inches*Shrink-swell potential:* Very high (LEP of more than 9)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* None*Annual ponding frequency:* Occasional*Depth to a water table (zone of saturation):* 0 to 40 inches*Available water capacity:* Low (about 4.5 inches)*Natural drainage class:* Poorly drained*Surface runoff (bare conditions):* Very high***Interpretive groups****Land capability, irrigated:* 5w-2*Land capability, nonirrigated:* 5w-2*Hydric soil status:* Hydric*Hydrologic soil group:* D***Typical profile***

A—0 to 2 inches; clay

Bssg1—2 to 12 inches; clay

Bssg2—12 to 24 inches; clay
 Bssg3—24 to 30 inches; clay
 2Crk—30 inches; bedrock

Characteristics of Anita Taxadjunct Clay

Slope: 0 to 12 percent

Geomorphic position: Basins, toeslopes, footslopes, and head slopes on volcanic hills

Parent material: Clayey alluvium derived from volcanic rocks

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Clay

Percentage of the surface covered by rock fragments: 0 to 5 percent medium, subrounded gravel, 0 to 10 percent subrounded cobbles

Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches

Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 20 inches

Available water capacity: Very low (about 1.2 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7w-2

Land capability, nonirrigated: 7w-2

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

A—0 to 2 inches; clay

Bg—2 to 6 inches; clay

Bssg—6 to 11 inches; clay

2Cr—11 inches; bedrock

Minor Components in Map Unit 676

Anita soils with a gravelly duripan and similar soils

Composition: 6 percent

Slope: 0 to 2 percent

Geomorphic position: Basins on strath terraces on volcanic hills

Hydric soil status: Hydric

Loamy soils that are 2 to 20 inches deep to bedrock

Composition: 2 percent

Slope: 0 to 12 percent

Geomorphic position: Knobs on volcanic hills

Hydric soil status: Not hydric

Clearhayes and similar soils

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Strath terraces

Hydric soil status: Not hydric

677—Tuscan-Fallager-Anita, gravelly duripan, complex, 0 to 3 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Livestock grazing, wildlife habitat, watershed, and homesite development

Major land resource area: 18

Landscape: Southern Cascade foothills

Elevation: 140 to 540 feet (43 to 165 meters)

Mean annual precipitation: 24 to 35 inches (610 to 889 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 250 to 255 days

Map Unit Composition

Tuscan gravelly loam—40 percent

Fallager loam—25 percent

Anita gravelly clay, gravelly duripan—15 percent

Minor components—20 percent

Characteristics of Tuscan Gravelly Loam

Slope: 0 to 3 percent

Geomorphic position: Mounds on strath terraces

Parent material: Loamy alluvium over clayey alluvium over cemented, gravelly alluvium derived from volcanic rocks

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 0 to 25 percent medium, rounded gravel, 0 to 5 percent rounded cobbles

Depth to a restrictive feature: 10 to 20 inches to a duripan; 11 to 56 inches to paralithic bedrock

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 2 to 20 inches

Available water capacity: Very low (about 1.5 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7s-8

Land capability, nonirrigated: 7s-8

Storie index: 23 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 2 inches; gravelly loam

Bt1—2 to 4 inches; clay loam

Bt2—4 to 7 inches; gravelly clay

Bt3—7 to 11 inches; cobbly clay

2Bqm—11 inches; cemented, gravelly duripan

Characteristics of Fallager Loam

Slope: 0 to 3 percent

Geomorphic position: Swales on strath terraces

Parent material: Loamy alluvium over clayey alluvium over cemented, gravelly alluvium derived from volcanic rocks

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: 0 to 10 percent medium, rounded gravel, 0 to 25 percent rounded cobbles

Depth to a restrictive feature: 4 to 10 inches to a duripan; 5 to 46 inches to paralithic bedrock

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 10 inches

Available water capacity: Very low (about 0.9 inch)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Storie index: 22 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 1 inch; loam

Bt1—1 to 3 inches; gravelly clay loam

2Bt2—3 to 7 inches; gravelly clay

3Bqm—7 inches; cemented, gravelly duripan

Characteristics of Anita Gravelly Clay, Gravelly Duripan

Slope: 0 to 1 percent

Geomorphic position: Clayey swales on strath terraces

Parent material: Clayey alluvium over cemented, gravelly alluvium derived from volcanic rocks

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Gravelly clay

Percentage of the surface covered by rock fragments: 0 to 10 percent medium, subrounded gravel, 0 to 60 percent subrounded cobbles

Depth to a restrictive feature: 10 to 20 inches to a duripan; 11 to 56 inches to paralithic bedrock

Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 20 inches

Available water capacity: Very low (about 1.7 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): High

*Interpretive groups**Land capability, irrigated: 7w-2**Land capability, nonirrigated: 7w-2**Storie index: 9 (revised)**Hydric soil status: Hydric**Hydrologic soil group: D**Typical profile*

A—0 to 3 inches; gravelly clay

Bss1—3 to 8 inches; gravelly clay

Bss2—8 to 15 inches; gravelly clay

2Bkqm—15 inches; cemented, gravelly duripan

Minor Components in Map Unit 677**Redtough and similar soils***Composition: 10 percent**Slope: 0 to 3 percent**Geomorphic position: Mounds on strath terraces**Hydric soil status: Not hydric***Soils that are frequently ponded for long periods***Composition: 3 percent**Slope: 0 to 1 percent**Geomorphic position: Vernal pools on strath terraces**Hydric soil status: Hydric***Soils that do not have a duripan and are 10 to 20 inches deep to bedrock***Composition: 2 percent**Slope: 0 to 3 percent**Geomorphic position: Mounds on reworked strath terraces**Hydric soil status: Not hydric***Soils that do not have a duripan and are 2 to 10 inches deep to bedrock***Composition: 2 percent**Slope: 0 to 3 percent**Geomorphic position: Swales on reworked strath terraces**Hydric soil status: Not hydric***Carhart and similar soils***Composition: 1 percent**Slope: 0 to 3 percent**Geomorphic position: Clay flats on strath terraces**Hydric soil status: Hydric***Soils on riser slopes***Composition: 1 percent**Slope: 10 to 35 percent**Geomorphic position: Riser slopes on strath terraces**Hydric soil status: Not hydric***Soils that are 2 to 20 inches deep to lithic bedrock***Composition: 1 percent**Slope: 0 to 3 percent**Geomorphic position: Strath terraces**Hydric soil status: Not hydric*

679—Lucksev-Butteside-Carhart complex, 2 to 15 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Livestock grazing, wildlife habitat, watershed, and homesite development

Major land resource area: 18

Landscape: Southern Cascade foothills

Elevation: 140 to 760 feet (43 to 232 meters)

Mean annual precipitation: 24 to 35 inches (610 to 889 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 250 to 260 days

Map Unit Composition

Lucksev loam—40 percent

Butteside gravelly loam—35 percent

Carhart clay—15 percent

Minor components—10 percent

Characteristics of Lucksev Loam

Slope: 2 to 15 percent

Geomorphic position: Strath terraces and volcanic ridges, buttes, and hills

Parent material: Loamy alluvium and/or residuum over clayey alluvium and/or residuum weathered from volcanic rocks

Observed vegetation: Annual grasses and forbs, with blue oak at the higher elevations

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: 0 to 15 percent fine gravel, 0 to 20 percent cobbles, 0 to 5 percent stones, 0 to 2 percent boulders

Depth to a restrictive feature (paralithic bedrock): 4 to 20 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 2 to 20 inches

Available water capacity: Very low (about 2.4 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 2 inches; loam

Bt1—2 to 7 inches; clay loam

Bt2—7 to 15 inches; clay

2Crq—15 inches; bedrock

Characteristics of Butteside Gravelly Loam

Slope: 2 to 15 percent

Geomorphic position: Strath terraces and volcanic ridges, buttes, and hills

Parent material: Loamy alluvium and/or residuum over clayey alluvium and/or residuum weathered from volcanic rocks

Observed vegetation: Annual grasses and forbs, with blue oak and foothill pine at the higher elevations

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 0 to 15 percent fine gravel, 0 to 25 percent cobbles, 0 to 10 percent stones, 0 to 1 percent boulders

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.2 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A—0 to 2 inches; gravelly loam

Bt1—2 to 8 inches; clay loam

Bt2—8 to 13 inches; clay loam

Bt3—13 to 27 inches; clay

2Crtq—27 inches; bedrock

Characteristics of Carhart Clay

Slope: 2 to 15 percent

Geomorphic position: Foothills and head slopes on volcanic ridges, buttes, and hills

Parent material: Clayey alluvium derived from volcanic rocks

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Clay

Percentage of the surface covered by rock fragments: 0 to 5 percent medium, subrounded gravel, 0 to 5 percent subrounded cobbles

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 0 to 40 inches

Available water capacity: Low (about 4.5 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

A—0 to 2 inches; clay
 Bssg1—2 to 12 inches; clay
 Bssg2—12 to 24 inches; clay
 Bssg3—24 to 30 inches; clay
 2Crtk—30 inches; bedrock

Minor Components in Map Unit 679**Ultic Haploxeralfs and similar soils***Composition:* 2 percent*Slope:* 2 to 15 percent*Geomorphic position:* Strath terraces and side slopes on volcanic hills*Hydric soil status:* Not hydric**Soils that are 40 to 60 inches deep to bedrock***Composition:* 2 percent*Slope:* 2 to 15 percent*Geomorphic position:* Strath terraces and side slopes on volcanic hills*Hydric soil status:* Not hydric**Fine-loamy soils***Composition:* 2 percent*Slope:* 2 to 15 percent*Geomorphic position:* Strath terraces and side slopes on volcanic hills*Hydric soil status:* Not hydric**Anita taxadjunct and similar soils***Composition:* 2 percent*Slope:* 2 to 15 percent*Geomorphic position:* Clay flats on volcanic hills*Hydric soil status:* Hydric**Rock outcrop***Composition:* 1 percent*Slope:* 2 to 15 percent*Geomorphic position:* Strath terraces and side slopes on volcanic hills*Hydric soil status:* Not hydric**Loamy soils***Composition:* 1 percent*Slope:* 2 to 15 percent*Geomorphic position:* Strath terraces and side slopes on volcanic hills*Hydric soil status:* Not hydric**680—Lucksev-Butteside complex, 15 to 35 percent slopes****Map Unit Setting***General location:* Central Butte County*Major uses:* Livestock grazing, wildlife habitat, and watershed*Major land resource area:* 18*Landscape:* Southern Cascade foothills*Elevation:* 180 to 695 feet (55 to 213 meters)*Mean annual precipitation:* 25 to 35 inches (635 to 889 millimeters)*Mean annual air temperature:* 61 to 63 degrees F (16 to 17 degrees C)*Frost-free period:* 250 to 260 days

Map Unit Composition

Lucksev loam—45 percent
 Butteside gravelly loam—40 percent
 Minor components—15 percent

Characteristics of Lucksev Loam

Slope: 15 to 35 percent
Geomorphic position: Side slopes on volcanic ridges, buttes, and hills
Parent material: Loamy colluvium over clayey residuum weathered from volcanic rocks
Observed vegetation: Annual grasses and forbs, with blue oak at the higher elevations
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 15 percent fine gravel, 0 to 20 percent cobbles, 0 to 5 percent stones, 0 to 2 percent boulders
Depth to a restrictive feature (paralithic bedrock): 4 to 20 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 2.4 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile

A—0 to 2 inches; loam
 Bt1—2 to 7 inches; clay loam
 Bt2—7 to 15 inches; clay
 2Crq—15 inches; bedrock

Characteristics of Butteside Gravelly Loam

Slope: 15 to 35 percent
Geomorphic position: Side slopes on volcanic ridges, buttes, and hills
Parent material: Loamy colluvium over clayey residuum weathered from volcanic rocks
Observed vegetation: Annual grasses and forbs, with blue oak, foothill pine, and California buckeye at the higher elevations
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 15 percent fine gravel, 0 to 25 percent cobbles, 0 to 10 percent stones, 0 to 1 percent boulders
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.2 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Very high

*Interpretive groups**Land capability, irrigated: 6e-1**Land capability, nonirrigated: 6e-1**Hydric soil status: Not hydric**Hydrologic soil group: C**Typical profile*

A—0 to 2 inches; gravelly loam

Bt1—2 to 8 inches; clay loam

Bt2—8 to 13 inches; clay loam

Bt3—13 to 27 inches; clay

2Crtq—27 inches; bedrock

Minor Components in Map Unit 680**Ultic Haploxeralfs and similar soils***Composition: 4 percent**Slope: 15 to 35 percent**Geomorphic position: Side slopes on volcanic ridges, buttes, and hills**Hydric soil status: Not hydric***Rock outcrop***Composition: 4 percent**Slope: 15 to 35 percent**Geomorphic position: Side slopes on volcanic ridges, buttes, and hills**Hydric soil status: Not hydric***Soils that are 40 to 60 inches deep to bedrock***Composition: 2 percent**Slope: 15 to 35 percent**Geomorphic position: Side slopes on volcanic ridges, buttes, and hills**Hydric soil status: Not hydric***Fine-loamy soils***Composition: 2 percent**Slope: 15 to 35 percent**Geomorphic position: Side slopes on volcanic ridges, buttes, and hills**Hydric soil status: Not hydric***Loamy soils***Composition: 2 percent**Slope: 15 to 35 percent**Geomorphic position: Side slopes on volcanic ridges, buttes, and hills**Hydric soil status: Not hydric***Anita taxadjunct and similar soils***Composition: 1 percent**Slope: 15 to 35 percent**Geomorphic position: Side slopes on volcanic ridges, buttes, and hills**Hydric soil status: Not hydric***683—Typic Haploxeralfs, magnesian, low elevation-Earlal-Rock outcrop complex, 3 to 15 percent slopes****Map Unit Setting***General location: Central Butte County**Major uses: Wildlife habitat, watershed, and homesite development*

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 1,495 to 2,400 feet (457 to 732 meters)

Mean annual precipitation: 45 to 55 inches (1,143 to 1,397 millimeters)

Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)

Frost-free period: 230 to 250 days

Map Unit Composition

Typic Haploxeralfs, magnesian, low elevation—50 percent

Earlal very gravelly loam—20 percent

Rock outcrop (serpentinite)—15 percent

Minor components—15 percent

Characteristics of Typic Haploxeralfs, Magnesian, Low Elevation

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on serpentinite mountains

Parent material: Gravelly and clayey colluvium and/or residuum weathered from serpentinite

Observed vegetation: Manzanita, buckbrush, California laurel, foothill pine, canyon live oak, and blue oak

Texture of the surface layer: Very gravelly loam

Percentage of the surface covered by rock fragments: 20 to 80 percent medium, subangular gravel, 5 to 35 percent subangular cobbles, 0 to 25 percent subangular stones, 0 to 15 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 2.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-9

Land capability, nonirrigated: 7e-9

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A—0 to 3 inches; very gravelly loam

Bt1—3 to 10 inches; very gravelly clay loam

Bt2—10 to 21 inches; very cobbly clay loam

Bt3—21 to 30 inches; very gravelly clay

R—30 inches; bedrock

Characteristics of Earlal Very Gravelly Loam

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on serpentinite mountains

Parent material: Gravelly residuum weathered from serpentinite

Observed vegetation: Whiteleaf manzanita, foothill pine, buckbrush, canyon live oak, California laurel, blue oak, toyon, and annual grasses and forbs

Texture of the surface layer: Very gravelly loam

Percentage of the surface covered by rock fragments: 20 to 50 percent medium, angular gravel, 20 to 30 percent angular cobbles, 10 to 20 percent angular stones, 5 to 15 percent angular boulders

Depth to a restrictive feature (lithic bedrock): 10 to 20 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.2 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7e-9

Land capability, nonirrigated: 7e-9

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 3 inches; very gravelly loam

Bt1—3 to 7 inches; very gravelly clay loam

Bt2—7 to 14 inches; extremely gravelly clay loam

R—14 inches; bedrock

Characteristics of Rock Outcrop (Serpentinite)

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on serpentinite mountains

Surface runoff (bare conditions): Very high

Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 683

At an elevation of less than 1,700 feet, soils with a thermic soil temperature regime

Composition: 10 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on ultramafic hills

Hydric soil status: Not hydric

Soils that are more than 40 inches deep to bedrock

Composition: 3 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on serpentinite mountains

Hydric soil status: Not hydric

Boxrobber and similar soils

Composition: 1 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on ultramafic mountains

Hydric soil status: Not hydric

Millerridge and similar soils

Composition: 1 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on ultramafic mountains

Hydric soil status: Not hydric

684—Typic Haploxeralfs, magnesian, low elevation-Earlal-Rock outcrop complex, 15 to 30 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Wildlife habitat and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 1,640 to 2,335 feet (500 to 713 meters)

Mean annual precipitation: 45 to 55 inches (1,143 to 1,397 millimeters)

Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)

Frost-free period: 230 to 250 days

Map Unit Composition

Typic Haploxeralfs, magnesian, low elevation—50 percent

Earlal very gravelly loam—20 percent

Rock outcrop (serpentinite)—15 percent

Minor components—15 percent

Characteristics of Typic Haploxeralfs, Magnesian, Low Elevation

Slope: 15 to 30 percent

Geomorphic position: Side slopes on serpentinite mountains

Parent material: Gravelly and clayey residuum and/or colluvium derived from serpentinite

Observed vegetation: Manzanita, buckbrush, California laurel, foothill pine, canyon live oak, and blue oak

Texture of the surface layer: Very gravelly loam

Percentage of the surface covered by rock fragments: 20 to 80 percent medium, subangular gravel, 5 to 35 percent subangular cobbles, 0 to 25 percent subangular stones, 0 to 15 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 2.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-9

Land capability, nonirrigated: 7e-9

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

A—0 to 3 inches; very gravelly loam

Bt1—3 to 10 inches; very gravelly clay loam

Bt2—10 to 21 inches; very cobbly clay loam

Bt3—21 to 30 inches; very gravelly clay

R—30 inches; bedrock

Characteristics of Earlal Very Gravelly Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes on serpentinite mountains

Parent material: Gravelly residuum and/or colluvium derived from serpentinite

Observed vegetation: Whiteleaf manzanita, foothill pine, buckbrush, canyon live oak, California laurel, blue oak, toyon, and annual grasses and forbs

Texture of the surface layer: Very gravelly loam

Percentage of the surface covered by rock fragments: 20 to 50 percent medium, angular gravel, 20 to 30 percent angular cobbles, 10 to 20 percent angular stones, 5 to 15 percent angular boulders

Depth to a restrictive feature (lithic bedrock): 10 to 20 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.2 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7e-9

Land capability, nonirrigated: 7e-9

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 3 inches; very gravelly loam

Bt1—3 to 7 inches; very gravelly clay loam

Bt2—7 to 14 inches; extremely gravelly clay loam

R—14 inches; bedrock

Characteristics of Rock Outcrop (Serpentinite)

Slope: 15 to 30 percent

Geomorphic position: Side slopes on serpentinite mountains

Surface runoff (bare conditions): Very high

Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 684

At an elevation of less than 1,700 feet, soils with a thermic soil temperature regime

Composition: 10 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on ultramafic hills

Hydric soil status: Not hydric

Soils that are more than 40 inches deep to bedrock

Composition: 3 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on serpentinite mountains

Hydric soil status: Not hydric

Boxrobber and similar soils

Composition: 1 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on ultramafic mountains

Hydric soil status: Not hydric

Millerridge and similar soils

Composition: 1 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on ultramafic mountains

Hydric soil status: Not hydric

685—Bosquejo taxadjunct clay, 0 to 2 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Livestock grazing, wildlife habitat, watershed, and cropland

Major land resource area: 18

Landscape: Southern Cascade foothills

Elevation: 170 to 535 feet (53 to 164 meters)

Mean annual precipitation: 24 to 30 inches (610 to 762 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 250 to 255 days

Map Unit Composition

Bosquejo taxadjunct, gravelly substratum—70 percent

Minor components—30 percent

Characteristics of Bosquejo Taxadjunct, Gravelly Substratum

Slope: 0 to 2 percent

Geomorphic position: Stream terraces

Parent material: Clayey alluvium over gravelly alluvium over sandy alluvium derived from volcanic rocks

Observed vegetation: Annual grasses and forbs

Texture of the surface layer: Clay

Percentage of the surface covered by rock fragments: 0 to 5 percent medium, subrounded gravel, 0 to 3 percent subrounded cobbles

Depth to a restrictive feature: 40 to 80 inches to dense material; 80 to 180 inches to paralithic bedrock

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Rare

Annual ponding frequency: Occasional

Depth to a water table (zone of saturation): 12 to 60 inches

Available water capacity: Moderate (about 5.7 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 5w-5

Land capability, nonirrigated: 5w-5

Storie index: 34 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A1—0 to 3 inches; clay

A2—3 to 8 inches; clay
 Bss1—8 to 17 inches; clay
 Bss2—17 to 27 inches; clay
 2Btq1—27 to 33 inches; gravelly clay
 2Btq2—33 to 41 inches; very gravelly sandy clay
 2Btq3—41 to 55 inches; very gravelly sandy clay
 3Bdq1—55 to 70 inches; dense sandy loam
 3Bdq2—70 to 81 inches; dense sandy loam

Minor Components in Map Unit 685

Bosquejo taxadjunct clay loam and similar soils

Composition: 12 percent

Slope: 0 to 2 percent

Geomorphic position: Bars on stream terraces

Hydric soil status: Not hydric

Redsluff taxadjunct and similar soils

Composition: 7 percent

Slope: 0 to 2 percent

Geomorphic position: Stream terraces

Hydric soil status: Not hydric

Hamslough and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Channels on stream terraces

Hydric soil status: Hydric

Clearhayes and similar soils

Composition: 3 percent

Slope: 0 to 1 percent

Geomorphic position: Low strath terraces

Hydric soil status: Not hydric

Butteside and similar soils

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Strath terraces

Hydric soil status: Not hydric

Soils that are frequently ponded for long periods

Composition: 1 percent

Slope: 0 to 1 percent

Geomorphic position: Vernal pools and channels on stream terraces

Hydric soil status: Hydric

686—Redsluff taxadjunct clay loam, 0 to 2 percent slopes

Map Unit Setting

General location: Central Butte County

Major uses: Livestock grazing, wildlife habitat, watershed, cropland, and homesite development

Major land resource area: 18

Landscape: Southern Cascade foothills

Elevation: 150 to 600 feet (46 to 183 meters)

Mean annual precipitation: 26 to 36 inches (660 to 914 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 250 to 260 days

Map Unit Composition

Redsluff taxadjunct clay loam—70 percent

Minor components—30 percent

Characteristics of Redsluff Taxadjunct Clay Loam

Slope: 0 to 2 percent

Geomorphic position: Stream terraces

Parent material: Clayey alluvium derived from volcanic rocks over gravelly alluvium derived from andesite

Observed vegetation: Annual grasses and forbs, valley oak, foothill pine, blue oak, California sycamore, Douglas sagewort, and Pacific poison oak

Texture of the surface layer: Clay loam

Percentage of the surface covered by rock fragments: 0 to 5 percent medium, subrounded gravel, 0 to 3 percent subrounded cobbles

Depth to a restrictive feature (paralithic bedrock): 60 to 85 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Rare

Annual ponding frequency: None

Depth to a water table (zone of saturation): 36 to 60 inches

Available water capacity: High (about 9.0 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 2s-11

Land capability, nonirrigated: 3s-11

Storie index: 80 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Ap—0 to 4 inches; clay loam

Bt1—4 to 10 inches; sandy clay

Bt2—10 to 21 inches; clay loam

Bt3—21 to 32 inches; sandy clay loam

Bt4—32 to 42 inches; sandy clay loam

2Bt5—42 to 53 inches; gravelly clay loam

2Bt6—53 to 68 inches; extremely gravelly sandy clay loam

2Bt7—68 to 75 inches; gravelly sandy clay loam

3Cr—75 to 80 inches; bedrock

Minor Components in Map Unit 686

Bosquejo taxadjunct clay and similar soils

Composition: 5 percent

Slope: 0 to 2 percent

Geomorphic position: Stream terraces

Hydric soil status: Not hydric

Soils that are more than 40 inches deep to a duripan

Composition: 5 percent

Slope: 0 to 2 percent

Geomorphic position: Stream terraces

Hydric soil status: Not hydric

Redsluff taxadjunct, nongravelly, and similar soils

Composition: 5 percent

Slope: 0 to 2 percent

Geomorphic position: Stream terraces

Hydric soil status: Not hydric

Redsluff taxadjunct, occasionally flooded, and similar soils

Composition: 5 percent

Slope: 0 to 1 percent

Geomorphic position: Low stream terraces

Hydric soil status: Not hydric

Redsluff and similar soils

Composition: 5 percent

Slope: 0 to 2 percent

Geomorphic position: Stream terraces

Hydric soil status: Not hydric

Clearhayes and similar soils

Composition: 5 percent

Slope: 0 to 2 percent

Geomorphic position: Low strath terraces

Hydric soil status: Not hydric

687—Xerorthents, shallow-Typic Haploxeralfs complex, 2 to 15 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Livestock grazing, homesite development, wildlife habitat, and watershed

Major land resource area: 18

Landscape: Southern Cascade foothills

Elevation: 275 to 1,000 feet (85 to 305 meters)

Mean annual precipitation: 27 to 32 inches (686 to 813 millimeters)

Mean annual air temperature: 61 degrees F (16 degrees C)

Frost-free period: 250 to 260 days

Map Unit Composition

Xerorthents, shallow—45 percent

Typic Haploxeralfs gravelly loam—40 percent

Minor components—15 percent

Characteristics of Xerorthents, Shallow

Slope: 2 to 15 percent

Geomorphic position: Foothills in canyons

Parent material: Loamy residuum, colluvium, and/or alluvium derived from volcanic rocks

Observed vegetation: Annual grasses and forbs, buckbrush, and blue oak

Texture of the surface layer: Gravelly clay loam

Percentage of the surface covered by rock fragments: 0 to 25 percent fine, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 40 percent subangular stones, 0 to 40 percent subangular boulders

Depth to a restrictive feature: 2 to 20 inches to paralithic bedrock; 2 to 20 inches to lithic bedrock

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.1 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7s-8

Land capability, nonirrigated: 7s-8

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 2 inches; gravelly clay loam

Bt1—2 to 5 inches; gravelly clay loam

Bt2—5 to 8 inches; very cobbly clay loam

2R—8 inches; bedrock

Characteristics of Typic Haploxeralfs Gravelly Loam

Slope: 2 to 15 percent

Geomorphic position: Foothslopes in canyons

Parent material: Loamy residuum, colluvium, and/or alluvium derived from volcanic rocks

Observed vegetation: Interior live oak, blue oak, foothill pine, buckbrush, manzanita, Pacific poison oak, toyon, and annual grasses and forbs

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 0 to 25 percent fine, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 20 percent subangular boulders

Depth to a restrictive feature: 20 to 60 inches to paralithic bedrock; 20 to 60 inches to lithic bedrock

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.6 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 2 inches; gravelly loam

Bt1—2 to 8 inches; gravelly clay loam

Bt2—8 to 16 inches; very gravelly clay loam

Bt3—16 to 27 inches; very gravelly clay loam
 Bt4—27 to 40 inches; very gravelly clay loam
 2Cr—40 inches; bedrock

Minor Components in Map Unit 687

Rock outcrop

Composition: 6 percent
Slope: 2 to 15 percent
Geomorphic position: Footslopes in canyons
Hydric soil status: Not hydric

Lithic Haploxeralfs and similar soils

Composition: 5 percent
Slope: 2 to 15 percent
Geomorphic position: Footslopes in canyons
Hydric soil status: Not hydric

Carhart and similar soils

Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Areas around seeps on footslopes in canyons
Hydric soil status: Hydric

Aquic Durixeralfs and similar soils

Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Drainageways on footslopes in canyons
Hydric soil status: Hydric

700—Retsongulch-Flumewall complex, 70 to 100 percent slopes

Map Unit Setting

General location: Northeastern Butte County
Major uses: Watershed, wildlife habitat, and timber production
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,000 to 4,595 feet (610 to 1,402 meters)
Mean annual precipitation: 70 to 78 inches (1,778 to 1,981 millimeters)
Mean annual air temperature: 50 to 54 degrees F (10 to 12 degrees C)
Frost-free period: 110 to 170 days

Map Unit Composition

Retsongulch very gravelly sandy loam—40 percent
 Flumewall gravelly sandy loam—25 percent
 Minor components—35 percent

Characteristics of Retsongulch Very Gravelly Sandy Loam

Slope: 70 to 100 percent
Geomorphic position: Backslopes in canyons
Parent material: Gravelly residuum and/or colluvium derived from metamorphic rocks
Observed vegetation: Douglas-fir, tanoak, canyon live oak, ponderosa pine, California black oak, incense cedar, whiteleaf manzanita, and deerbrush
Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 15 to 80 percent medium, subangular gravel, 0 to 15 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 10 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 20 to 40 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; very gravelly sandy loam

Bt1—3 to 12 inches; very gravelly sandy clay loam

Bt2—12 to 21 inches; extremely gravelly sandy clay loam

Bt3—21 to 30 inches; extremely gravelly sandy loam

R—30 inches; bedrock

Characteristics of Flumewall Gravelly Sandy Loam

Slope: 70 to 100 percent

Geomorphic position: Backslopes in canyons

Parent material: Gravelly residuum and/or colluvium derived from metamorphic rocks

Observed vegetation: Canyon live oak, Douglas-fir, ponderosa pine, tanoak, California black oak, incense cedar, whiteleaf manzanita, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 25 percent medium, angular gravel, 0 to 25 percent angular cobbles, 0 to 15 percent angular stones

Depth to a restrictive feature (lithic bedrock): 10 to 20 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.4 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material

A—0.5 inch to 2 inches; gravelly sandy loam

Bt1—2 to 7 inches; very gravelly sandy loam
 Bt2—7 to 18 inches; extremely stony sandy clay loam
 R—18 inches; bedrock

Minor Components in Map Unit 700

Rock outcrop

Composition: 10 percent
Slope: 70 to 100 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Soils that are 2 to 10 inches deep to bedrock

Composition: 10 percent
Slope: 70 to 100 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Obskel and similar soils

Composition: 8 percent
Slope: 70 to 100 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Obstruction and similar soils

Composition: 7 percent
Slope: 70 to 100 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

701—Powellton-Obstruction complex, 50 to 70 percent slopes

Map Unit Setting

General location: Northeastern Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,200 to 3,595 feet (671 to 1,097 meters)
Mean annual precipitation: 67 to 72 inches (1,702 to 1,829 millimeters)
Mean annual air temperature: 54 degrees F (12 degrees C)
Frost-free period: 150 to 175 days

Map Unit Composition

Powellton gravelly loam—40 percent
 Obstruction gravelly sandy loam—30 percent
 Minor components—30 percent

Characteristics of Powellton Gravelly Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes in ravines and canyons
Parent material: Fine-loamy residuum and/or colluvium derived from metamorphic rocks
Observed vegetation: Douglas-fir, ponderosa pine, incense cedar, tanoak, canyon live oak, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 35 percent fine, subangular gravel, 0 to 5 percent subangular cobbles

Restrictive feature: None identified

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very high (about 10.3 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material

Oe—0.5 inch to 2 inches; moderately decomposed plant material

A—2 to 4 inches; gravelly loam

Bt1—4 to 9 inches; gravelly loam

Bt2—9 to 15 inches; loam

Bt3—15 to 24 inches; clay loam

Bt4—24 to 30 inches; clay loam

Bt5—30 to 41 inches; silt loam

Bt6—41 to 61 inches; loam

Bt7—61 to 83 inches; loam

Characteristics of Obstruction Gravelly Sandy Loam

Slope: 50 to 70 percent

Geomorphic position: Backslopes in ravines and canyons

Parent material: Fine-loamy residuum and/or colluvium derived from metamorphic rocks

Observed vegetation: Douglas-fir, ponderosa pine, incense cedar, tanoak, canyon live oak, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 35 percent fine, subangular gravel, 0 to 25 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 10 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 60 to 96 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.7 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

*Interpretive groups**Land capability, irrigated: 7e-1**Land capability, nonirrigated: 7e-1**Hydric soil status: Not hydric**Hydrologic soil group: B**Typical profile*

Oi—0 to 4 inches; slightly decomposed plant material

A—4 to 7 inches; gravelly sandy loam

Bt1—7 to 10 inches; gravelly sandy clay loam

Bt2—10 to 18 inches; gravelly fine sandy loam

Bt3—18 to 25 inches; gravelly sandy clay loam

Bt4—25 to 33 inches; sandy clay loam

Bt5—33 to 44 inches; fine sandy loam

Bt6—44 to 64 inches; gravelly fine sandy loam

Bt7—64 to 84 inches; gravelly fine sandy loam

Cr—84 inches; bedrock

Minor Components in Map Unit 701**Obskel and similar soils***Composition: 12 percent**Slope: 50 to 70 percent**Geomorphic position: Backslopes in ravines and canyons**Hydric soil status: Not hydric***Retsongulch and similar soils***Composition: 8 percent**Slope: 50 to 70 percent**Geomorphic position: Backslopes in ravines and canyons**Hydric soil status: Not hydric***Coarse-loamy soils***Composition: 5 percent**Slope: 50 to 70 percent**Geomorphic position: Backslopes in ravines and canyons**Hydric soil status: Not hydric***Rock outcrop***Composition: 5 percent**Slope: 50 to 70 percent**Geomorphic position: Backslopes in ravines and canyons**Hydric soil status: Not hydric***702—Cerpone-Typic Haploxeralfs, magnesian-Earlal complex, 3 to 15 percent slopes*****Map Unit Setting****General location: Eastern Butte County**Major uses: Wildlife habitat and watershed**Major land resource area: 22A**Landscape: Northern Sierra Nevada Mountains**Elevation: 2,595 to 3,395 feet (792 to 1,036 meters)**Mean annual precipitation: 55 to 65 inches (1,397 to 1,651 millimeters)*

Mean annual air temperature: 55 degrees F (13 degrees C)

Frost-free period: 185 to 230 days

Map Unit Composition

Cerpone gravelly loam—50 percent

Typic Haploxeralfs, magnesian, very gravelly loam—20 percent

Earlal very gravelly loam—15 percent

Minor components—15 percent

Characteristics of Cerpone Gravelly Loam

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on ultramafic mountains

Parent material: Fine-loamy residuum weathered from ultramafic rocks

Observed vegetation: Jeffrey pine, incense cedar, ponderosa pine, foothill pine, whiteleaf manzanita, California laurel, and buckbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 10 to 30 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 10 percent subangular stones

Depth to a restrictive feature (lithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.6 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 3e-9

Land capability, nonirrigated: 3e-9

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

Oe—1 to 2 inches; moderately decomposed plant material

A—2 to 4 inches; gravelly loam

Bt1—4 to 9 inches; gravelly loam

Bt2—9 to 17 inches; cobbly loam

Bt3—17 to 26 inches; gravelly clay loam

Bt4—26 to 41 inches; very gravelly silty clay loam

Bt5—41 to 57 inches; very gravelly silty clay loam

R—57 inches; bedrock

Characteristics of Typic Haploxeralfs, Magnesian, Very Gravelly Loam

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on ultramafic mountains

Parent material: Gravelly and clayey residuum weathered from serpentinite

Observed vegetation: Annual grasses and forbs, whiteleaf manzanita, buckbrush, foothill pine, and scattered Jeffrey pine and incense cedar

Texture of the surface layer: Very gravelly loam

Percentage of the surface covered by rock fragments: 10 to 80 percent medium, subangular gravel, 5 to 35 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 15 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 20 to 80 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.3 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 7e-9

Land capability, nonirrigated: 7e-9

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 3 inches; very gravelly loam

Bt1—3 to 7 inches; gravelly clay loam

Bt2—7 to 12 inches; very gravelly clay loam

Bt3—12 to 18 inches; gravelly clay

Bt4—18 to 24 inches; very gravelly clay

Btss1—24 to 32 inches; very gravelly clay

Btss2—32 to 42 inches; very gravelly clay

Bt5—42 to 54 inches; extremely cobbly clay loam

R—54 inches; bedrock

Characteristics of Earlal Very Gravelly Loam

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on ultramafic mountains

Parent material: Gravelly residuum weathered from serpentinite

Observed vegetation: Annual grasses and forbs, whiteleaf manzanita, buckbrush, foothill pine, Jeffrey pine, and ponderosa pine

Texture of the surface layer: Very gravelly loam

Percentage of the surface covered by rock fragments: 20 to 50 percent medium, angular gravel, 20 to 30 percent angular cobbles, 10 to 20 percent angular stones, 5 to 15 percent angular boulders

Depth to a restrictive feature (lithic bedrock): 10 to 20 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.2 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7e-9

Land capability, nonirrigated: 7e-9

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

- A—0 to 3 inches; very gravelly loam
- Bt1—3 to 7 inches; very gravelly clay loam
- Bt2—7 to 14 inches; extremely gravelly clay loam
- R—14 inches; bedrock

Minor Components in Map Unit 702**Rock outcrop**

- Composition:* 5 percent
- Slope:* 3 to 15 percent
- Geomorphic position:* Ridgetops on ultramafic mountains
- Hydric soil status:* Not hydric

Surnuf and similar soils

- Composition:* 5 percent
- Slope:* 3 to 15 percent
- Geomorphic position:* Ridgetops on metavolcanic mountains
- Hydric soil status:* Not hydric

Griffgulch and similar soils

- Composition:* 5 percent
- Slope:* 3 to 15 percent
- Geomorphic position:* Ridgetops on metavolcanic mountains
- Hydric soil status:* Not hydric

703—Cerpone-Typic Haploxeralfs, magnesian-Earlal-Rock outcrop complex, 15 to 30 percent slopes.***Map Unit Setting***

- General location:* Eastern Butte County
- Major uses:* Wildlife habitat and watershed
- Major land resource area:* 22A
- Landscape:* Northern Sierra Nevada Mountains
- Elevation:* 2,200 to 3,595 feet (671 to 1,097 meters)
- Mean annual precipitation:* 52 to 65 inches (1,321 to 1,651 millimeters)
- Mean annual air temperature:* 55 to 57 degrees F (13 to 14 degrees C)
- Frost-free period:* 185 to 235 days

Map Unit Composition

- Cerpone gravelly loam—30 percent
- Typic Haploxeralfs, magnesian, very gravelly loam—30 percent
- Earlal very gravelly loam—15 percent
- Rock outcrop (serpentinite)—15 percent
- Minor components—10 percent

Characteristics of Cerpone Gravelly Loam

- Slope:* 15 to 30 percent
- Geomorphic position:* Ridgetops and side slopes on ultramafic mountains
- Parent material:* Fine-loamy colluvium and/or residuum weathered from ultramafic rocks
- Observed vegetation:* Jeffrey pine, incense cedar, ponderosa pine, foothill pine, whiteleaf manzanita, California laurel, and buckbrush
- Texture of the surface layer:* Slightly decomposed plant material
- Percentage of the surface covered by rock fragments:* 10 to 30 percent medium,

subangular gravel, 0 to 20 percent subangular cobbles, 0 to 10 percent subangular stones

Depth to a restrictive feature (lithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.6 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 4e-9

Land capability, nonirrigated: 4e-9

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

Oe—1 to 2 inches; moderately decomposed plant material

A—2 to 4 inches; gravelly loam

Bt1—4 to 9 inches; gravelly loam

Bt2—9 to 17 inches; cobbly loam

Bt3—17 to 26 inches; gravelly clay loam

Bt4—26 to 41 inches; very gravelly silty clay loam

Bt5—41 to 57 inches; very gravelly silty clay loam

R—57 inches; bedrock

Characteristics of Typic Haploxeralfs, Magnesic, Very Gravelly Loam

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and side slopes on ultramafic mountains

Parent material: Gravelly and clayey residuum and/or colluvium derived from serpentinite

Observed vegetation: Annual grasses and forbs, whiteleaf manzanita, buckbrush, foothill pine, and scattered Jeffrey pine and incense cedar

Texture of the surface layer: Very gravelly loam

Percentage of the surface covered by rock fragments: 10 to 80 percent medium, subangular gravel, 5 to 35 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 15 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 20 to 80 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.3 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-9

Land capability, nonirrigated: 7e-9

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 3 inches; very gravelly loam
 Bt1—3 to 7 inches; gravelly clay loam
 Bt2—7 to 12 inches; very gravelly clay loam
 Bt3—12 to 18 inches; gravelly clay
 Bt4—18 to 24 inches; very gravelly clay
 Btss1—24 to 32 inches; very gravelly clay
 Btss2—32 to 42 inches; very gravelly clay
 B't5—42 to 54 inches; extremely cobbly clay loam
 R—54 inches; bedrock

Characteristics of Earlal Very Gravelly Loam

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and side slopes on ultramafic mountains

Parent material: Gravelly residuum weathered from serpentinite

Observed vegetation: Annual grasses and forbs, whiteleaf manzanita, buckbrush, foothill pine, Jeffrey pine, and ponderosa pine

Texture of the surface layer: Very gravelly loam

Percentage of the surface covered by rock fragments: 20 to 50 percent medium, angular gravel, 20 to 30 percent angular cobbles, 10 to 20 percent angular stones, 5 to 15 percent angular boulders

Depth to a restrictive feature (lithic bedrock): 10 to 20 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.2 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7e-9

Land capability, nonirrigated: 7e-9

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 3 inches; very gravelly loam
 Bt1—3 to 7 inches; very gravelly clay loam
 Bt2—7 to 14 inches; extremely gravelly clay loam
 R—14 inches; bedrock

Characteristics of Rock Outcrop (Serpentinite)

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and side slopes on ultramafic mountains

Surface runoff (bare conditions): Very high

Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 703**Griffgulch and similar soils**

Composition: 5 percent

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and side slopes on metavolcanic mountains

Hydric soil status: Not hydric

Surnuf and similar soils*Composition:* 3 percent*Slope:* 15 to 30 percent*Geomorphic position:* Ridgetops and side slopes on metavolcanic mountains*Hydric soil status:* Not hydric**Spine taxadjunct and similar soils***Composition:* 2 percent*Slope:* 15 to 30 percent*Geomorphic position:* Ridgetops and side slopes on metavolcanic mountains*Hydric soil status:* Not hydric**704—Typic Haploxeralfs, magnesian-Earlal-Cerpone-Rock outcrop complex, 30 to 50 percent slopes*****Map Unit Setting****General location:* Eastern Butte County*Major uses:* Wildlife habitat and watershed*Major land resource area:* 22A*Landscape:* Northern Sierra Nevada Mountains*Elevation:* 1,000 to 3,545 feet (305 to 1,082 meters)*Mean annual precipitation:* 52 to 65 inches (1,321 to 1,651 millimeters)*Mean annual air temperature:* 55 to 57 degrees F (13 to 14 degrees C)*Frost-free period:* 185 to 235 days***Map Unit Composition***

Typic Haploxeralfs, magnesian, very gravelly loam—40 percent

Earlal very gravelly loam—20 percent

Cerpone gravelly loam—15 percent

Rock outcrop (serpentinite)—15 percent

Minor components—10 percent

Characteristics of Typic Haploxeralfs, Magnesian, Very Gravelly Loam*Slope:* 30 to 50 percent*Geomorphic position:* Side slopes in canyons and on ultramafic mountains*Parent material:* Gravelly and clayey colluvium derived from serpentinite*Observed vegetation:* Annual grasses and forbs, whiteleaf manzanita, buckbrush, foothill pine, and scattered Jeffrey pine and incense cedar*Texture of the surface layer:* Very gravelly loam*Percentage of the surface covered by rock fragments:* 10 to 80 percent medium, subangular gravel, 5 to 35 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 15 percent subangular boulders*Depth to a restrictive feature (lithic bedrock):* 20 to 80 inches*Shrink-swell potential:* High (LEP of 6 to 9)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* None*Annual ponding frequency:* None*Water table (zone of saturation):* None observed*Available water capacity:* Low (about 4.3 inches)*Natural drainage class:* Well drained*Surface runoff (bare conditions):* High

*Interpretive groups**Land capability, irrigated: 7e-9**Land capability, nonirrigated: 7e-9**Hydric soil status: Not hydric**Hydrologic soil group: B**Typical profile*

A—0 to 3 inches; very gravelly loam

Bt1—3 to 7 inches; gravelly clay loam

Bt2—7 to 12 inches; very gravelly clay loam

Bt3—12 to 18 inches; gravelly clay

Bt4—18 to 24 inches; very gravelly clay

Btss1—24 to 32 inches; very gravelly clay

Btss2—32 to 42 inches; very gravelly clay

B't5—42 to 54 inches; extremely cobbly clay loam

R—54 inches; bedrock

Characteristics of Earlal Very Gravelly Loam*Slope: 30 to 50 percent**Geomorphic position: Side slopes in canyons and on ultramafic mountains**Parent material: Gravelly colluvium and/or residuum weathered from serpentinite**Observed vegetation: Annual grasses and forbs, whiteleaf manzanita, buckbrush, foothill pine, Jeffrey pine, and ponderosa pine**Texture of the surface layer: Very gravelly loam**Percentage of the surface covered by rock fragments: 20 to 50 percent medium, angular gravel, 20 to 30 percent angular cobbles, 10 to 20 percent angular stones, 5 to 15 percent angular boulders**Depth to a restrictive feature (lithic bedrock): 10 to 20 inches**Shrink-swell potential: High (LEP of 6 to 9)**Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)**Annual flooding frequency: None**Annual ponding frequency: None**Water table (zone of saturation): None observed**Available water capacity: Very low (about 1.2 inches)**Natural drainage class: Well drained**Surface runoff (bare conditions): Very high**Interpretive groups**Land capability, irrigated: 7e-9**Land capability, nonirrigated: 7e-9**Hydric soil status: Not hydric**Hydrologic soil group: D**Typical profile*

A—0 to 3 inches; very gravelly loam

Bt1—3 to 7 inches; very gravelly clay loam

Bt2—7 to 14 inches; extremely gravelly clay loam

R—14 inches; bedrock

Characteristics of Cerpone Gravelly Loam*Slope: 30 to 50 percent**Geomorphic position: Side slopes in canyons and on ultramafic mountains**Parent material: Fine-loamy colluvium derived from ultramafic rocks**Observed vegetation: Jeffrey pine, incense cedar, ponderosa pine, foothill pine, whiteleaf manzanita, California laurel, and buckbrush*

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 10 to 30 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 10 percent subangular stones

Depth to a restrictive feature (lithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.6 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 6e-9

Land capability, nonirrigated: 6e-9

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

Oe—1 to 2 inches; moderately decomposed plant material

A—2 to 4 inches; gravelly loam

Bt1—4 to 9 inches; gravelly loam

Bt2—9 to 17 inches; cobbly loam

Bt3—17 to 26 inches; gravelly clay loam

Bt4—26 to 41 inches; very gravelly silty clay loam

Bt5—41 to 57 inches; very gravelly silty clay loam

R—57 inches; bedrock

Characteristics of Rock Outcrop (Serpentinite)

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons and on ultramafic mountains

Surface runoff (bare conditions): Very high

Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 704

At an elevation of less than 1,600 feet, soils with a thermic soil temperature regime

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons and on ultramafic mountains

Hydric soil status: Not hydric

Griffgulch and similar soils

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons and on metavolcanic mountains

Hydric soil status: Not hydric

Surnuf and similar soils

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons and on metavolcanic mountains

Hydric soil status: Not hydric

Spine taxadjunct and similar soils*Composition:* 2 percent*Slope:* 30 to 50 percent*Geomorphic position:* Side slopes in canyons and on metavolcanic mountains*Hydric soil status:* Not hydric**705—Typic Haploxeralfs, magnesian-Earlal-Cerpone-Rock outcrop complex, 50 to 80 percent slopes*****Map Unit Setting****General location:* Eastern Butte County*Major uses:* Wildlife habitat and watershed*Major land resource area:* 22A*Landscape:* Northern Sierra Nevada Mountains*Elevation:* 895 to 3,395 feet (274 to 1,036 meters)*Mean annual precipitation:* 42 to 65 inches (1,067 to 1,651 millimeters)*Mean annual air temperature:* 55 to 57 degrees F (13 to 14 degrees C)*Frost-free period:* 185 to 250 days***Map Unit Composition***

Typic Haploxeralfs, magnesian, very gravelly loam—35 percent

Earlal very gravelly loam—25 percent

Cerpone gravelly loam—15 percent

Rock outcrop (serpentinite)—15 percent

Minor components—10 percent

Characteristics of Typic Haploxeralfs, Magnesian, Very Gravelly Loam*Slope:* 50 to 80 percent*Geomorphic position:* Backslopes on ultramafic mountains and in canyons*Parent material:* Gravelly and clayey colluvium derived from serpentinite*Observed vegetation:* Annual grasses and forbs, whiteleaf manzanita, buckbrush, foothill pine, and scattered Jeffrey pine and incense cedar*Texture of the surface layer:* Very gravelly loam*Percentage of the surface covered by rock fragments:* 10 to 80 percent medium, subangular gravel, 5 to 35 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 15 percent subangular boulders*Depth to a restrictive feature (lithic bedrock):* 20 to 80 inches*Shrink-swell potential:* High (LEP of 6 to 9)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* None*Annual ponding frequency:* None*Water table (zone of saturation):* None observed*Available water capacity:* Low (about 4.3 inches)*Natural drainage class:* Well drained*Surface runoff (bare conditions):* High***Interpretive groups****Land capability, irrigated:* 7e-9*Land capability, nonirrigated:* 7e-9*Hydric soil status:* Not hydric*Hydrologic soil group:* B

Typical profile

A—0 to 3 inches; very gravelly loam
 Bt1—3 to 7 inches; gravelly clay loam
 Bt2—7 to 12 inches; very gravelly clay loam
 Bt3—12 to 18 inches; gravelly clay
 Bt4—18 to 24 inches; very gravelly clay
 Btss1—24 to 32 inches; very gravelly clay
 Btss2—32 to 42 inches; very gravelly clay
 B't5—42 to 54 inches; extremely cobbly clay loam
 R—54 inches; bedrock

Characteristics of Earlal Very Gravelly Loam

Slope: 50 to 80 percent

Geomorphic position: Backslopes on ultramafic mountains and in canyons

Parent material: Gravelly colluvium derived from serpentinite

Observed vegetation: Annual grasses and forbs, whiteleaf manzanita, buckbrush, foothill pine, Jeffrey pine, and ponderosa pine

Texture of the surface layer: Very gravelly loam

Percentage of the surface covered by rock fragments: 20 to 50 percent medium, angular gravel, 20 to 30 percent angular cobbles, 10 to 20 percent angular stones, 5 to 15 percent angular boulders

Depth to a restrictive feature (lithic bedrock): 10 to 20 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.2 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7e-9

Land capability, nonirrigated: 7e-9

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 3 inches; very gravelly loam
 Bt1—3 to 7 inches; very gravelly clay loam
 Bt2—7 to 14 inches; extremely gravelly clay loam
 R—14 inches; bedrock

Characteristics of Cerpone Gravelly Loam

Slope: 50 to 80 percent

Geomorphic position: Backslopes on ultramafic mountains and in canyons

Parent material: Fine-loamy colluvium derived from ultramafic rocks

Observed vegetation: Jeffrey pine, incense cedar, ponderosa pine, foothill pine, whiteleaf manzanita, California laurel, and buckbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 10 to 30 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 10 percent subangular stones

Depth to a restrictive feature (lithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.6 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 7e-9

Land capability, nonirrigated: 7e-9

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

Oe—1 to 2 inches; moderately decomposed plant material

A—2 to 4 inches; gravelly loam

Bt1—4 to 9 inches; gravelly loam

Bt2—9 to 17 inches; cobbly loam

Bt3—17 to 26 inches; gravelly clay loam

Bt4—26 to 41 inches; very gravelly silty clay loam

Bt5—41 to 57 inches; very gravelly silty clay loam

R—57 inches; bedrock

Characteristics of Rock Outcrop (Serpentinite)

Slope: 50 to 80 percent

Geomorphic position: Backslopes on ultramafic mountains and in canyons

Surface runoff (bare conditions): Very high

Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 705

Spine taxadjunct and similar soils

Composition: 3 percent

Slope: 50 to 80 percent

Geomorphic position: Backslopes on metavolcanic mountains and in canyons

Hydric soil status: Not hydric

At an elevation of less than 1,600 feet, soils with a thermic soil temperature regime

Composition: 3 percent

Slope: 50 to 80 percent

Geomorphic position: Backslopes on ultramafic hills and in canyons

Hydric soil status: Not hydric

Surnuf and similar soils

Composition: 2 percent

Slope: 50 to 80 percent

Geomorphic position: Backslopes on metavolcanic mountains and in canyons

Hydric soil status: Not hydric

Griffgulch and similar soils

Composition: 2 percent

Slope: 50 to 80 percent

Geomorphic position: Backslopes on metavolcanic mountains and in canyons

Hydric soil status: Not hydric

711—Dixmine-Toadtown complex, 3 to 15 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 3,415 to 3,490 feet (1,042 to 1,064 meters)

Mean annual precipitation: 67 inches (1,702 millimeters)

Mean annual air temperature: 55 degrees F (13 degrees C)

Frost-free period: 180 days

Map Unit Composition

Dixmine very gravelly loam—45 percent

Toadtown loam—40 percent

Minor components—15 percent

Characteristics of Dixmine Very Gravelly Loam

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on metavolcanic mountains

Parent material: Gravelly, loamy and clayey residuum weathered from metavolcanic rocks

Observed vegetation: Ponderosa pine, Douglas-fir, white fir, tanoak, sugar pine, California black oak, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 25 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 10 percent subangular stones

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 5.2 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

Oe—1 to 2 inches; moderately decomposed plant material

A—2 to 6 inches; very gravelly loam

Bt1—6 to 11 inches; very gravelly loam

Bt2—11 to 17 inches; gravelly loam

Bt3—17 to 30 inches; very cobbly clay loam

Bt4—30 to 41 inches; very gravelly clay loam
 Bt5—41 to 54 inches; extremely cobbly clay loam
 Cr—54 inches; bedrock

Characteristics of Toadtown Loam

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on metavolcanic mountains

Parent material: Loamy and clayey residuum weathered from metavolcanic rocks

Observed vegetation: Ponderosa pine, Douglas-fir, white fir, tanoak, sugar pine, California black oak, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 35 percent fine, subangular gravel, 0 to 5 percent subangular cobbles

Depth to a restrictive feature (paralithic bedrock): 60 to 120 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very high (about 10.1 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

Oe—2 to 3 inches; moderately decomposed plant material

A—3 to 5 inches; loam

Bt1—5 to 8 inches; loam

Bt2—8 to 13 inches; clay loam

Bt3—13 to 18 inches; clay

Bt4—18 to 27 inches; clay

Bt5—27 to 51 inches; clay loam

Bt6—51 to 65 inches; loam

Bt7—65 to 75 inches; loam

Crt—75 to 79 inches; loam

Minor Components in Map Unit 711

Mac and similar soils

Composition: 5 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on metamorphic mountains

Hydric soil status: Not hydric

Nonskeletal soils that are 40 to 60 inches deep to bedrock

Composition: 4 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on metavolcanic mountains

Hydric soil status: Not hydric

Loamy-skeletal soils that are 40 to 60 inches deep to bedrock*Composition:* 3 percent*Slope:* 3 to 15 percent*Geomorphic position:* Ridgetops on metavolcanic mountains*Hydric soil status:* Not hydric**Powellton and similar soils***Composition:* 3 percent*Slope:* 3 to 15 percent*Geomorphic position:* Ridgetops on metamorphic mountains*Hydric soil status:* Not hydric**712—Dixmine-Toadtown complex, 15 to 30 percent slopes*****Map Unit Setting****General location:* North-central Butte County*Major uses:* Timber production, wildlife habitat, and watershed*Major land resource area:* 22A*Landscape:* Northern Sierra Nevada Mountains*Elevation:* 3,195 to 3,595 feet (975 to 1,097 meters)*Mean annual precipitation:* 62 to 72 inches (1,575 to 1,829 millimeters)*Mean annual air temperature:* 54 to 55 degrees F (12 to 13 degrees C)*Frost-free period:* 155 to 190 days***Map Unit Composition***

Dixmine very gravelly loam—50 percent

Toadtown loam—40 percent

Minor components—10 percent

Characteristics of Dixmine Very Gravelly Loam*Slope:* 15 to 30 percent*Geomorphic position:* Ridgetops and shoulder slopes on metavolcanic mountains*Parent material:* Gravelly, loamy and clayey colluvium and/or residuum weathered from metavolcanic rocks*Observed vegetation:* Ponderosa pine, Douglas-fir, white fir, tanoak, sugar pine, California black oak, and deerbrush*Texture of the surface layer:* Slightly decomposed plant material*Percentage of the surface covered by rock fragments:* 5 to 25 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 10 percent subangular stones*Depth to a restrictive feature (paralithic bedrock):* 40 to 60 inches*Shrink-swell potential:* Moderate (LEP of 3 to less than 6)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* None*Annual ponding frequency:* None*Water table (zone of saturation):* None observed*Available water capacity:* Moderate (about 5.2 inches)*Natural drainage class:* Well drained*Surface runoff (bare conditions):* High***Interpretive groups****Land capability, irrigated:* 4e-1*Land capability, nonirrigated:* 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
 Oe—1 to 2 inches; moderately decomposed plant material
 A—2 to 6 inches; very gravelly loam
 Bt1—6 to 11 inches; very gravelly loam
 Bt2—11 to 17 inches; gravelly loam
 Bt3—17 to 30 inches; very cobbly clay loam
 Bt4—30 to 41 inches; very gravelly clay loam
 Bt5—41 to 54 inches; extremely cobbly clay loam
 Cr—54 inches; bedrock

Characteristics of Toadtown Loam

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and shoulder slopes on metavolcanic mountains

Parent material: Loamy and clayey colluvium and/or residuum weathered from metamorphic rocks

Observed vegetation: Ponderosa pine, Douglas-fir, white fir, tanoak, sugar pine, California black oak, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 35 percent fine, subangular gravel, 0 to 5 percent subangular cobbles

Depth to a restrictive feature (paralithic bedrock): 60 to 120 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very high (about 10.1 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material
 Oe—2 to 3 inches; moderately decomposed plant material
 A—3 to 5 inches; loam
 Bt1—5 to 8 inches; loam
 Bt2—8 to 13 inches; clay loam
 Bt3—13 to 18 inches; clay
 Bt4—18 to 27 inches; clay
 Bt5—27 to 51 inches; clay loam
 Bt6—51 to 65 inches; loam
 Bt7—65 to 75 inches; loam
 Crt—75 to 79 inches; loam

Minor Components in Map Unit 712

Mac and similar soils

Composition: 3 percent

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and shoulder slopes on metamorphic mountains

Hydric soil status: Not hydric

Nonskeletal soils that are 40 to 60 inches deep to bedrock

Composition: 3 percent

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and shoulder slopes on metavolcanic mountains

Hydric soil status: Not hydric

Loamy-skeletal soils that are 40 to 60 inches deep to bedrock

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and shoulder slopes on metavolcanic mountains

Hydric soil status: Not hydric

Powellton and similar soils

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and shoulder slopes on metamorphic mountains

Hydric soil status: Not hydric

713—Dixmine-Toadtown complex, 30 to 50 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 2,995 to 3,595 feet (914 to 1,097 meters)

Mean annual precipitation: 62 to 73 inches (1,575 to 1,854 millimeters)

Mean annual air temperature: 54 to 55 degrees F (12 to 13 degrees C)

Frost-free period: 155 to 190 days

Map Unit Composition

Dixmine very gravelly loam—50 percent

Toadtown loam—35 percent

Minor components—15 percent

Characteristics of Dixmine Very Gravelly Loam

Slope: 30 to 50 percent

Geomorphic position: Backslopes on metavolcanic mountains

Parent material: Gravelly, loamy and clayey residuum and/or colluvium derived from metavolcanic rocks

Observed vegetation: Ponderosa pine, Douglas-fir, white fir, tanoak, sugar pine, California black oak, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 25 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 10 percent subangular stones

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 5.2 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

Oe—1 to 2 inches; moderately decomposed plant material

A—2 to 6 inches; very gravelly loam

Bt1—6 to 11 inches; very gravelly loam

Bt2—11 to 17 inches; gravelly loam

Bt3—17 to 30 inches; very cobbly clay loam

Bt4—30 to 41 inches; very gravelly clay loam

Bt5—41 to 54 inches; extremely cobbly clay loam

Cr—54 inches; bedrock

Characteristics of Toadtown Loam

Slope: 30 to 50 percent

Geomorphic position: Backslopes on metavolcanic mountains

Parent material: Loamy and clayey residuum and/or colluvium derived from
metavolcanic rocks

Observed vegetation: Ponderosa pine, Douglas-fir, white fir, tanoak, sugar pine,
California black oak, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 35 percent fine, subangular
gravel, 0 to 5 percent subangular cobbles

Depth to a restrictive feature (paralithic bedrock): 60 to 120 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very high (about 10.1 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

Oe—2 to 3 inches; moderately decomposed plant material
 A—3 to 5 inches; loam
 Bt1—5 to 8 inches; loam
 Bt2—8 to 13 inches; clay loam
 Bt3—13 to 18 inches; clay
 Bt4—18 to 27 inches; clay
 Bt5—27 to 51 inches; clay loam
 Bt6—51 to 65 inches; loam
 Bt7—65 to 75 inches; loam
 Crt—75 to 79 inches; loam

Minor Components in Map Unit 713

Mac and similar soils

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on metamorphic mountains

Hydric soil status: Not hydric

Loamy-skeletal soils that are 40 to 60 inches deep to bedrock

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on metavolcanic mountains

Hydric soil status: Not hydric

Powellton and similar soils

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on metamorphic mountains

Hydric soil status: Not hydric

Nonskeletal soils that are 40 to 60 inches deep to bedrock

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on metavolcanic mountains

Hydric soil status: Not hydric

Haploxerults, loamy-skeletal, more than 60 inches deep to bedrock, and similar soils

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on metavolcanic mountains

Hydric soil status: Not hydric

Spine and similar soils

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on metamorphic mountains

Hydric soil status: Not hydric

714—Dixmine-Toadtown complex, 50 to 70 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 2,200 to 3,195 feet (671 to 975 meters)

Mean annual precipitation: 62 to 73 inches (1,575 to 1,854 millimeters)

Mean annual air temperature: 54 to 55 degrees F (12 to 13 degrees C)

Frost-free period: 155 to 190 days

Map Unit Composition

Dixmine very gravelly loam—50 percent

Toadtown loam—35 percent

Minor components—15 percent

Characteristics of Dixmine Very Gravelly Loam

Slope: 50 to 70 percent

Geomorphic position: Backslopes on metavolcanic mountains

Parent material: Gravelly, loamy and clayey residuum and/or colluvium derived from metavolcanic rocks

Observed vegetation: Ponderosa pine, Douglas-fir, white fir, tanoak, sugar pine, California black oak, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 25 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 10 percent subangular stones

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 5.2 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

Oe—1 to 2 inches; moderately decomposed plant material

A—2 to 6 inches; very gravelly loam

Bt1—6 to 11 inches; very gravelly loam

Bt2—11 to 17 inches; gravelly loam

Bt3—17 to 30 inches; very cobbly clay loam

Bt4—30 to 41 inches; very gravelly clay loam

Bt5—41 to 54 inches; extremely cobbly clay loam

Cr—54 inches; bedrock

Characteristics of Toadtown Loam

Slope: 50 to 70 percent

Geomorphic position: Backslopes on metavolcanic mountains

Parent material: Loamy and clayey residuum and/or colluvium derived from metavolcanic rocks

Observed vegetation: Ponderosa pine, Douglas-fir, white fir, tanoak, sugar pine, California black oak, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 35 percent fine, subangular gravel, 0 to 5 percent subangular cobbles

Depth to a restrictive feature (paralithic bedrock): 60 to 120 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very high (about 10.1 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

Oe—2 to 3 inches; moderately decomposed plant material

A—3 to 5 inches; loam

Bt1—5 to 8 inches; loam

Bt2—8 to 13 inches; clay loam

Bt3—13 to 18 inches; clay

Bt4—18 to 27 inches; clay

Bt5—27 to 51 inches; clay loam

Bt6—51 to 65 inches; loam

Bt7—65 to 75 inches; loam

Crt—75 to 79 inches; loam

Minor Components in Map Unit 714

Mac and similar soils

Composition: 3 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on metamorphic mountains

Hydric soil status: Not hydric

Haploxerults, loamy-skeletal, more than 60 inches deep to bedrock, and similar soils

Composition: 3 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on metavolcanic mountains

Hydric soil status: Not hydric

Loamy-skeletal soils that are 40 to 60 inches deep to bedrock

Composition: 2 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on metavolcanic mountains

Hydric soil status: Not hydric

Nonskeletal soils that are 40 to 60 inches deep to bedrock

Composition: 2 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on metavolcanic mountains

Hydric soil status: Not hydric

Powellton and similar soils

Composition: 2 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on metamorphic mountains

Hydric soil status: Not hydric

Spine and similar soils

Composition: 2 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on metamorphic mountains

Hydric soil status: Not hydric

Rock outcrop

Composition: 1 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on metavolcanic mountains

Hydric soil status: Not hydric

715—Logtrain-Bottlehill-Walkermine complex, 70 to 110 percent slopes

Map Unit Setting

General location: Northeastern Butte County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 1,895 to 3,395 feet (579 to 1,036 meters)

Mean annual precipitation: 67 to 72 inches (1,702 to 1,829 millimeters)

Mean annual air temperature: 52 to 54 degrees F (11 to 12 degrees C)

Frost-free period: 145 to 175 days

Map Unit Composition

Logtrain gravelly loam—40 percent

Bottlehill very gravelly loam—30 percent

Walkermine very gravelly loam—20 percent

Minor components—10 percent

Characteristics of Logtrain Gravelly Loam

Slope: 70 to 110 percent

Geomorphic position: Backslopes in canyons

Parent material: Gravelly colluvium derived from metamorphic rocks

Observed vegetation: Douglas-fir, tanoak, ponderosa pine, California black oak, canyon live oak, incense cedar, bigleaf maple, and dogwood

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 50 percent medium, subangular gravel, 0 to 30 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 10 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 5.0 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
 A—1 to 3 inches; gravelly loam
 Bt1—3 to 9 inches; very gravelly loam
 Bt2—9 to 21 inches; very gravelly loam
 Bt3—21 to 38 inches; very cobbly loam
 Bt4—38 to 54 inches; extremely gravelly loam
 R—54 inches; bedrock

Characteristics of Bottlehill Very Gravelly Loam

Slope: 70 to 110 percent

Geomorphic position: Backslopes in canyons

Parent material: Gravelly and loamy colluvium derived from metamorphic rocks

Observed vegetation: Douglas-fir, tanoak, ponderosa pine, California black oak, canyon live oak, incense cedar, bigleaf maple, and dogwood

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 35 to 75 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 2.1 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material
 Oe—0.5 inch to 2 inches; moderately decomposed plant material
 A1—2 to 4 inches; very gravelly loam
 A2—4 to 9 inches; very gravelly loam
 Bt1—9 to 13 inches; very gravelly loam
 Bt2—13 to 22 inches; very gravelly loam
 Bt3—22 to 33 inches; extremely gravelly clay loam
 R—33 inches; bedrock

Characteristics of Walkermine Very Gravelly Loam

Slope: 70 to 110 percent

Geomorphic position: Backslopes in canyons

Parent material: Gravelly and loamy colluvium derived from metamorphic rocks

Observed vegetation: Douglas-fir, tanoak, ponderosa pine, California black oak, canyon live oak, incense cedar, and bigleaf maple

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 15 to 75 percent coarse, subangular gravel, 0 to 30 percent subangular cobbles, 0 to 30 percent subangular stones, 0 to 30 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 4 to 20 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 0.7 inch)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; very gravelly loam

Bt—3 to 12 inches; very gravelly loam

R—12 inches; bedrock

Minor Components in Map Unit 715

Rock outcrop

Composition: 3 percent

Slope: 70 to 110 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Haploxerults with bedrock at a depth of more than 60 inches and similar soils

Composition: 3 percent

Slope: 70 to 110 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Scree

Composition: 2 percent

Slope: 70 to 110 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Soils that are 20 to 60 inches deep to paralithic bedrock

Composition: 2 percent

Slope: 70 to 110 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

716—Griffgulch-Surnuf complex, 3 to 15 percent slopes

Map Unit Setting

General location: East-central Butte County

Major uses: Timber production, homesite development, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 2,280 to 3,195 feet (695 to 975 meters)

Mean annual precipitation: 53 to 62 inches (1,346 to 1,575 millimeters)

Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)

Frost-free period: 180 to 240 days

Map Unit Composition

Griffgulch very gravelly silt loam—40 percent

Surnuf gravelly loam—40 percent

Minor components—20 percent

Characteristics of Griffgulch Very Gravelly Silt Loam

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on metavolcanic mountains

Parent material: Cobbly, silty and clayey residuum weathered from metavolcanic rocks

Observed vegetation: Ponderosa pine, whiteleaf manzanita, California black oak, tanoak, Douglas-fir, Pacific poison oak, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 10 to 30 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 40 to 60 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.4 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

Oe—2 to 3 inches; moderately decomposed plant material

A—3 to 7 inches; very gravelly silt loam

Bt1—7 to 11 inches; very cobbly silty clay loam

Bt2—11 to 20 inches; extremely cobbly silty clay loam

Bt3—20 to 33 inches; very cobbly silty clay

Bt4—33 to 47 inches; very cobbly clay

Bt5—47 to 58 inches; extremely gravelly clay

R—58 inches; bedrock

Characteristics of Surnuf Gravelly Loam

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on metavolcanic mountains

Parent material: Silty and clayey residuum weathered from metavolcanic rocks

Observed vegetation: Ponderosa pine, whiteleaf manzanita, California black oak, tanoak, Douglas-fir, Pacific poison oak, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 30 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 2 percent subangular stones, 0 to 2 percent subangular boulders

Restrictive feature: None identified

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 7.5 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 4 inches; gravelly loam

Bt1—4 to 9 inches; gravelly clay loam

Bt2—9 to 16 inches; gravelly clay loam

Bt3—16 to 27 inches; gravelly clay

Bt4—27 to 29 inches; gravelly clay

Bt5—29 to 56 inches; gravelly silty clay

Bt6—56 to 72 inches; silty clay

Minor Components in Map Unit 716

Ultic Haploxeralfs, fine-loamy, more than 60 inches deep to bedrock, and similar soils

Composition: 7 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on metavolcanic mountains

Hydric soil status: Not hydric

Ultic Haploxeralfs, loamy-skeletal, and similar soils

Composition: 6 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on metavolcanic mountains

Hydric soil status: Not hydric

Minniecreek and similar soils

Composition: 2 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on metavolcanic mountains

Hydric soil status: Not hydric

Spine taxadjunct and similar soils*Composition:* 2 percent*Slope:* 3 to 15 percent*Geomorphic position:* Ridgetops on metavolcanic mountains*Hydric soil status:* Not hydric**Soils that are less than 10 inches deep to bedrock***Composition:* 2 percent*Slope:* 3 to 15 percent*Geomorphic position:* Ridgetops on metavolcanic mountains*Hydric soil status:* Not hydric**Rock outcrop***Composition:* 1 percent*Slope:* 3 to 15 percent*Geomorphic position:* Ridgetops on metavolcanic mountains*Hydric soil status:* Not hydric**717—Griffgulch-Surnuf complex, 15 to 30 percent slopes*****Map Unit Setting****General location:* East-central Butte County*Major uses:* Timber production, wildlife habitat, and watershed*Major land resource area:* 22A*Landscape:* Northern Sierra Nevada Mountains*Elevation:* 1,200 to 3,355 feet (366 to 1,024 meters)*Mean annual precipitation:* 53 to 62 inches (1,346 to 1,575 millimeters)*Mean annual air temperature:* 55 to 57 degrees F (13 to 14 degrees C)*Frost-free period:* 180 to 240 days***Map Unit Composition***

Griffgulch very gravelly silt loam—40 percent

Surnuf gravelly loam—40 percent

Minor components—20 percent

Characteristics of Griffgulch Very Gravelly Silt Loam*Slope:* 15 to 30 percent*Geomorphic position:* Ridgetops and side slopes on metavolcanic mountains*Parent material:* Cobbly, silty and clayey colluvium and/or residuum weathered from metavolcanic rocks*Observed vegetation:* Ponderosa pine, whiteleaf manzanita, California black oak, tanoak, Douglas-fir, Pacific poison oak, and deerbrush*Texture of the surface layer:* Slightly decomposed plant material*Percentage of the surface covered by rock fragments:* 10 to 30 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders*Depth to a restrictive feature (lithic bedrock):* 40 to 60 inches*Shrink-swell potential:* High (LEP of 6 to 9)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* None*Annual ponding frequency:* None*Water table (zone of saturation):* None observed*Available water capacity:* Low (about 4.4 inches)

Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material
 Oe—2 to 3 inches; moderately decomposed plant material
 A—3 to 7 inches; very gravelly silt loam
 Bt1—7 to 11 inches; very cobbly silty clay loam
 Bt2—11 to 20 inches; extremely cobbly silty clay loam
 Bt3—20 to 33 inches; very cobbly silty clay
 Bt4—33 to 47 inches; very cobbly clay
 Bt5—47 to 58 inches; extremely gravelly clay
 R—58 inches; bedrock

Characteristics of Surnuf Gravelly Loam

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and side slopes on metavolcanic mountains

Parent material: Silty and clayey colluvium and/or residuum weathered from
 metavolcanic rocks

Observed vegetation: Ponderosa pine, whiteleaf manzanita, California black oak,
 tanoak, Douglas-fir, Pacific poison oak, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 30 percent medium,
 subangular gravel, 0 to 10 percent subangular cobbles, 0 to 2 percent subangular
 stones, 0 to 2 percent subangular boulders

Restrictive feature: None identified

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 7.5 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
 A—1 to 4 inches; gravelly loam
 Bt1—4 to 9 inches; gravelly clay loam
 Bt2—9 to 16 inches; gravelly clay loam
 Bt3—16 to 27 inches; gravelly clay
 Bt4—27 to 29 inches; gravelly clay
 Bt5—29 to 56 inches; gravelly silty clay
 Bt6—56 to 72 inches; silty clay

Minor Components in Map Unit 717

Ultic Haploxeralfs, fine-loamy, more than 60 inches deep to bedrock, and similar soils

Composition: 7 percent

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and side slopes on metavolcanic mountains

Hydric soil status: Not hydric

Ultic Haploxeralfs, loamy-skeletal, and similar soils

Composition: 6 percent

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and side slopes on metavolcanic mountains

Hydric soil status: Not hydric

Minniecreek and similar soils

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and side slopes on metavolcanic mountains

Hydric soil status: Not hydric

Spine taxadjunct and similar soils

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and side slopes on metavolcanic mountains

Hydric soil status: Not hydric

Soils that are less than 10 inches deep to bedrock

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and side slopes on metavolcanic mountains

Hydric soil status: Not hydric

Rock outcrop

Composition: 1 percent

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and side slopes on metavolcanic mountains

Hydric soil status: Not hydric

718—Griffgulch-Surnuf-Spine taxadjunct complex, 30 to 50 percent slopes

Map Unit Setting

General location: East-central Butte County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 915 to 3,595 feet (280 to 1,097 meters)

Mean annual precipitation: 46 to 65 inches (1,168 to 1,651 millimeters)

Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)

Frost-free period: 180 to 240 days

Map Unit Composition

Griffgulch very gravelly silt loam—35 percent

Surnuf gravelly loam—35 percent

Spine taxadjunct very cobbly loam—15 percent

Minor components—15 percent

Characteristics of Griffgulch Very Gravelly Silt Loam

Slope: 30 to 50 percent

Geomorphic position: Backslopes in canyons and on metavolcanic mountains

Parent material: Cobbly, silty and clayey colluvium and/or residuum weathered from metavolcanic rocks

Observed vegetation: Ponderosa pine, whiteleaf manzanita, canyon live oak, California black oak, tanoak, Douglas-fir, Pacific poison oak, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 10 to 30 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 40 to 60 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.4 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

Oe—2 to 3 inches; moderately decomposed plant material

A—3 to 7 inches; very gravelly silt loam

Bt1—7 to 11 inches; very cobbly silty clay loam

Bt2—11 to 20 inches; extremely cobbly silty clay loam

Bt3—20 to 33 inches; very cobbly silty clay

Bt4—33 to 47 inches; very cobbly clay

Bt5—47 to 58 inches; extremely gravelly clay

R—58 inches; bedrock

Characteristics of Surnuf Gravelly Loam

Slope: 30 to 50 percent

Geomorphic position: Backslopes in canyons and on metavolcanic mountains

Parent material: Silty and clayey colluvium and/or residuum weathered from metavolcanic rocks

Observed vegetation: Ponderosa pine, whiteleaf manzanita, canyon live oak, California black oak, tanoak, Douglas-fir, Pacific poison oak, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 30 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 2 percent subangular stones, 0 to 2 percent subangular boulders

Restrictive feature: None identified

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 7.5 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
 A—1 to 4 inches; gravelly loam
 Bt1—4 to 9 inches; gravelly clay loam
 Bt2—9 to 16 inches; gravelly clay loam
 Bt3—16 to 27 inches; gravelly clay
 Bt4—27 to 29 inches; gravelly clay
 Bt5—29 to 56 inches; gravelly silty clay
 Bt6—56 to 72 inches; silty clay

Characteristics of Spine Taxadjunct Very Cobbly Loam

Slope: 30 to 50 percent

Geomorphic position: Backslopes in canyons and on metavolcanic mountains

Parent material: Cobbly and loamy residuum weathered from metavolcanic rocks

Observed vegetation: Ponderosa pine, canyon live oak, whiteleaf manzanita, California black oak, tanoak, Douglas-fir, Pacific poison oak, and deerbrush

Texture of the surface layer: Very cobbly loam

Percentage of the surface covered by rock fragments: 25 to 80 percent medium, subangular gravel, 5 to 30 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 20 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 10 to 20 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.5 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7e-8
Land capability, nonirrigated: 7e-8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile

A—0 to 2 inches; very cobbly loam
 Bt—2 to 15 inches; very cobbly clay loam
 R—15 inches; bedrock

Minor Components in Map Unit 718

Ultic Haploxeralfs, fine-loamy, more than 60 inches deep to bedrock, and similar soils

Composition: 5 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes in canyons and on metavolcanic mountains

Hydric soil status: Not hydric

Ultic Haploxeralfs, loamy-skeletal, and similar soils

Composition: 5 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes in canyons and on metavolcanic mountains

Hydric soil status: Not hydric

Minniecreek and similar soils

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes in canyons and on metavolcanic mountains

Hydric soil status: Not hydric

Soils that are less than 10 inches deep to bedrock

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes in canyons and on metavolcanic mountains

Hydric soil status: Not hydric

Rock outcrop

Composition: 1 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes in canyons and on metavolcanic mountains

Hydric soil status: Not hydric

719—Griffgulch-Surnuf-Spine taxadjunct complex, 50 to 70 percent slopes

Map Unit Setting

General location: East-central Butte County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 960 to 2,995 feet (293 to 914 meters)

Mean annual precipitation: 45 to 62 inches (1,143 to 1,575 millimeters)

Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)

Frost-free period: 180 to 240 days

Map Unit Composition

Griffgulch very gravelly silt loam—35 percent

Surnuf gravelly loam—30 percent

Spine taxadjunct very cobbly loam—20 percent

Minor components—15 percent

Characteristics of Griffgulch Very Gravelly Silt Loam

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Parent material: Cobbly, silty and clayey colluvium derived from metavolcanic rocks

Observed vegetation: Canyon live oak, scrub oak, tanoak, California laurel, California black oak, Douglas-fir, ponderosa pine, foothill pine, Pacific poison oak, and whiteleaf manzanita

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 10 to 30 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 40 to 60 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.4 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

Oe—2 to 3 inches; moderately decomposed plant material

A—3 to 7 inches; very gravelly silt loam

Bt1—7 to 11 inches; very cobbly silty clay loam

Bt2—11 to 20 inches; extremely cobbly silty clay loam

Bt3—20 to 33 inches; very cobbly silty clay

Bt4—33 to 47 inches; very cobbly clay

Bt5—47 to 58 inches; extremely gravelly clay

R—58 inches; bedrock

Characteristics of Surnuf Gravelly Loam

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Parent material: Silty and clayey colluvium derived from metavolcanic rocks

Observed vegetation: Canyon live oak, scrub oak, tanoak, California laurel, California black oak, Douglas-fir, ponderosa pine, foothill pine, Pacific poison oak, and whiteleaf manzanita

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 30 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 2 percent subangular stones, 0 to 2 percent subangular boulders

Restrictive feature: None identified

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 7.5 inches)

Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
 A—1 to 4 inches; gravelly loam
 Bt1—4 to 9 inches; gravelly clay loam
 Bt2—9 to 16 inches; gravelly clay loam
 Bt3—16 to 27 inches; gravelly clay
 Bt4—27 to 29 inches; gravelly clay
 Bt5—29 to 56 inches; gravelly silty clay
 Bt6—56 to 72 inches; silty clay

Characteristics of Spine Taxadjunct Very Cobbly Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Parent material: Cobbly and loamy residuum weathered from metavolcanic rocks
Observed vegetation: Canyon live oak, scrub oak, tanoak, California laurel, California black oak, Douglas-fir, ponderosa pine, foothill pine, Pacific poison oak, and whiteleaf manzanita
Texture of the surface layer: Very cobbly loam
Percentage of the surface covered by rock fragments: 25 to 80 percent medium, subangular gravel, 5 to 30 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 20 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 10 to 20 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)
Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.5 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7e-8
Land capability, nonirrigated: 7e-8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile

A—0 to 2 inches; very cobbly loam
 Bt—2 to 15 inches; very cobbly clay loam
 R—15 inches; bedrock

Minor Components in Map Unit 719

Rock outcrop

Composition: 4 percent
Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Ultic Haploxeralfs, fine-loamy, more than 60 inches deep to bedrock, and similar soils

Composition: 3 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Ultic Haploxeralfs, loamy-skeletal, and similar soils

Composition: 3 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Soils that are less than 10 inches deep to bedrock

Composition: 3 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Minniecreek and similar soils

Composition: 2 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

**720—Dystroxerepts-Haploxeralfs-Rock outcrop complex,
70 to 110 percent slopes**

Map Unit Setting

General location: North-central Butte County

Major uses: Wildlife habitat and watershed

Major land resource area: 18

Landscape: Northern Sierra Nevada foothills

Elevation: 675 to 2,595 feet (207 to 792 meters)

Mean annual precipitation: 40 to 67 inches (1,016 to 1,702 millimeters)

Mean annual air temperature: 54 to 61 degrees F (12 to 16 degrees C)

Frost-free period: 185 to 260 days

Map Unit Composition

Dystroxerepts extremely gravelly loam—40 percent

Haploxeralfs very gravelly loam—30 percent

Rock outcrop (metavolcanic)—15 percent

Minor components—15 percent

Characteristics of Dystroxerepts Extremely Gravelly Loam

Slope: 70 to 110 percent

Geomorphic position: Backslopes in canyons

Parent material: Gravelly and loamy colluvium derived from metamorphic rocks

Observed vegetation: Canyon live oak, scrub oak, foothill pine, California laurel, whiteleaf manzanita, buckbrush, toyon, Pacific poison oak, blue oak, interior live oak, and scattered Douglas-fir and ponderosa pine

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 10 to 50 percent angular gravel, 10 to 30 percent angular cobbles, 10 to 30 percent angular stones, 0 to 30 percent angular boulders

Depth to a restrictive feature (lithic bedrock): 20 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 2.3 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 4 inches; extremely gravelly loam

Bt1—4 to 12 inches; extremely gravelly clay loam

Bt2—12 to 22 inches; extremely gravelly clay loam

Bt3—22 to 28 inches; extremely gravelly loam

Bt4—28 to 38 inches; extremely cobbly sandy clay loam

R—38 inches; bedrock

Characteristics of Haploxeralfs Very Gravelly Loam

Slope: 70 to 110 percent

Geomorphic position: Backslopes in canyons

Parent material: Gravelly and loamy colluvium derived from metamorphic rocks

Observed vegetation: Canyon live oak, scrub oak, foothill pine, California laurel, whiteleaf manzanita, buckbrush, toyon, Pacific poison oak, blue oak, interior live oak, and scattered Douglas-fir and ponderosa pine

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 15 to 50 percent coarse, subangular gravel, 5 to 25 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 20 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 20 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 2.4 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material
 A—0.5 inch to 4 inches; very gravelly loam
 Bt1—4 to 9 inches; very gravelly clay loam
 Bt2—9 to 13 inches; very gravelly clay loam
 Bt3—13 to 22 inches; extremely gravelly clay loam
 Bt4—22 to 31 inches; extremely gravelly clay loam
 Bt5—31 to 47 inches; extremely gravelly clay loam
 R—47 inches; bedrock

Characteristics of Rock Outcrop (Metavolcanic)

Slope: 70 to 110 percent

Geomorphic position: Backslopes in canyons

Surface runoff (bare conditions): Very high

Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 720**Soils that are less than 20 inches deep to lithic bedrock**

Composition: 7 percent

Slope: 70 to 110 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Griffgulch and similar soils

Composition: 3 percent

Slope: 70 to 110 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Mounthope and similar soils

Composition: 3 percent

Slope: 70 to 110 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Surnuf and similar soils

Composition: 1 percent

Slope: 70 to 110 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Typic Haploxeralfs, magnesian, and similar soils

Composition: 1 percent

Slope: 70 to 110 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

721—Haploxerands, granitic till, 2 to 15 percent slopes**Map Unit Setting**

General location: Northeastern Butte County and western Plumas County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 4,700 to 5,800 feet (1,433 to 1,768 meters)

Mean annual precipitation: 80 to 90 inches (2,032 to 2,286 millimeters)

Mean annual air temperature: 48 to 50 degrees F (9 to 10 degrees C)

Frost-free period: 80 to 100 days

Map Unit Composition

Haploxerands, granitic till, medial sandy loam—70 percent

Minor components—30 percent

Characteristics of Haploxerands, Granitic Till, Medial Sandy Loam

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and footslopes on moraines

Parent material: Bouldery and sandy till derived from igneous rocks

Observed vegetation: White fir, ponderosa pine, sugar pine, incense cedar, California red fir, California black oak, Sierra chinquapin, greenleaf manzanita, and whitethorn ceanothus

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 15 to 40 percent medium, subangular gravel, 5 to 40 percent subangular cobbles, 5 to 60 percent subangular stones, 5 to 60 percent subangular boulders

Depth to a restrictive feature (dense glacial till): 20 to 98 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 3.8 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: A

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A1—2 to 5 inches; medial sandy loam

A2—5 to 12 inches; medial sandy loam

AB—12 to 22 inches; stony medial sandy loam

2Bw1—22 to 41 inches; stony coarse sandy loam

2Bw2—41 to 55 inches; extremely bouldery coarse sandy loam

2Bw3—55 to 74 inches; extremely cobbly loamy coarse sand

2Bw4—74 to 87 inches; extremely bouldery loamy coarse sand

Minor Components in Map Unit 721

Haploxerands, volcanic till, and similar soils

Composition: 10 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and footslopes on moraines

Hydric soil status: Not hydric

Soils that are 20 to 60 inches deep to bedrock

Composition: 10 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and footslopes on moraines

Hydric soil status: Not hydric

Haploxerands and similar soils

Composition: 5 percent

Slope: 2 to 15 percent

Geomorphic position: Outwash terraces

Hydric soil status: Not hydric

Aquic Xerofluvents and similar soils

Composition: 3 percent

Slope: 0 to 3 percent

Geomorphic position: Meadows in mountain valleys

Hydric soil status: Hydric

Rock outcrop

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and footslopes on mountains

Hydric soil status: Not hydric

722—Haploxerands, granitic till, 15 to 30 percent slopes

Map Unit Setting

General location: Northeastern Butte County and western Plumas County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 3,900 to 5,600 feet (1,189 to 1,707 meters)

Mean annual precipitation: 80 to 90 inches (2,032 to 2,286 millimeters)

Mean annual air temperature: 48 to 50 degrees F (9 to 10 degrees C)

Frost-free period: 80 to 100 days

Map Unit Composition

Haploxerands, granitic till, medial sandy loam—70 percent

Minor components—30 percent

Characteristics of Haploxerands, Granitic Till, Medial Sandy Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes on moraines

Parent material: Bouldery and sandy till derived from igneous rocks

Observed vegetation: White fir, ponderosa pine, sugar pine, incense cedar, California red fir, California black oak, Sierra chinquapin, greenleaf manzanita, and whitethorn ceanothus

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 15 to 40 percent medium, subangular gravel, 5 to 40 percent subangular cobbles, 5 to 60 percent subangular stones, 5 to 60 percent subangular boulders

Depth to a restrictive feature (dense glacial till): 20 to 98 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 3.8 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: A

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A1—2 to 5 inches; medial sandy loam

A2—5 to 12 inches; medial sandy loam

AB—12 to 22 inches; stony medial sandy loam

2Bw1—22 to 41 inches; stony coarse sandy loam

2Bw2—41 to 55 inches; extremely bouldery coarse sandy loam

2Bw3—55 to 74 inches; extremely cobbly loamy coarse sand

2Bw4—74 to 87 inches; extremely bouldery loamy coarse sand

Minor Components in Map Unit 722

Soils that are 20 to 60 inches deep to bedrock

Composition: 11 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on moraines

Hydric soil status: Not hydric

Haploxerands, volcanic till, and similar soils

Composition: 10 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on moraines

Hydric soil status: Not hydric

Rock outcrop

Composition: 5 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on mountains

Hydric soil status: Not hydric

Haploxerands and similar soils

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: Outwash terraces

Hydric soil status: Not hydric

Aquic Xerofluvents and similar soils

Composition: 2 percent

Slope: 0 to 3 percent

Geomorphic position: Meadows in mountain valleys

Hydric soil status: Hydric

723—Haploxerands, granitic till, 30 to 50 percent slopes

Map Unit Setting

General location: Northeastern Butte County and western Plumas County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 3,995 to 5,800 feet (1,219 to 1,768 meters)

Mean annual precipitation: 80 to 90 inches (2,032 to 2,286 millimeters)

Mean annual air temperature: 48 to 50 degrees F (9 to 10 degrees C)

Frost-free period: 80 to 100 days

Map Unit Composition

Haploxerands, granitic till, medial sandy loam—70 percent

Minor components—30 percent

Characteristics of Haploxerands, Granitic Till, Medial Sandy Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes on moraines

Parent material: Bouldery and sandy till derived from igneous rocks

Observed vegetation: White fir, ponderosa pine, sugar pine, incense cedar, California red fir, California black oak, Sierra chinquapin, greenleaf manzanita, and whitethorn ceanothus

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 15 to 40 percent medium, subangular gravel, 5 to 40 percent subangular cobbles, 5 to 60 percent subangular stones, 5 to 60 percent subangular boulders

Depth to a restrictive feature (dense glacial till): 20 to 98 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 3.8 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: A

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A1—2 to 5 inches; medial sandy loam

A2—5 to 12 inches; medial sandy loam

AB—12 to 22 inches; stony medial sandy loam

2Bw1—22 to 41 inches; stony coarse sandy loam

2Bw2—41 to 55 inches; extremely bouldery coarse sandy loam

2Bw3—55 to 74 inches; extremely cobbly loamy coarse sand

2Bw4—74 to 87 inches; extremely bouldery loamy coarse sand

Minor Components in Map Unit 723

Soils that are 20 to 60 inches deep to bedrock

Composition: 12 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on moraines

Hydric soil status: Not hydric

Haploxerands, volcanic till, and similar soils*Composition:* 11 percent*Slope:* 30 to 50 percent*Geomorphic position:* Side slopes on moraines*Hydric soil status:* Not hydric**Rock outcrop***Composition:* 7 percent*Slope:* 30 to 50 percent*Geomorphic position:* Side slopes on mountains*Hydric soil status:* Not hydric**724—Haploxerands, volcanic till, 2 to 15 percent slopes*****Map Unit Setting****General location:* Northeastern Butte County and western Plumas County*Major uses:* Timber production, wildlife habitat, and watershed*Major land resource area:* 22A*Landscape:* Northern Sierra Nevada and Southern Cascade Mountains*Elevation:* 4,235 to 5,600 feet (1,292 to 1,707 meters)*Mean annual precipitation:* 80 to 90 inches (2,032 to 2,286 millimeters)*Mean annual air temperature:* 48 to 50 degrees F (9 to 10 degrees C)*Frost-free period:* 80 to 100 days***Map Unit Composition***

Haploxerands, volcanic till, cobbly medial sandy loam—75 percent

Minor components—25 percent

Characteristics of Haploxerands, Volcanic Till, Cobbly Medial Sandy Loam*Slope:* 2 to 15 percent*Geomorphic position:* Ridgetops on moraines*Parent material:* Bouldery and loamy till derived from igneous rocks*Observed vegetation:* White fir, ponderosa pine, sugar pine, incense cedar, California red fir, California black oak, Sierra chinquapin, greenleaf manzanita, and whitethorn ceanothus*Texture of the surface layer:* Slightly decomposed plant material*Percentage of the surface covered by rock fragments:* 15 to 40 percent medium, subangular gravel, 5 to 40 percent subangular cobbles, 5 to 60 percent subangular stones, 5 to 60 percent subangular boulders*Depth to a restrictive feature (dense glacial till):* 20 to 98 inches*Shrink-swell potential:* Low (LEP of less than 3)*Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)**Annual flooding frequency:* None*Annual ponding frequency:* None*Water table (zone of saturation):* None observed*Available water capacity:* Low (about 3.5 inches)*Natural drainage class:* Well drained*Surface runoff (bare conditions):* Low***Interpretive groups****Land capability, irrigated:* 3e-1*Land capability, nonirrigated:* 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 4 inches; cobbly medial sandy loam

Bw—4 to 17 inches; cobbly medial sandy loam

Bt1—17 to 37 inches; gravelly sandy loam

Bt2—37 to 41 inches; gravelly sandy loam

2Cd1—41 to 52 inches; gravelly, dense glacial till

2Cd2—52 to 80 inches; gravelly, dense glacial till

Minor Components in Map Unit 724

Soils that are 20 to 60 inches deep to bedrock

Composition: 10 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on moraines

Hydric soil status: Not hydric

Haploxerands, granitic till, and similar soils

Composition: 7 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on moraines

Hydric soil status: Not hydric

Rock outcrop

Composition: 4 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on mountains

Hydric soil status: Not hydric

Haploxerands and similar soils

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: Outwash terraces

Hydric soil status: Not hydric

Aquic Xerofluvents and similar soils

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Meadows in mountain valleys

Hydric soil status: Hydric

725—Haploxerands, volcanic till, 15 to 30 percent slopes

Map Unit Setting

General location: Northeastern Butte County and western Plumas County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada and Southern Cascade Mountains

Elevation: 4,235 to 5,695 feet (1,292 to 1,737 meters)

Mean annual precipitation: 80 to 90 inches (2,032 to 2,286 millimeters)

Mean annual air temperature: 48 to 50 degrees F (9 to 10 degrees C)

Frost-free period: 80 to 100 days

Map Unit Composition

Haploxerands, volcanic till, cobbly medial sandy loam—75 percent
 Minor components—25 percent

Characteristics of Haploxerands, Volcanic Till, Cobbly Medial Sandy Loam

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and side slopes on moraines

Parent material: Bouldery and loamy till derived from igneous rocks

Observed vegetation: White fir, ponderosa pine, sugar pine, incense cedar, California red fir, California black oak, Sierra chinquapin, greenleaf manzanita, and whitethorn ceanothus

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 15 to 40 percent medium, subangular gravel, 5 to 40 percent subangular cobbles, 5 to 60 percent subangular stones, 5 to 60 percent subangular boulders

Depth to a restrictive feature (dense glacial till): 20 to 98 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 3.5 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 4 inches; cobbly medial sandy loam

Bw—4 to 17 inches; cobbly medial sandy loam

Bt1—17 to 37 inches; gravelly sandy loam

Bt2—37 to 41 inches; gravelly sandy loam

2Cd1—41 to 52 inches; gravelly, dense glacial till

2Cd2—52 to 80 inches; gravelly, dense glacial till

Minor Components in Map Unit 725

Soils that are 20 to 60 inches deep to bedrock

Composition: 10 percent

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and side slopes on moraines

Hydric soil status: Not hydric

Haploxerands, granitic till, and similar soils

Composition: 7 percent

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and side slopes on moraines

Hydric soil status: Not hydric

Rock outcrop*Composition:* 6 percent*Slope:* 15 to 30 percent*Geomorphic position:* Ridgetops and side slopes on mountains*Hydric soil status:* Not hydric**Haploxerands and similar soils***Composition:* 1 percent*Slope:* 2 to 15 percent*Geomorphic position:* Outwash terraces*Hydric soil status:* Not hydric**Aquic Xerofluvents and similar soils***Composition:* 1 percent*Slope:* 0 to 2 percent*Geomorphic position:* Meadows in mountain valleys*Hydric soil status:* Hydric**726—Haploxerands, volcanic till, 30 to 50 percent slopes*****Map Unit Setting****General location:* Northeastern Butte County and western Plumas County*Major uses:* Timber production, wildlife habitat, and watershed*Major land resource area:* 22A*Landscape:* Northern Sierra Nevada and Southern Cascade Mountains*Elevation:* 4,235 to 5,400 feet (1,292 to 1,646 meters)*Mean annual precipitation:* 80 to 90 inches (2,032 to 2,286 millimeters)*Mean annual air temperature:* 48 to 50 degrees F (9 to 10 degrees C)*Frost-free period:* 80 to 100 days***Map Unit Composition***

Haploxerands, volcanic till, cobbly medial sandy loam—75 percent

Minor components—25 percent

Characteristics of Haploxerands, Volcanic Till, Cobbly Medial Sandy Loam*Slope:* 30 to 50 percent*Geomorphic position:* Side slopes on moraines*Parent material:* Bouldery and loamy till derived from igneous rocks*Observed vegetation:* White fir, ponderosa pine, sugar pine, incense cedar, California red fir, California black oak, Sierra chinquapin, greenleaf manzanita, and whitethorn ceanothus*Texture of the surface layer:* Slightly decomposed plant material*Percentage of the surface covered by rock fragments:* 15 to 40 percent medium, subangular gravel, 5 to 40 percent subangular cobbles, 5 to 60 percent subangular stones, 5 to 60 percent subangular boulders

Depth to a restrictive feature (dense glacial till): 20 to 98 inches

Shrink-swell potential: Low (LEP of less than 3)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* None*Annual ponding frequency:* None*Water table (zone of saturation):* None observed*Available water capacity:* Low (about 3.5 inches)

Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material
 A—2 to 4 inches; cobbly medial sandy loam
 Bw—4 to 17 inches; cobbly medial sandy loam
 Bt1—17 to 37 inches; gravelly sandy loam
 Bt2—37 to 41 inches; gravelly sandy loam
 2Cd1—41 to 52 inches; gravelly, dense glacial till
 2Cd2—52 to 80 inches; gravelly, dense glacial till

Minor Components in Map Unit 726

Soils that are 20 to 60 inches deep to bedrock

Composition: 12 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on moraines
Hydric soil status: Not hydric

Rock outcrop

Composition: 8 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on mountains
Hydric soil status: Not hydric

Haploxerands, granitic till, and similar soils

Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on moraines
Hydric soil status: Not hydric

Beecee and similar soils

Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on volcanic ridges
Hydric soil status: Not hydric

727—Bonneyridge sandy loam, 1 to 15 percent slopes

Map Unit Setting

General location: Northeastern Butte County and western Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,670 to 4,665 feet (1,119 to 1,423 meters)
Mean annual precipitation: 70 to 80 inches (1,778 to 2,032 millimeters)
Mean annual air temperature: 48 to 54 degrees F (9 to 12 degrees C)
Frost-free period: 95 to 170 days

Map Unit Composition

Bonneyridge sandy loam—85 percent

Minor components—15 percent

Characteristics of Bonneyridge Sandy Loam

Slope: 1 to 15 percent

Geomorphic position: Ridgetops and flats on granitic mountains

Parent material: Coarse-loamy residuum weathered from quartz diorite

Observed vegetation: Ponderosa pine, white fir, Douglas-fir, incense cedar, sugar pine, tanoak, California black oak, whitethorn ceanothus, manzanita, and dogwood

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 5 percent subrounded cobbles, 0 to 5 percent subrounded stones

Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.9 inches)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 4e-4

Land capability, nonirrigated: 4e-4

Hydric soil status: Not hydric

Hydrologic soil group: A

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A1—1 to 3 inches; sandy loam

A2—3 to 6 inches; sandy loam

Bw1—6 to 16 inches; coarse sandy loam

Bw2—16 to 22 inches; coarse sandy loam

Bw3—22 to 31 inches; coarse sandy loam

Bw4—31 to 39 inches; sandy loam

C1—39 to 56 inches; loamy coarse sand

C2—56 to 76 inches; gravelly loamy coarse sand

Minor Components in Map Unit 727

Chawanakee and similar soils

Composition: 5 percent

Slope: 1 to 15 percent

Geomorphic position: Knolls in mountains

Hydric soil status: Not hydric

Aquic Xerofluvents and similar soils

Composition: 5 percent

Slope: 0 to 2 percent

Geomorphic position: Meadows in mountains

Hydric soil status: Hydric

Soils that are 20 to 40 inches deep to bedrock*Composition:* 5 percent*Slope:* 1 to 15 percent*Geomorphic position:* Knolls in mountains*Hydric soil status:* Not hydric**728—Bonneyridge sandy loam, 15 to 30 percent slopes*****Map Unit Setting****General location:* Northeastern Butte County and western Plumas County*Major uses:* Timber production, wildlife habitat, and watershed*Major land resource area:* 22A*Landscape:* Northern Sierra Nevada Mountains*Elevation:* 3,670 to 4,665 feet (1,119 to 1,423 meters)*Mean annual precipitation:* 70 to 80 inches (1,778 to 2,032 millimeters)*Mean annual air temperature:* 48 to 54 degrees F (9 to 12 degrees C)*Frost-free period:* 95 to 170 days***Map Unit Composition***

Bonneyridge sandy loam—85 percent

Minor components—15 percent

Characteristics of Bonneyridge Sandy Loam*Slope:* 15 to 30 percent*Geomorphic position:* Side slopes on granitic mountains*Parent material:* Coarse-loamy colluvium derived from quartz diorite*Observed vegetation:* Ponderosa pine, white fir, Douglas-fir, incense cedar, sugar pine, tanoak, California black oak, whitethorn ceanothus, manzanita, and dogwood*Texture of the surface layer:* Slightly decomposed plant material*Percentage of the surface covered by rock fragments:* 0 to 10 percent coarse, subrounded gravel, 0 to 5 percent subrounded cobbles, 0 to 5 percent subrounded stones*Depth to a restrictive feature (paralithic bedrock):* 60 to 130 inches*Shrink-swell potential:* Low (LEP of less than 3)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* None*Annual ponding frequency:* None*Water table (zone of saturation):* None observed*Available water capacity:* Low (about 4.9 inches)*Natural drainage class:* Somewhat excessively drained*Surface runoff (bare conditions):* Medium***Interpretive groups****Land capability, irrigated:* 6e-1*Land capability, nonirrigated:* 6e-1*Hydric soil status:* Not hydric*Hydrologic soil group:* A***Typical profile***

Oi—0 to 1 inch; slightly decomposed plant material

A1—1 to 3 inches; sandy loam

A2—3 to 6 inches; sandy loam

Bw1—6 to 16 inches; coarse sandy loam

Bw2—16 to 22 inches; coarse sandy loam

- Bw3—22 to 31 inches; coarse sandy loam
- Bw4—31 to 39 inches; sandy loam
- C1—39 to 56 inches; loamy coarse sand
- C2—56 to 76 inches; gravelly loamy coarse sand

Minor Components in Map Unit 728

Soils that are 20 to 40 inches deep to bedrock

Composition: 7 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

Chawanakee and similar soils

Composition: 6 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

Aquic Xerofluvents and similar soils

Composition: 2 percent

Slope: 0 to 2 percent

Geomorphic position: Meadows in mountains

Hydric soil status: Hydric

729—Bonneyridge sandy loam, 30 to 50 percent slopes

Map Unit Setting

General location: Northeastern Butte County and western Plumas County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 4,100 to 4,560 feet (1,250 to 1,390 meters)

Mean annual precipitation: 74 to 77 inches (1,880 to 1,956 millimeters)

Mean annual air temperature: 50 to 52 degrees F (10 to 11 degrees C)

Frost-free period: 110 to 145 days

Map Unit Composition

Bonneyridge sandy loam—85 percent

Minor components—15 percent

Characteristics of Bonneyridge Sandy Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes on granitic mountains

Parent material: Coarse-loamy colluvium derived from quartz diorite

Observed vegetation: Ponderosa pine, white fir, Douglas-fir, incense cedar, sugar pine, tanoak, California black oak, whitethorn ceanothus, manzanita, and dogwood

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 5 percent subrounded cobbles, 0 to 5 percent subrounded stones

Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.9 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
 A1—1 to 3 inches; sandy loam
 A2—3 to 6 inches; sandy loam
 Bw1—6 to 16 inches; coarse sandy loam
 Bw2—16 to 22 inches; coarse sandy loam
 Bw3—22 to 31 inches; coarse sandy loam
 Bw4—31 to 39 inches; sandy loam
 C1—39 to 56 inches; loamy coarse sand
 C2—56 to 76 inches; gravelly loamy coarse sand

Minor Components in Map Unit 729

Soils that are 20 to 40 inches deep to bedrock

Composition: 8 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Chawanakee and similar soils

Composition: 7 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

730—Tuscoll-Schott complex, 30 to 50 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Timber production, watershed, and wildlife habitat
Major land resource area: 22B
Landscape: Southern Cascade Mountains
Elevation: 1,600 to 3,395 feet (488 to 1,036 meters)
Mean annual precipitation: 55 to 72 inches (1,397 to 1,829 millimeters)
Mean annual air temperature: 54 to 55 degrees F (12 to 13 degrees C)
Frost-free period: 160 to 215 days

Map Unit Composition

Tuscoll gravelly loam—60 percent
 Schott very gravelly loam—25 percent
 Minor components—15 percent

Characteristics of Tuscoll Gravelly Loam

Slope: 30 to 50 percent

Geomorphic position: Backslopes in ravines and canyons

Parent material: Fine-loamy colluvium derived from volcanic breccia

Observed vegetation: Douglas-fir, ponderosa pine, incense cedar, California black oak, canyon live oak, whiteleaf manzanita, California laurel, bigleaf maple, deerbrush, and Pacific poison oak

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 25 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 60 to 120 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 8.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

Oe—1 to 2 inches; moderately decomposed plant material

A—2 to 6 inches; gravelly loam

Bt1—6 to 14 inches; gravelly loam

Bt2—14 to 23 inches; gravelly loam

Bt3—23 to 33 inches; gravelly clay loam

Bt4—33 to 41 inches; gravelly clay loam

Bt5—41 to 49 inches; gravelly clay loam

Bt6—49 to 70 inches; gravelly clay loam

Characteristics of Schott Very Gravelly Loam

Slope: 30 to 50 percent

Geomorphic position: Backslopes in ravines and canyons

Parent material: Gravelly and loamy residuum and/or colluvium derived from volcanic breccia

Observed vegetation: Douglas-fir, ponderosa pine, incense cedar, California black oak, canyon live oak, whiteleaf manzanita, California laurel, bigleaf maple, deerbrush, and Pacific poison oak

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 25 percent medium, subangular gravel, 0 to 15 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 3.3 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 6 inches; very gravelly loam

Bt1—6 to 13 inches; very gravelly clay loam

Bt2—13 to 22 inches; very cobbly clay loam

Bt3—22 to 40 inches; extremely gravelly clay loam

Bt4—40 to 50 inches; extremely gravelly sandy clay loam

R—50 inches; bedrock

Minor Components in Map Unit 730

Lydon soils, 20 to 35 percent clay, and similar soils

Composition: 4 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes in ravines and canyons

Hydric soil status: Not hydric

Beecee and similar soils

Composition: 4 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes in ravines and canyons

Hydric soil status: Not hydric

Lydon and similar soils

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes in ravines and canyons

Hydric soil status: Not hydric

Andic Haploxeralfs with paralithic bedrock at a depth of 20 to 60 inches and similar soils

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes in ravines and canyons

Hydric soil status: Not hydric

Rock outcrop

Composition: 1 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes in ravines and canyons

Hydric soil status: Not hydric

731—Tusccoll-Schott complex, 50 to 70 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Timber production, watershed, and wildlife habitat

Major land resource area: 22B

Landscape: Southern Cascade Mountains

Elevation: 1,600 to 3,395 feet (488 to 1,036 meters)

Mean annual precipitation: 55 to 72 inches (1,397 to 1,829 millimeters)

Mean annual air temperature: 54 to 55 degrees F (12 to 13 degrees C)

Frost-free period: 160 to 215 days

Map Unit Composition

Tusccoll gravelly loam—50 percent

Schott very gravelly loam—35 percent

Minor components—15 percent

Characteristics of Tusccoll Gravelly Loam

Slope: 50 to 70 percent

Geomorphic position: Backslopes in ravines and canyons

Parent material: Fine-loamy colluvium derived from volcanic breccia

Observed vegetation: Douglas-fir, ponderosa pine, incense cedar, California black oak, canyon live oak, whiteleaf manzanita, California laurel, bigleaf maple, deerbrush, and Pacific poison oak

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 25 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 60 to 120 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 8.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

Oe—1 to 2 inches; moderately decomposed plant material

A—2 to 6 inches; gravelly loam

Bt1—6 to 14 inches; gravelly loam

Bt2—14 to 23 inches; gravelly loam

Bt3—23 to 33 inches; gravelly clay loam

Bt4—33 to 41 inches; gravelly clay loam

Bt5—41 to 49 inches; gravelly clay loam

Bt6—49 to 70 inches; gravelly clay loam

Characteristics of Schott Very Gravelly Loam

Slope: 50 to 70 percent

Geomorphic position: Backslopes in ravines and canyons

Parent material: Gravelly and loamy residuum and/or colluvium derived from volcanic breccia

Observed vegetation: Douglas-fir, ponderosa pine, incense cedar, California black oak, canyon live oak, whiteleaf manzanita, California laurel, bigleaf maple, deerbrush, and Pacific poison oak

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 25 percent medium, subangular gravel, 0 to 15 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 3.3 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 6 inches; very gravelly loam

Bt1—6 to 13 inches; very gravelly clay loam

Bt2—13 to 22 inches; very cobbly clay loam

Bt3—22 to 40 inches; extremely gravelly clay loam

Bt4—40 to 50 inches; extremely gravelly sandy clay loam

R—50 inches; bedrock

Minor Components in Map Unit 731

Beecee and similar soils

Composition: 4 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in ravines and canyons

Hydric soil status: Not hydric

Andic Haploxeralfs with paralithic bedrock at a depth of 20 to 60 inches and similar soils

Composition: 3 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in ravines and canyons

Hydric soil status: Not hydric

Lydon soils, 20 to 35 percent clay, and similar soils

Composition: 3 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in ravines and canyons

Hydric soil status: Not hydric

Lydon and similar soils

Composition: 3 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in ravines and canyons

Hydric soil status: Not hydric

Rock outcrop

Composition: 2 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in ravines and canyons

Hydric soil status: Not hydric

732—Bonepile taxadjunct, 2 to 8 percent slopes

Map Unit Setting

General location: Northeastern Butte County

Major uses: Homesite development, timber production, wildlife habitat, and watershed

Major land resource area: 22B

Landscape: Southern Cascade Mountains

Elevation: 4,300 to 4,595 feet (1,311 to 1,402 meters)

Mean annual precipitation: 69 to 75 inches (1,753 to 1,905 millimeters)

Mean annual air temperature: 48 to 52 degrees F (9 to 11 degrees C)

Frost-free period: 105 to 115 days

Map Unit Composition

Bonepile taxadjunct, duripan substratum—90 percent

Minor components—10 percent

Characteristics of Bonepile Taxadjunct, Duripan Substratum

Slope: 2 to 8 percent

Geomorphic position: Stream terraces in mountains

Parent material: Gravelly alluvium over cemented, gravelly alluvium derived from volcanic rocks

Observed vegetation: Ponderosa pine, incense cedar, Douglas-fir, white fir, California black oak, and greenleaf manzanita

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 10 to 40 percent medium, subangular gravel, 0 to 25 percent subangular cobbles, 0 to 40 percent subangular stones, 0 to 20 percent subangular boulders

Depth to a restrictive feature (duripan): 40 to 60 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Depth to a water table (zone of saturation): 37 to 72 inches

Available water capacity: Very low (about 2.4 inches)

Natural drainage class: Moderately well drained

Surface runoff (bare conditions): Very low

*Interpretive groups**Land capability, irrigated: 4e-3**Land capability, nonirrigated: 4e-3**Hydric soil status: Not hydric**Hydrologic soil group: B**Typical profile*

Oi—0 to 1 inch; slightly decomposed plant material

A1—1 to 4 inches; gravelly medial sandy loam

A2—4 to 7 inches; very gravelly medial sandy loam

AB—7 to 15 inches; very gravelly medial sandy loam

Bw1—15 to 30 inches; extremely gravelly sandy loam

Bw2—30 to 37 inches; extremely cobbly sandy clay loam

2Bt—37 to 47 inches; extremely gravelly clay loam

2Bqm—47 inches; duripan

Minor Components in Map Unit 732**Xerofluvents and similar soils***Composition: 4 percent**Slope: 0 to 5 percent**Geomorphic position: Flood plains in mountains**Hydric soil status: Not hydric***Soils that are more than 60 inches deep to a duripan***Composition: 4 percent**Slope: 2 to 8 percent**Geomorphic position: Stream terraces in mountains**Hydric soil status: Not hydric***Endoaquolls and similar soils***Composition: 2 percent**Slope: 0 to 2 percent**Geomorphic position: Meadows in mountains**Hydric soil status: Hydric***733—Haploxeralfs, terrace, 0 to 5 percent slopes****Map Unit Setting***General location: North-central Butte County**Major uses: Wildlife habitat, homesite development, and watershed**Major land resource area: 18**Landscape: Southern Cascade foothills**Elevation: 400 to 1,400 feet (122 to 427 meters)**Mean annual precipitation: 30 to 55 inches (762 to 1,397 millimeters)**Mean annual air temperature: 55 to 61 degrees F (13 to 16 degrees C)**Frost-free period: 230 to 260 days***Map Unit Composition**

Haploxeralfs, terrace, gravelly loam—75 percent

Minor components—25 percent

Characteristics of Haploxeralfs, Terrace, Gravelly Loam*Slope: 0 to 8 percent**Geomorphic position: Stream terraces in canyons*

Parent material: Bouldery and loamy alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Annual grasses and forbs, blue oak, valley oak, live oak, and foothill pine

Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 5 to 25 percent medium, rounded gravel, 0 to 15 percent rounded cobbles, 0 to 5 percent rounded stones, 0 to 5 percent rounded boulders

Restrictive feature: None identified

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.0 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Low

Interpretive groups, Terraces

Land capability, irrigated: 3e-7

Land capability, nonirrigated: 3e-7

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

A—0 to 5 inches; gravelly loam

Bt1—5 to 11 inches; gravelly loam

Bt2—11 to 18 inches; very gravelly loam

Bt3—18 to 32 inches; very cobbly clay loam

Bt4—32 to 48 inches; extremely cobbly clay loam

Bt5—48 to 63 inches; extremely cobbly sandy clay loam

Minor Components in Map Unit 733

Xerofluvents and similar soils

Composition: 10 percent

Slope: 0 to 4 percent

Geomorphic position: Flood plains in canyons

Hydric soil status: Not hydric

Haploxeralfs, terrace, nongravelly, and similar soils

Composition: 5 percent

Slope: 0 to 8 percent

Geomorphic position: Stream terraces in canyons

Hydric soil status: Not hydric

Soils that are 20 to 60 inches deep to bedrock

Composition: 4 percent

Slope: 0 to 8 percent

Geomorphic position: Strath terraces in canyons

Hydric soil status: Not hydric

Soils that are 20 to 60 inches deep to a duripan

Composition: 3 percent

Slope: 0 to 8 percent

Geomorphic position: Stream terraces in canyons

Hydric soil status: Not hydric

Soils on riser slopes*Composition:* 3 percent*Slope:* 8 to 35 percent*Geomorphic position:* Riser slopes on stream terraces in canyons*Hydric soil status:* Not hydric**734—Haploxerands-Aquic Xerofluvents complex, 0 to 15 percent slopes*****Map Unit Setting****General location:* Northeastern Butte County and western Plumas County*Major uses:* Timber production, wildlife habitat, and watershed*Major land resource area:* 22A*Landscape:* Northern Sierra Nevada Mountains*Elevation:* 4,195 to 5,200 feet (1,280 to 1,585 meters)*Mean annual precipitation:* 76 to 82 inches (1,930 to 2,083 millimeters)*Mean annual air temperature:* 48 to 52 degrees F (9 to 11 degrees C)*Frost-free period:* 90 to 130 days***Map Unit Composition***

Haploxerands medial sandy loam—55 percent

Aquic Xerofluvents peaty very fine sandy loam—35 percent

Minor components—10 percent

Characteristics of Haploxerands Medial Sandy Loam*Slope:* 0 to 15 percent*Geomorphic position:* Terraces in mountain valleys*Parent material:* Sandy and gravelly alluvium derived from igneous rocks*Observed vegetation:* White fir, sugar pine, California red fir, ponderosa pine, incense cedar, California black oak, and Sierra chinquapin*Texture of the surface layer:* Slightly decomposed plant material*Percentage of the surface covered by rock fragments:* 5 to 35 percent coarse, subrounded gravel, 0 to 15 percent subrounded cobbles, 0 to 5 percent subrounded stones, 0 to 5 percent subrounded boulders*Depth to a restrictive feature (paralithic bedrock):* 20 to 118 inches*Shrink-swell potential:* Low (LEP of less than 3)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* None*Annual ponding frequency:* None*Water table (zone of saturation):* None observed*Available water capacity:* Low (about 4.8 inches)*Natural drainage class:* Well drained*Surface runoff (bare conditions):* Low***Interpretive groups****Land capability, irrigated:* 3e-1*Land capability, nonirrigated:* 3e-1*Hydric soil status:* Not hydric*Hydrologic soil group:* A***Typical profile***

Oi—0 to 0.5 inch; slightly decomposed plant material

A1—0.5 inch to 2 inches; medial sandy loam

A2—2 to 5 inches; gravelly medial sandy loam
 Bw1—5 to 12 inches; medial sandy loam
 Bw2—12 to 23 inches; gravelly medial sandy loam
 Bw3—23 to 30 inches; gravelly coarse sandy loam
 Bw4—30 to 42 inches; gravelly coarse sandy loam
 Bw5—42 to 60 inches; gravelly coarse sandy loam
 Bw6—60 to 80 inches; coarse sandy loam

Characteristics of Aquic Xerofluvents Peaty Very Fine Sandy Loam

Slope: 0 to 8 percent

Geomorphic position: Meadows in mountain valleys

Parent material: Stratified, sandy alluvium derived from quartz diorite

Observed vegetation: *Carex*, *Juncus*, annual grasses and forbs, willows, and alders

Texture of the surface layer: Peaty very fine sandy loam

Percentage of the surface covered by rock fragments: None

Restrictive feature: None identified

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Frequent

Annual ponding frequency: None

Depth to a water table (zone of saturation): 0 to 17 inches

Available water capacity: Moderate (about 7.3 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

A1—0 to 3 inches; peaty very fine sandy loam

A2—3 to 7 inches; mucky fine sandy loam

C—7 to 16 inches; gravelly coarse sandy loam

Ab—16 to 19 inches; mucky fine sandy loam

C'—19 to 23 inches; gravelly sandy loam

A'b—23 to 35 inches; mucky very fine sandy loam

C''—35 to 49 inches; gravelly loamy coarse sand

A''b—49 to 63 inches; peaty fine sandy loam

C'''—63 to 71 inches; gravelly loamy coarse sand

A'''b—71 to 80 inches; mucky fine sandy loam

Minor Components in Map Unit 734

Haploxerands skeletal and similar soils

Composition: 3 percent

Slope: 0 to 15 percent

Geomorphic position: Terraces in mountain valleys

Hydric soil status: Not hydric

Soils that are 20 to 60 inches deep to dense glacial till

Composition: 3 percent

Slope: 0 to 15 percent

Geomorphic position: Terraces in mountain valleys

Hydric soil status: Not hydric

Bonneyr ridge sandy loam and similar soils*Composition:* 2 percent*Slope:* 0 to 15 percent*Geomorphic position:* Footslopes in mountain valleys*Hydric soil status:* Not hydric**Soils on riser slopes***Composition:* 2 percent*Slope:* 15 to 35 percent*Geomorphic position:* Riser slopes on terraces in mountain valleys*Hydric soil status:* Not hydric**735—Fluvaquents, loamy, 0 to 3 percent slopes*****Map Unit Setting****General location:* Central Butte County*Major uses:* Livestock grazing, wildlife habitat, and watershed*Major land resource area:* 22A*Landscape:* Northern Sierra Nevada Mountains*Elevation:* 2,000 to 2,155 feet (610 to 658 meters)*Mean annual precipitation:* 55 to 57 inches (1,397 to 1,448 millimeters)*Mean annual air temperature:* 55 degrees F (13 degrees C)*Frost-free period:* 210 to 230 days***Map Unit Composition***

Fluvaquents loam—80 percent

Minor components—20 percent

Characteristics of Fluvaquents Loam*Slope:* 0 to 3 percent*Geomorphic position:* Stream terraces in mountain valleys*Parent material:* Stratified, sandy and silty alluvium derived from igneous and metamorphic rocks*Observed vegetation:* Annual grasses and forbs, ponderosa pine, California black oak, white alder, willows, bigleaf maple, blackberry, and *Carex**Texture of the surface layer:* Slightly decomposed plant material*Percentage of the surface covered by rock fragments:* 0 to 15 percent fine, rounded gravel*Restrictive feature:* None identified*Shrink-swell potential:* Moderate (LEP of 3 to less than 6)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* Rare*Annual ponding frequency:* None*Depth to a water table (zone of saturation):* 10 to 40 inches*Available water capacity:* High (about 10.0 inches)*Natural drainage class:* Somewhat poorly drained*Surface runoff (bare conditions):* Very high***Interpretive groups****Land capability, irrigated:* 5w-2*Land capability, nonirrigated:* 5w-2*Hydric soil status:* Hydric*Hydrologic soil group:* C

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material
 A1—0.5 inch to 2 inches; loam
 A2—2 to 9 inches; loam
 Bw1—9 to 18 inches; sandy clay loam
 Bw2—18 to 24 inches; silt loam
 C1—24 to 27 inches; sandy loam
 C2—27 to 37 inches; silt loam
 Agb1—37 to 45 inches; loam
 Agb2—45 to 65 inches; sandy clay loam
 Agb3—65 to 70 inches; sandy clay loam
 Agb3—65 to 70 inches; sandy loam
 2Cg—70 to 85 inches; sandy clay loam

Minor Components in Map Unit 735**Fluvaquents, gravelly, and similar soils***Composition:* 10 percent*Slope:* 0 to 3 percent*Geomorphic position:* Terraces in mountain valleys*Hydric soil status:* Hydric**Xerofluvents and similar soils***Composition:* 5 percent*Slope:* 0 to 3 percent*Geomorphic position:* Flood plains in mountain valleys*Hydric soil status:* Not hydric**Islandbar and similar soils***Composition:* 3 percent*Slope:* 0 to 3 percent*Geomorphic position:* Footslopes in mountain valleys*Hydric soil status:* Not hydric**Featherfalls sandy loam and similar soils***Composition:* 2 percent*Slope:* 0 to 3 percent*Geomorphic position:* Footslopes in mountain valleys*Hydric soil status:* Not hydric**801—Obstruction gravelly sandy loam, 3 to 15 percent slopes*****Map Unit Setting****General location:* Northeastern Butte County*Major uses:* Timber production, wildlife habitat, and watershed*Major land resource area:* 22A*Landscape:* Northern Sierra Nevada Mountains*Elevation:* 3,835 to 5,360 feet (1,170 to 1,634 meters)*Mean annual precipitation:* 67 to 78 inches (1,702 to 1,981 millimeters)*Mean annual air temperature:* 50 to 54 degrees F (10 to 12 degrees C)*Frost-free period:* 100 to 175 days***Map Unit Composition***

Obstruction gravelly sandy loam—70 percent

Minor components—30 percent

Characteristics of Obstruction Gravelly Sandy Loam

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on metamorphic mountains

Parent material: Fine-loamy residuum over coarse-loamy residuum weathered from metamorphic rocks

Observed vegetation: Ponderosa pine, white fir, Douglas-fir, sugar pine, incense cedar, California black oak, tanoak, whitethorn ceanothus, and dogwood

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 35 percent fine, subangular gravel, 0 to 25 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 10 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 60 to 96 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.7 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 4 inches; slightly decomposed plant material

A—4 to 7 inches; gravelly sandy loam

Bt1—7 to 10 inches; gravelly sandy clay loam

Bt2—10 to 18 inches; gravelly fine sandy loam

Bt3—18 to 25 inches; gravelly sandy clay loam

Bt4—25 to 33 inches; sandy clay loam

Bt5—33 to 44 inches; fine sandy loam

Bt6—44 to 64 inches; gravelly fine sandy loam

Bt7—64 to 84 inches; gravelly fine sandy loam

Cr—84 inches; bedrock

Minor Components in Map Unit 801

Coarse-loamy soils

Composition: 12 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on metamorphic mountains

Hydric soil status: Not hydric

Obskel and similar soils

Composition: 10 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on metamorphic mountains

Hydric soil status: Not hydric

Powellton and similar soils

Composition: 5 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on metamorphic mountains

Hydric soil status: Not hydric

Retsongulch and similar soils

Composition: 3 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on metamorphic mountains

Hydric soil status: Not hydric

802—Obskel-Obstruction complex, 15 to 30 percent slopes

Map Unit Setting

General location: Northeastern Butte County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 2,995 to 5,320 feet (914 to 1,622 meters)

Mean annual precipitation: 66 to 78 inches (1,676 to 1,981 millimeters)

Mean annual air temperature: 50 to 54 degrees F (10 to 12 degrees C)

Frost-free period: 100 to 175 days

Map Unit Composition

Obskel very gravelly sandy loam—40 percent

Obstruction gravelly sandy loam—40 percent

Minor components—20 percent

Characteristics of Obskel Very Gravelly Sandy Loam

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and side slopes on metamorphic mountains

Parent material: Gravelly, coarse-loamy residuum weathered from metamorphic rocks

Observed vegetation: Ponderosa pine, white fir, Douglas-fir, sugar pine, incense cedar, California black oak, tanoak, whitethorn ceanothus, and dogwood

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 15 to 35 percent medium, subangular gravel, 0 to 25 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 10 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material
 Oe—0.5 to 1 inch; moderately decomposed plant material
 A—1 to 4 inches; very gravelly sandy loam
 Bt1—4 to 9 inches; very gravelly sandy loam
 Bt2—9 to 19 inches; very gravelly sandy loam
 Bt3—19 to 30 inches; very gravelly loam
 Bt4—30 to 56 inches; very gravelly loam
 Cr—56 inches; bedrock

Characteristics of Obstruction Gravelly Sandy Loam

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and side slopes on metamorphic mountains

Parent material: Fine-loamy over coarse-loamy colluvium and/or residuum weathered from metamorphic rocks

Observed vegetation: Ponderosa pine, white fir, Douglas-fir, sugar pine, incense cedar, California black oak, tanoak, whitethorn ceanothus, and dogwood

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 35 percent fine, subangular gravel, 0 to 25 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 10 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 60 to 96 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.7 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 4 inches; slightly decomposed plant material
 A—4 to 7 inches; gravelly sandy loam
 Bt1—7 to 10 inches; gravelly sandy clay loam
 Bt2—10 to 18 inches; gravelly fine sandy loam
 Bt3—18 to 25 inches; gravelly sandy clay loam
 Bt4—25 to 33 inches; sandy clay loam
 Bt5—33 to 44 inches; fine sandy loam
 Bt6—44 to 64 inches; gravelly fine sandy loam
 Bt7—64 to 84 inches; gravelly fine sandy loam
 Cr—84 inches; bedrock

Minor Components in Map Unit 802**Coarse-loamy soils**

Composition: 12 percent

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and side slopes on metamorphic mountains

Hydric soil status: Not hydric

Retsongulch and similar soils*Composition:* 5 percent*Slope:* 15 to 30 percent*Geomorphic position:* Ridgetops and side slopes on metamorphic mountains*Hydric soil status:* Not hydric**Powellton and similar soils***Composition:* 3 percent*Slope:* 15 to 30 percent*Geomorphic position:* Ridgetops and side slopes on metamorphic mountains*Hydric soil status:* Not hydric**803—Obskel-Obstruction complex, 30 to 50 percent slopes*****Map Unit Setting****General location:* Northeastern Butte County*Major uses:* Timber production, wildlife habitat, and watershed*Major land resource area:* 22A*Landscape:* Northern Sierra Nevada Mountains*Elevation:* 2,795 to 5,360 feet (853 to 1,634 meters)*Mean annual precipitation:* 66 to 78 inches (1,676 to 1,981 millimeters)*Mean annual air temperature:* 50 to 54 degrees F (10 to 12 degrees C)*Frost-free period:* 100 to 175 days***Map Unit Composition***

Obskel very gravelly sandy loam—40 percent

Obstruction gravelly sandy loam—40 percent

Minor components—20 percent

Characteristics of Obskel Very Gravelly Sandy Loam*Slope:* 30 to 50 percent*Geomorphic position:* Side slopes on metamorphic mountains*Parent material:* Gravelly, coarse-loamy residuum and/or colluvium derived from metamorphic rocks*Observed vegetation:* Ponderosa pine, white fir, Douglas-fir, sugar pine, incense cedar, California black oak, tanoak, whitethorn ceanothus, and dogwood*Texture of the surface layer:* Slightly decomposed plant material*Percentage of the surface covered by rock fragments:* 15 to 35 percent medium, subangular gravel, 0 to 25 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 10 percent subangular boulders*Depth to a restrictive feature (paralithic bedrock):* 40 to 60 inches*Shrink-swell potential:* Low (LEP of less than 3)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* None*Annual ponding frequency:* None*Water table (zone of saturation):* None observed*Available water capacity:* Low (about 4.9 inches)*Natural drainage class:* Well drained*Surface runoff (bare conditions):* High*Interpretive groups**Land capability, irrigated:* 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material

Oe—0.5 to 1 inch; moderately decomposed plant material

A—1 to 4 inches; very gravelly sandy loam

Bt1—4 to 9 inches; very gravelly sandy loam

Bt2—9 to 19 inches; very gravelly sandy loam

Bt3—19 to 30 inches; very gravelly loam

Bt4—30 to 56 inches; very gravelly loam

Cr—56 inches; bedrock

Characteristics of Obstruction Gravelly Sandy Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes on metamorphic mountains

Parent material: Fine-loamy over coarse-loamy colluvium and/or residuum weathered from metamorphic rocks

Observed vegetation: Ponderosa pine, white fir, Douglas-fir, sugar pine, incense cedar, California black oak, tanoak, whitethorn ceanothus, and dogwood

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 35 percent fine, subangular gravel, 0 to 25 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 10 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 60 to 96 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.7 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 4 inches; slightly decomposed plant material

A—4 to 7 inches; gravelly sandy loam

Bt1—7 to 10 inches; gravelly sandy clay loam

Bt2—10 to 18 inches; gravelly fine sandy loam

Bt3—18 to 25 inches; gravelly sandy clay loam

Bt4—25 to 33 inches; sandy clay loam

Bt5—33 to 44 inches; fine sandy loam

Bt6—44 to 64 inches; gravelly fine sandy loam

Bt7—64 to 84 inches; gravelly fine sandy loam

Cr—84 inches; bedrock

Minor Components in Map Unit 803

Coarse-loamy soils

Composition: 12 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on metamorphic mountains

Hydric soil status: Not hydric

Powellton and similar soils

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on metamorphic mountains

Hydric soil status: Not hydric

Retsongulch and similar soils

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on metamorphic mountains

Hydric soil status: Not hydric

Rock outcrop

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on metamorphic mountains

Hydric soil status: Not hydric

804—Obskel-Obstruction-Retsongulch complex, 50 to 70 percent slopes

Map Unit Setting

General location: Northeastern Butte County

Major uses: Watershed, wildlife habitat, and timber production

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 2,795 to 5,515 feet (853 to 1,682 meters)

Mean annual precipitation: 66 to 78 inches (1,676 to 1,981 millimeters)

Mean annual air temperature: 50 to 54 degrees F (10 to 12 degrees C)

Frost-free period: 110 to 175 days

Map Unit Composition

Obskel very gravelly sandy loam—35 percent

Obstruction gravelly sandy loam—25 percent

Retsongulch very gravelly sandy loam—20 percent

Minor components—20 percent

Characteristics of Obskel Very Gravelly Sandy Loam

Slope: 50 to 70 percent

Geomorphic position: Backslopes in ravines and canyons

Parent material: Gravelly, coarse-loamy residuum and/or colluvium derived from metamorphic rocks

Observed vegetation: Ponderosa pine, tanoak, Douglas-fir, California black oak, canyon live oak, incense cedar, sugar pine, whiteleaf manzanita, deerbrush, and dogwood

Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 15 to 35 percent medium, subangular gravel, 0 to 25 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 10 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material

Oe—0.5 to 1 inch; moderately decomposed plant material

A—1 to 4 inches; very gravelly sandy loam

Bt1—4 to 9 inches; very gravelly sandy loam

Bt2—9 to 19 inches; very gravelly sandy loam

Bt3—19 to 30 inches; very gravelly loam

Bt4—30 to 56 inches; very gravelly loam

Cr—56 inches; bedrock

Characteristics of Obstruction Gravelly Sandy Loam

Slope: 50 to 70 percent

Geomorphic position: Backslopes in ravines and canyons

Parent material: Fine-loamy over coarse-loamy colluvium and/or residuum weathered from metamorphic rocks

Observed vegetation: Ponderosa pine, tanoak, Douglas-fir, California black oak, canyon live oak, incense cedar, sugar pine, whiteleaf manzanita, deerbrush, and dogwood

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 35 percent fine, subangular gravel, 0 to 25 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 10 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 60 to 96 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.7 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 4 inches; slightly decomposed plant material

A—4 to 7 inches; gravelly sandy loam

Bt1—7 to 10 inches; gravelly sandy clay loam

Bt2—10 to 18 inches; gravelly fine sandy loam

Bt3—18 to 25 inches; gravelly sandy clay loam

Bt4—25 to 33 inches; sandy clay loam

Bt5—33 to 44 inches; fine sandy loam

Bt6—44 to 64 inches; gravelly fine sandy loam

Bt7—64 to 84 inches; gravelly fine sandy loam

Cr—84 inches; bedrock

Characteristics of Retsongulch Very Gravelly Sandy Loam

Slope: 50 to 70 percent

Geomorphic position: Backslopes in ravines and canyons

Parent material: Gravelly residuum and/or colluvium derived from metamorphic rocks

Observed vegetation: Canyon live oak, ponderosa pine, tanoak, Douglas-fir, California black oak, incense cedar, sugar pine, whiteleaf manzanita, deerbrush, and dogwood

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 15 to 80 percent medium, subangular gravel, 0 to 15 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 10 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 20 to 40 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; very gravelly sandy loam

Bt1—3 to 12 inches; very gravelly sandy clay loam

Bt2—12 to 21 inches; extremely gravelly sandy clay loam

Bt3—21 to 30 inches; extremely gravelly sandy loam

R—30 inches; bedrock

Minor Components in Map Unit 804

Coarse-loamy soils

Composition: 12 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in ravines and canyons

Hydric soil status: Not hydric

Rock outcrop

Composition: 4 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in ravines and canyons

Hydric soil status: Not hydric

Flumewall and similar soils

Composition: 4 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in ravines and canyons

Hydric soil status: Not hydric

805—Bottlehill-Walkermine-Logtrain complex, 3 to 15 percent slopes

Map Unit Setting

General location: Northeastern Butte County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 3,995 to 5,275 feet (1,219 to 1,609 meters)

Mean annual precipitation: 73 to 76 inches (1,854 to 1,930 millimeters)

Mean annual air temperature: 48 to 52 degrees F (9 to 11 degrees C)

Frost-free period: 100 to 140 days

Map Unit Composition

Bottlehill very gravelly loam—50 percent

Walkermine very gravelly loam—20 percent

Logtrain gravelly loam—20 percent

Minor components—10 percent

Characteristics of Bottlehill Very Gravelly Loam

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on metamorphic mountains

Parent material: Gravelly and loamy residuum weathered from metamorphic rocks

Observed vegetation: Ponderosa pine, white fir, sugar pine, Douglas-fir, California black oak, incense cedar, greenleaf manzanita, Sierra chinquapin, and prostrate ceanothus

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 35 to 75 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 2.1 inches)

Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-4
Land capability, nonirrigated: 4e-4
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material
 Oe—0.5 inch to 2 inches; moderately decomposed plant material
 A1—2 to 4 inches; very gravelly loam
 A2—4 to 9 inches; very gravelly loam
 Bt1—9 to 13 inches; very gravelly loam
 Bt2—13 to 22 inches; very gravelly loam
 Bt3—22 to 33 inches; extremely gravelly clay loam
 R—33 inches; bedrock

Characteristics of Walkermine Very Gravelly Loam

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on metamorphic mountains

Parent material: Gravelly and loamy residuum weathered from metamorphic rocks

Observed vegetation: Ponderosa pine, white fir, sugar pine, Douglas-fir, California black oak, incense cedar, greenleaf manzanita, Sierra chinquapin, and prostrate ceanothus

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 15 to 75 percent coarse, subangular gravel, 0 to 30 percent subangular cobbles, 0 to 30 percent subangular stones, 0 to 30 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 4 to 20 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 0.7 inch)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
 A—1 to 3 inches; very gravelly loam
 Bt—3 to 12 inches; very gravelly loam
 R—12 inches; bedrock

Characteristics of Logtrain Gravelly Loam

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on metamorphic mountains

Parent material: Gravelly and loamy residuum weathered from metamorphic rocks

Observed vegetation: Ponderosa pine, white fir, sugar pine, Douglas-fir, California black oak, incense cedar, greenleaf manzanita, Sierra chinquapin, and prostrate ceanothus

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 50 percent medium, subangular gravel, 0 to 30 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 10 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 5.0 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; gravelly loam

Bt1—3 to 9 inches; very gravelly loam

Bt2—9 to 21 inches; very gravelly loam

Bt3—21 to 38 inches; very cobbly loam

Bt4—38 to 54 inches; extremely gravelly loam

R—54 inches; bedrock

Minor Components in Map Unit 805

Haploxerults with bedrock at a depth of more than 60 inches and similar soils

Composition: 4 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on metamorphic mountains

Hydric soil status: Not hydric

Rock outcrop

Composition: 3 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on metamorphic mountains

Hydric soil status: Not hydric

Soils that are 20 to 60 inches deep to paralithic bedrock

Composition: 3 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on metamorphic mountains

Hydric soil status: Not hydric

806—Bottlehill-Walkermine-Logtrain complex, 15 to 30 percent slopes

Map Unit Setting

General location: Northeastern Butte County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 3,995 to 5,200 feet (1,219 to 1,585 meters)

Mean annual precipitation: 73 to 76 inches (1,854 to 1,930 millimeters)

Mean annual air temperature: 48 to 52 degrees F (9 to 11 degrees C)

Frost-free period: 100 to 145 days

Map Unit Composition

Bottlehill very gravelly loam—50 percent

Walkermine very gravelly loam—20 percent

Logtrain gravelly loam—20 percent

Minor components—10 percent

Characteristics of Bottlehill Very Gravelly Loam

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and side slopes on metamorphic mountains

Parent material: Gravelly and loamy residuum and/or colluvium derived from metamorphic rocks

Observed vegetation: Ponderosa pine, white fir, sugar pine, Douglas-fir, California black oak, incense cedar, greenleaf manzanita, Sierra chinquapin, and prostrate ceanothus

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 35 to 75 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 2.1 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material

Oe—0.5 inch to 2 inches; moderately decomposed plant material

A1—2 to 4 inches; very gravelly loam

A2—4 to 9 inches; very gravelly loam

Bt1—9 to 13 inches; very gravelly loam
 Bt2—13 to 22 inches; very gravelly loam
 Bt3—22 to 33 inches; extremely gravelly clay loam
 R—33 inches; bedrock

Characteristics of Walkermine Very Gravelly Loam

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and side slopes on metamorphic mountains

Parent material: Gravelly and loamy residuum and/or colluvium derived from metamorphic rocks

Observed vegetation: Ponderosa pine, white fir, sugar pine, Douglas-fir, California black oak, incense cedar, greenleaf manzanita, Sierra chinquapin, and prostrate ceanothus

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 15 to 75 percent coarse, subangular gravel, 0 to 30 percent subangular cobbles, 0 to 30 percent subangular stones, 0 to 30 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 4 to 20 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 0.7 inch)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; very gravelly loam

Bt—3 to 12 inches; very gravelly loam

R—12 inches; bedrock

Characteristics of Logtrain Gravelly Loam

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and side slopes on metamorphic mountains

Parent material: Gravelly and loamy residuum and/or colluvium derived from metamorphic rocks

Observed vegetation: Ponderosa pine, white fir, sugar pine, Douglas-fir, California black oak, incense cedar, greenleaf manzanita, Sierra chinquapin, and prostrate ceanothus

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 50 percent medium, subangular gravel, 0 to 30 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 10 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 5.0 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
 A—1 to 3 inches; gravelly loam
 Bt1—3 to 9 inches; very gravelly loam
 Bt2—9 to 21 inches; very gravelly loam
 Bt3—21 to 38 inches; very cobbly loam
 Bt4—38 to 54 inches; extremely gravelly loam
 R—54 inches; bedrock

Minor Components in Map Unit 806

Rock outcrop

Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Hydric soil status: Not hydric

Haploxerults with bedrock at a depth of more than 60 inches and similar soils

Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Hydric soil status: Not hydric

Soils that are 20 to 60 inches deep to paralithic bedrock

Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Hydric soil status: Not hydric

807—Bottlehill-Logtrain-Walkermine complex, 30 to 50 percent slopes

Map Unit Setting

General location: Northeastern Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,995 to 5,200 feet (914 to 1,585 meters)
Mean annual precipitation: 68 to 76 inches (1,727 to 1,930 millimeters)
Mean annual air temperature: 48 to 54 degrees F (9 to 12 degrees C)
Frost-free period: 100 to 145 days

Map Unit Composition

Bottlehill very gravelly loam—35 percent
 Logtrain gravelly loam—30 percent
 Walkermine very gravelly loam—25 percent
 Minor components—10 percent

Characteristics of Bottlehill Very Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons and on metamorphic mountains
Parent material: Gravelly and loamy residuum and/or colluvium derived from metamorphic rocks
Observed vegetation: Douglas-fir, ponderosa pine, incense cedar, sugar pine, canyon live oak, tanoak, California black oak, white fir, dwarf tanoak, greenleaf manzanita, Sierra chinquapin, and prostrate ceanothus
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 35 to 75 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)
Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 2.1 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High
Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material
 Oe—0.5 inch to 2 inches; moderately decomposed plant material
 A1—2 to 4 inches; very gravelly loam
 A2—4 to 9 inches; very gravelly loam
 Bt1—9 to 13 inches; very gravelly loam
 Bt2—13 to 22 inches; very gravelly loam
 Bt3—22 to 33 inches; extremely gravelly clay loam
 R—33 inches; bedrock

Characteristics of Logtrain Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons and on metamorphic mountains
Parent material: Gravelly and loamy residuum and/or colluvium derived from metamorphic rocks
Observed vegetation: Douglas-fir, ponderosa pine, incense cedar, sugar pine, canyon live oak, tanoak, California black oak, white fir, dwarf tanoak, greenleaf manzanita, Sierra chinquapin, and prostrate ceanothus
Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 50 percent medium, subangular gravel, 0 to 30 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 10 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 5.0 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; gravelly loam

Bt1—3 to 9 inches; very gravelly loam

Bt2—9 to 21 inches; very gravelly loam

Bt3—21 to 38 inches; very cobbly loam

Bt4—38 to 54 inches; extremely gravelly loam

R—54 inches; bedrock

Characteristics of Walkermine Very Gravelly Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons and on metamorphic mountains

Parent material: Gravelly and loamy residuum and/or colluvium derived from metamorphic rocks

Observed vegetation: Douglas-fir, ponderosa pine, incense cedar, sugar pine, canyon live oak, tanoak, California black oak, white fir, dwarf tanoak, greenleaf manzanita, Sierra chinquapin, and prostrate ceanothus

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 15 to 75 percent coarse, subangular gravel, 0 to 30 percent subangular cobbles, 0 to 30 percent subangular stones, 0 to 30 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 4 to 20 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 0.7 inch)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

- Oi—0 to 1 inch; slightly decomposed plant material
- A—1 to 3 inches; very gravelly loam
- Bt—3 to 12 inches; very gravelly loam
- R—12 inches; bedrock

Minor Components in Map Unit 807**Rock outcrop**

- Composition:* 6 percent
- Slope:* 30 to 50 percent
- Geomorphic position:* Side slopes in canyons and on metamorphic mountains
- Hydric soil status:* Not hydric

Haploxerults with bedrock at a depth of more than 60 inches and similar soils

- Composition:* 2 percent
- Slope:* 30 to 50 percent
- Geomorphic position:* Side slopes in canyons and on metamorphic mountains
- Hydric soil status:* Not hydric

Soils that are 20 to 60 inches deep to paralithic bedrock

- Composition:* 2 percent
- Slope:* 30 to 50 percent
- Geomorphic position:* Side slopes in canyons and on metamorphic mountains
- Hydric soil status:* Not hydric

808—Bottlehill-Walkermine-Logtrain complex, 50 to 70 percent slopes**Map Unit Setting**

- General location:* Northeastern Butte County
- Major uses:* Timber production, wildlife habitat, and watershed
- Major land resource area:* 22A
- Landscape:* Northern Sierra Nevada Mountains
- Elevation:* 2,995 to 5,275 feet (914 to 1,609 meters)
- Mean annual precipitation:* 68 to 76 inches (1,727 to 1,930 millimeters)
- Mean annual air temperature:* 48 to 54 degrees F (9 to 12 degrees C)
- Frost-free period:* 100 to 145 days

Map Unit Composition

- Bottlehill very gravelly loam—45 percent
- Walkermine very gravelly loam—20 percent
- Logtrain gravelly loam—20 percent
- Minor components—15 percent

Characteristics of Bottlehill Very Gravelly Loam

- Slope:* 50 to 70 percent
- Geomorphic position:* Backslopes in canyons
- Parent material:* Gravelly and loamy colluvium derived from metamorphic rocks
- Observed vegetation:* Douglas-fir, ponderosa pine, incense cedar, sugar pine, canyon live oak, tanoak, California black oak, white fir, dwarf tanoak, greenleaf manzanita, Sierra chinquapin, and prostrate ceanothus
- Texture of the surface layer:* Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 35 to 75 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 2.1 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material

Oe—0.5 inch to 2 inches; moderately decomposed plant material

A1—2 to 4 inches; very gravelly loam

A2—4 to 9 inches; very gravelly loam

Bt1—9 to 13 inches; very gravelly loam

Bt2—13 to 22 inches; very gravelly loam

Bt3—22 to 33 inches; extremely gravelly clay loam

R—33 inches; bedrock

Characteristics of Walkermine Very Gravelly Loam

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Parent material: Gravelly and loamy residuum and/or colluvium derived from metamorphic rocks

Observed vegetation: Douglas-fir, ponderosa pine, incense cedar, sugar pine, canyon live oak, tanoak, California black oak, white fir, dwarf tanoak, greenleaf manzanita, Sierra chinquapin, and prostrate ceanothus

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 15 to 75 percent coarse, subangular gravel, 0 to 30 percent subangular cobbles, 0 to 30 percent subangular stones, 0 to 30 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 4 to 20 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 0.7 inch)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; very gravelly loam

Bt—3 to 12 inches; very gravelly loam

R—12 inches; bedrock

Characteristics of Logtrain Gravelly Loam

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Parent material: Gravelly and loamy colluvium derived from metamorphic rocks

Observed vegetation: Douglas-fir, ponderosa pine, incense cedar, sugar pine, canyon live oak, tanoak, California black oak, white fir, dwarf tanoak, greenleaf manzanita, Sierra chinquapin, and prostrate ceanothus

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 50 percent medium, subangular gravel, 0 to 30 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 10 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 5.0 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; gravelly loam

Bt1—3 to 9 inches; very gravelly loam

Bt2—9 to 21 inches; very gravelly loam

Bt3—21 to 38 inches; very cobbly loam

Bt4—38 to 54 inches; extremely gravelly loam

R—54 inches; bedrock

Minor Components in Map Unit 808

Rock outcrop

Composition: 8 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Scree

Composition: 3 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Haploxerults with bedrock at a depth of more than 60 inches and similar soils

Composition: 2 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Soils that are 20 to 60 inches deep to paralithic bedrock

Composition: 2 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

809—Walkermine-Bottlehill-Logtrain-Rock outcrop complex, 70 to 110 percent slopes

Map Unit Setting

General location: Northeastern Butte County

Major uses: Wildlife habitat and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 2,595 to 5,155 feet (792 to 1,572 meters)

Mean annual precipitation: 72 to 74 inches (1,829 to 1,880 millimeters)

Mean annual air temperature: 50 to 54 degrees F (10 to 12 degrees C)

Frost-free period: 100 to 145 days

Map Unit Composition

Walkermine very gravelly loam—45 percent

Bottlehill very gravelly loam—15 percent

Logtrain gravelly loam—15 percent

Rock outcrop (metavolcanic)—15 percent

Minor components—10 percent

Characteristics of Walkermine Very Gravelly Loam

Slope: 70 to 110 percent

Geomorphic position: Backslopes in canyons

Parent material: Gravelly and loamy colluvium derived from metamorphic rocks

Observed vegetation: Douglas-fir, ponderosa pine, incense cedar, sugar pine, canyon live oak, tanoak, California black oak, white fir, dwarf tanoak, greenleaf manzanita, Sierra chinquapin, and prostrate ceanothus

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 15 to 75 percent coarse, subangular gravel, 0 to 30 percent subangular cobbles, 0 to 30 percent subangular stones, 0 to 30 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 4 to 20 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 0.7 inch)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; very gravelly loam

Bt—3 to 12 inches; very gravelly loam

R—12 inches; bedrock

Characteristics of Bottlehill Very Gravelly Loam

Slope: 70 to 110 percent

Geomorphic position: Backslopes in canyons

Parent material: Gravelly and loamy colluvium derived from metamorphic rocks

Observed vegetation: Douglas-fir, ponderosa pine, incense cedar, sugar pine, canyon live oak, tanoak, California black oak, white fir, dwarf tanoak, greenleaf manzanita, Sierra chinquapin, and prostrate ceanothus

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 35 to 75 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 2.1 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material

Oe—0.5 inch to 2 inches; moderately decomposed plant material

A1—2 to 4 inches; very gravelly loam

A2—4 to 9 inches; very gravelly loam

Bt1—9 to 13 inches; very gravelly loam

Bt2—13 to 22 inches; very gravelly loam

Bt3—22 to 33 inches; extremely gravelly clay loam

R—33 inches; bedrock

Characteristics of Logtrain Gravelly Loam

Slope: 70 to 110 percent

Geomorphic position: Backslopes in canyons

Parent material: Gravelly and loamy colluvium derived from metamorphic rocks

Observed vegetation: Douglas-fir, ponderosa pine, incense cedar, sugar pine, canyon live oak, tanoak, California black oak, white fir, dwarf tanoak, greenleaf manzanita, Sierra chinquapin, and prostrate ceanothus

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 50 percent medium, subangular gravel, 0 to 30 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 10 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 5.0 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; gravelly loam

Bt1—3 to 9 inches; very gravelly loam

Bt2—9 to 21 inches; very gravelly loam

Bt3—21 to 38 inches; very cobbly loam

Bt4—38 to 54 inches; extremely gravelly loam

R—54 inches; bedrock

Characteristics of Rock Outcrop (Metavolcanic)

Slope: 70 to 110 percent

Geomorphic position: Backslopes in canyons

Surface runoff (bare conditions): Very high

Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 809

Scree

Composition: 5 percent

Slope: 70 to 110 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Haploxerults with bedrock at a depth of more than 60 inches and similar soils

Composition: 3 percent

Slope: 70 to 110 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Soils that are 20 to 60 inches deep to paralithic bedrock

Composition: 2 percent

Slope: 70 to 110 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

810—Dixmine-Mac-Spine complex, 30 to 50 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra mountains

Elevation: 2,195 to 3,795 feet (670 to 1,158 meters)

Mean annual precipitation: 64 to 73 inches (1,626 to 1,854 millimeters)

Mean annual air temperature: 52 to 55 degrees F (11 to 13 degrees C)

Frost-free period: 140 to 200 days

Map Unit Composition

Dixmine very gravelly loam—35 percent

Mac gravelly loam—25 percent

Spine very gravelly loam—25 percent

Minor components—15 percent

Characteristics of Dixmine Very Gravelly Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons

Parent material: Gravelly, loamy and clayey residuum and/or colluvium derived from metavolcanic rocks

Observed vegetation: Douglas-fir, tanoak, California black oak, canyon live oak, ponderosa pine, sugar pine, bigleaf maple, incense cedar, manzanita, deerbrush, and Pacific poison oak

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 25 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 10 percent subangular stones

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 5.2 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

Oe—1 to 2 inches; moderately decomposed plant material

A—2 to 6 inches; very gravelly loam
 Bt1—6 to 11 inches; very gravelly loam
 Bt2—11 to 17 inches; gravelly loam
 Bt3—17 to 30 inches; very cobbly clay loam
 Bt4—30 to 41 inches; very gravelly clay loam
 Bt5—41 to 54 inches; extremely cobbly clay loam
 Cr—54 inches; bedrock

Characteristics of Mac Gravelly Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons

Parent material: Fine-loamy residuum and/or colluvium derived from metavolcanic rocks

Observed vegetation: Douglas-fir, tanoak, California black oak, canyon live oak, ponderosa pine, sugar pine, bigleaf maple, incense cedar, manzanita, deerbrush, and Pacific poison oak

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 50 percent medium gravel, 0 to 10 percent cobbles, 0 to 5 percent stones

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.6 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 4 inches; gravelly loam

Bt1—4 to 9 inches; very gravelly loam

Bt2—9 to 15 inches; gravelly silty clay loam

Bt3—15 to 23 inches; silty clay loam

Crt—23 to 37 inches; extremely gravelly silt loam

Cr—37 inches; bedrock

Characteristics of Spine Very Gravelly Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons

Parent material: Gravelly colluvium and/or residuum weathered from metavolcanic rocks

Observed vegetation: Douglas-fir, tanoak, California black oak, canyon live oak, ponderosa pine, sugar pine, bigleaf maple, incense cedar, manzanita, deerbrush, and Pacific poison oak

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 20 to 60 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 10 to 20 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 0.9 inch)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7e-8

Land capability, nonirrigated: 7e-8

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; very gravelly loam

Bt1—3 to 9 inches; extremely gravelly loam

Bt2—9 to 16 inches; extremely gravelly clay loam

R—16 inches; bedrock

Minor Components in Map Unit 810

Loamy-skeletal soils that are 40 to 60 inches deep to bedrock

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons

Hydric soil status: Not hydric

Toadtown and similar soils

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons

Hydric soil status: Not hydric

Haploxerults, loamy-skeletal, more than 60 inches deep to bedrock, and similar soils

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons

Hydric soil status: Not hydric

Soils that are 2 to 10 inches deep to bedrock

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons

Hydric soil status: Not hydric

Powellton and similar soils

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons

Hydric soil status: Not hydric

Beecee and similar soils*Composition:* 2 percent*Slope:* 30 to 50 percent*Geomorphic position:* Side slopes in canyons*Hydric soil status:* Not hydric**Soils that formed in hydraulic mining debris***Composition:* 1 percent*Slope:* 2 to 30 percent*Geomorphic position:* The bottom of canyons*Hydric soil status:* Not hydric**Rock outcrop***Composition:* 1 percent*Slope:* 30 to 50 percent*Geomorphic position:* Side slopes in canyons*Hydric soil status:* Not hydric**811—Powellton-Toadtown complex, 3 to 15 percent slopes*****Map Unit Setting****General location:* Northeastern Butte County*Major uses:* Timber production, wildlife habitat, and watershed*Major land resource area:* 22A*Landscape:* Northern Sierra Nevada Mountains*Elevation:* 3,120 to 4,235 feet (951 to 1,292 meters)*Mean annual precipitation:* 65 to 75 inches (1,651 to 1,905 millimeters)*Mean annual air temperature:* 52 to 54 degrees F (11 to 12 degrees C)*Frost-free period:* 140 to 180 days***Map Unit Composition***

Powellton gravelly loam—50 percent

Toadtown loam—40 percent

Minor components—10 percent

Characteristics of Powellton Gravelly Loam*Slope:* 3 to 15 percent*Geomorphic position:* Ridgetops on metamorphic mountains*Parent material:* Fine-loamy residuum weathered from metamorphic rocks*Observed vegetation:* Ponderosa pine, tanoak, sugar pine, Douglas-fir, incense cedar, white fir, whitevein shinleaf, and dogwood*Texture of the surface layer:* Slightly decomposed plant material*Percentage of the surface covered by rock fragments:* 0 to 35 percent fine, subangular gravel, 0 to 5 percent subangular cobbles*Restrictive feature:* None identified*Shrink-swell potential:* Low (LEP of less than 3)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* None*Annual ponding frequency:* None*Water table (zone of saturation):* None observed*Available water capacity:* Very high (about 10.3 inches)

Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material
 Oe—0.5 inch to 2 inches; moderately decomposed plant material
 A—2 to 4 inches; gravelly loam
 Bt1—4 to 9 inches; gravelly loam
 Bt2—9 to 15 inches; loam
 Bt3—15 to 24 inches; clay loam
 Bt4—24 to 30 inches; clay loam
 Bt5—30 to 41 inches; silt loam
 Bt6—41 to 61 inches; loam
 Bt7—61 to 83 inches; loam

Characteristics of Toadtown Loam

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on metamorphic mountains

Parent material: Clayey residuum weathered from metamorphic rocks

Observed vegetation: Ponderosa pine, tanoak, sugar pine, Douglas-fir, incense cedar, white fir, whitevein shinleaf, and dogwood

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 35 percent fine, subangular gravel, 0 to 5 percent subangular cobbles

Depth to a restrictive feature (paralithic bedrock): 60 to 120 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very high (about 10.1 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material
 Oe—2 to 3 inches; moderately decomposed plant material
 A—3 to 5 inches; loam
 Bt1—5 to 8 inches; loam
 Bt2—8 to 13 inches; clay loam
 Bt3—13 to 18 inches; clay
 Bt4—18 to 27 inches; clay
 Bt5—27 to 51 inches; clay loam

Bt6—51 to 65 inches; loam

Bt7—65 to 75 inches; loam

Crt—75 to 79 inches; loam

Minor Components in Map Unit 811

Dixmine and similar soils

Composition: 5 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on metamorphic mountains

Hydric soil status: Not hydric

Endoaquolls loam and similar soils

Composition: 2 percent

Slope: 0 to 8 percent

Geomorphic position: Meadows in mountains

Hydric soil status: Hydric

Obstruction and similar soils

Composition: 2 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on metamorphic mountains

Hydric soil status: Not hydric

Rock outcrop

Composition: 1 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on metamorphic mountains

Hydric soil status: Not hydric

812—Powellton-Toadtown complex, 15 to 30 percent slopes

Map Unit Setting

General location: Northeastern Butte County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 2,880 to 4,280 feet (878 to 1,305 meters)

Mean annual precipitation: 65 to 75 inches (1,651 to 1,905 millimeters)

Mean annual air temperature: 52 to 54 degrees F (11 to 12 degrees C)

Frost-free period: 140 to 180 days

Map Unit Composition

Powellton gravelly loam—50 percent

Toadtown loam—40 percent

Minor components—10 percent

Characteristics of Powellton Gravelly Loam

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and side slopes on metamorphic mountains

Parent material: Fine-loamy colluvium and/or residuum weathered from metamorphic rocks

Observed vegetation: Ponderosa pine, tanoak, sugar pine, Douglas-fir, incense cedar, white fir, whitevein shinleaf, and dogwood

Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 35 percent fine, subangular gravel, 0 to 5 percent subangular cobbles
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very high (about 10.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material
 Oe—0.5 inch to 2 inches; moderately decomposed plant material
 A—2 to 4 inches; gravelly loam
 Bt1—4 to 9 inches; gravelly loam
 Bt2—9 to 15 inches; loam
 Bt3—15 to 24 inches; clay loam
 Bt4—24 to 30 inches; clay loam
 Bt5—30 to 41 inches; silt loam
 Bt6—41 to 61 inches; loam
 Bt7—61 to 83 inches; loam

Characteristics of Toadtown Loam

Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Parent material: Clayey colluvium and/or residuum weathered from metamorphic rocks
Observed vegetation: Ponderosa pine, tanoak, sugar pine, Douglas-fir, incense cedar, white fir, whitevein shinleaf, and dogwood
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 35 percent fine, subangular gravel, 0 to 5 percent subangular cobbles
Depth to a restrictive feature (paralithic bedrock): 60 to 120 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very high (about 10.1 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material
 Oe—2 to 3 inches; moderately decomposed plant material
 A—3 to 5 inches; loam
 Bt1—5 to 8 inches; loam
 Bt2—8 to 13 inches; clay loam
 Bt3—13 to 18 inches; clay
 Bt4—18 to 27 inches; clay
 Bt5—27 to 51 inches; clay loam
 Bt6—51 to 65 inches; loam
 Bt7—65 to 75 inches; loam
 Crt—75 to 79 inches; loam

Minor Components in Map Unit 812**Dixmine and similar soils***Composition:* 6 percent*Slope:* 15 to 30 percent*Geomorphic position:* Ridgetops and side slopes on metamorphic mountains*Hydric soil status:* Not hydric**Obstruction and similar soils***Composition:* 2 percent*Slope:* 15 to 30 percent*Geomorphic position:* Ridgetops and side slopes on metamorphic mountains*Hydric soil status:* Not hydric**Rock outcrop***Composition:* 1 percent*Slope:* 15 to 30 percent*Geomorphic position:* Ridgetops and side slopes on metamorphic mountains*Hydric soil status:* Not hydric**Mac and similar soils***Composition:* 1 percent*Slope:* 15 to 30 percent*Geomorphic position:* Ridgetops and side slopes on metamorphic mountains*Hydric soil status:* Not hydric**813—Powellton-Toadtown complex, 30 to 50 percent slopes*****Map Unit Setting****General location:* Northeastern Butte County*Major uses:* Timber production, wildlife habitat, and watershed*Major land resource area:* 22A*Landscape:* Northern Sierra Nevada Mountains*Elevation:* 2,555 to 4,080 feet (780 to 1,244 meters)*Mean annual precipitation:* 70 to 75 inches (1,778 to 1,905 millimeters)*Mean annual air temperature:* 52 to 54 degrees F (11 to 12 degrees C)*Frost-free period:* 140 to 170 days***Map Unit Composition***

Powellton gravelly loam—50 percent

Toadtown loam—40 percent

Minor components—10 percent

Characteristics of Powellton Gravelly Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes in ravines and on metamorphic mountains

Parent material: Fine-loamy colluvium and/or residuum weathered from metamorphic rocks

Observed vegetation: Ponderosa pine, tanoak, sugar pine, Douglas-fir, incense cedar, white fir, California black oak, whitevein shinleaf, and dogwood

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 35 percent fine, subangular gravel, 0 to 5 percent subangular cobbles

Restrictive feature: None identified

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very high (about 10.3 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material

Oe—0.5 inch to 2 inches; moderately decomposed plant material

A—2 to 4 inches; gravelly loam

Bt1—4 to 9 inches; gravelly loam

Bt2—9 to 15 inches; loam

Bt3—15 to 24 inches; clay loam

Bt4—24 to 30 inches; clay loam

Bt5—30 to 41 inches; silt loam

Bt6—41 to 61 inches; loam

Bt7—61 to 83 inches; loam

Characteristics of Toadtown Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes in ravines and on metamorphic mountains

Parent material: Fine-loamy colluvium and/or residuum weathered from metamorphic rocks

Observed vegetation: Ponderosa pine, tanoak, sugar pine, Douglas-fir, incense cedar, white fir, California black oak, whitevein shinleaf, and dogwood

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 35 percent fine, subangular gravel, 0 to 5 percent subangular cobbles

Depth to a restrictive feature (paralithic bedrock): 60 to 120 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed
Available water capacity: Very high (about 10.1 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material
 Oe—2 to 3 inches; moderately decomposed plant material
 A—3 to 5 inches; loam
 Bt1—5 to 8 inches; loam
 Bt2—8 to 13 inches; clay loam
 Bt3—13 to 18 inches; clay
 Bt4—18 to 27 inches; clay
 Bt5—27 to 51 inches; clay loam
 Bt6—51 to 65 inches; loam
 Bt7—65 to 75 inches; loam
 Crt—75 to 79 inches; loam

Minor Components in Map Unit 813

Dixmine and similar soils

Composition: 4 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in ravines and on metamorphic mountains
Hydric soil status: Not hydric

Mac and similar soils

Composition: 4 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in ravines and on metamorphic mountains
Hydric soil status: Not hydric

Rock outcrop

Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in ravines and on metamorphic mountains
Hydric soil status: Not hydric

814—Mountyana gravelly loam, 2 to 15 percent slopes

Map Unit Setting

General location: Northeastern Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22B
Landscape: Southern Cascade Mountains
Elevation: 2,355 to 4,395 feet (719 to 1,341 meters)
Mean annual precipitation: 60 to 74 inches (1,524 to 1,880 millimeters)
Mean annual air temperature: 50 to 55 degrees F (10 to 13 degrees C)
Frost-free period: 110 to 210 days

Map Unit Composition

Mountyana gravelly loam—80 percent

Minor components—20 percent

Characteristics of Mountyana Gravelly Loam

Slope: 2 to 15 percent

Geomorphic position: The top of volcanic ridges

Parent material: Fine-loamy residuum weathered from volcanic breccia

Observed vegetation: Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak, tanoak, and dogwood

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 30 percent medium, subrounded gravel

Depth to a restrictive feature (paralithic bedrock): 60 to 80 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.5 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

Oe—1 to 2 inches; moderately decomposed plant material

A—2 to 4 inches; gravelly loam

Bt1—4 to 9 inches; gravelly loam

Bt2—9 to 13 inches; gravelly clay loam

Bt3—13 to 19 inches; gravelly clay loam

Bt4—19 to 26 inches; gravelly clay loam

Bt5—26 to 37 inches; gravelly clay loam

Bt/Cr—37 to 52 inches; extremely gravelly clay loam

Cr/Bt—52 to 65 inches; extremely gravelly loam

Cr—65 inches; bedrock

Minor Components in Map Unit 814

Schott and similar soils

Composition: 9 percent

Slope: 2 to 15 percent

Geomorphic position: The top of volcanic ridges

Hydric soil status: Not hydric

Paradiso and similar soils

Composition: 4 percent

Slope: 2 to 15 percent

Geomorphic position: The top of volcanic ridges

Hydric soil status: Not hydric

Redbone and similar soils*Composition:* 4 percent*Slope:* 2 to 15 percent*Geomorphic position:* The top of volcanic ridges*Hydric soil status:* Not hydric**Lydon and similar soils***Composition:* 3 percent*Slope:* 2 to 15 percent*Geomorphic position:* The top of volcanic ridges*Hydric soil status:* Not hydric**815—Mountyana gravelly loam, 15 to 30 percent slopes*****Map Unit Setting****General location:* Northeastern Butte County*Major uses:* Timber production, wildlife habitat, and watershed*Major land resource area:* 22B*Landscape:* Southern Cascade Mountains*Elevation:* 2,155 to 4,235 feet (658 to 1,292 meters)*Mean annual precipitation:* 60 to 74 inches (1,524 to 1,880 millimeters)*Mean annual air temperature:* 52 to 55 degrees F (11 to 13 degrees C)*Frost-free period:* 115 to 210 days***Map Unit Composition***

Mountyana gravelly loam—80 percent

Minor components—20 percent

Characteristics of Mountyana Gravelly Loam*Slope:* 15 to 30 percent*Geomorphic position:* Side slopes on volcanic ridges*Parent material:* Fine-loamy residuum weathered from volcanic breccia*Observed vegetation:* Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak, tanoak, and dogwood*Texture of the surface layer:* Slightly decomposed plant material*Percentage of the surface covered by rock fragments:* 5 to 30 percent medium, subrounded gravel*Depth to a restrictive feature (paralithic bedrock):* 60 to 80 inches*Shrink-swell potential:* Moderate (LEP of 3 to less than 6)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* None*Annual ponding frequency:* None*Water table (zone of saturation):* None observed*Available water capacity:* Moderate (about 6.5 inches)*Natural drainage class:* Well drained*Surface runoff (bare conditions):* High***Interpretive groups****Land capability, irrigated:* 4e-1*Land capability, nonirrigated:* 4e-1*Hydric soil status:* Not hydric*Hydrologic soil group:* B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
 Oe—1 to 2 inches; moderately decomposed plant material
 A—2 to 4 inches; gravelly loam
 Bt1—4 to 9 inches; gravelly loam
 Bt2—9 to 13 inches; gravelly clay loam
 Bt3—13 to 19 inches; gravelly clay loam
 Bt4—19 to 26 inches; gravelly clay loam
 Bt5—26 to 37 inches; gravelly clay loam
 Bt/Cr—37 to 52 inches; extremely gravelly clay loam
 Cr/Bt—52 to 65 inches; extremely gravelly loam
 Cr—65 inches; bedrock

Minor Components in Map Unit 815**Schott and similar soils**

Composition: 9 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Hydric soil status: Not hydric

Lydon and similar soils

Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Hydric soil status: Not hydric

Redbone and similar soils

Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Hydric soil status: Not hydric

Paradiso and similar soils

Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Hydric soil status: Not hydric

817—Lydon very gravelly medial coarse sandy loam, 2 to 15 percent slopes***Map Unit Setting***

General location: Northern Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22B
Landscape: Southern Cascade Mountains
Elevation: 3,375 to 4,700 feet (1,030 to 1,433 meters)
Mean annual precipitation: 70 to 72 inches (1,778 to 1,829 millimeters)
Mean annual air temperature: 52 to 54 degrees F (11 to 12 degrees C)
Frost-free period: 110 to 165 days

Map Unit Composition

Lydon very gravelly medial coarse sandy loam—80 percent
 Minor components—20 percent

Characteristics of Lydon Very Gravelly Medial Coarse Sandy Loam

Slope: 2 to 15 percent

Geomorphic position: The top of volcanic ridges

Parent material: Sandy and gravelly residuum weathered from volcanic breccia

Observed vegetation: California black oak, ponderosa pine, Douglas-fir, incense cedar, canyon live oak, tanoak, and manzanita

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 20 to 50 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones

Depth to a restrictive feature (lithic bedrock): 20 to 40 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 0.9 inch)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material

Oe—0.5 to 1 inch; moderately decomposed plant material

A—1 to 3 inches; very gravelly medial coarse sandy loam

Bw1—3 to 6 inches; very gravelly medial coarse sandy loam

Bw2—6 to 13 inches; extremely gravelly sandy loam

Bw3—13 to 21 inches; extremely gravelly sandy loam

Bw4—21 to 35 inches; extremely cobbly fine sandy loam

R—35 inches; bedrock

Minor Components in Map Unit 817

Schott and similar soils

Composition: 6 percent

Slope: 2 to 15 percent

Geomorphic position: The top of volcanic ridges

Hydric soil status: Not hydric

Soils that are less than 20 inches deep to lithic bedrock

Composition: 6 percent

Slope: 2 to 15 percent

Geomorphic position: The top of volcanic ridges

Hydric soil status: Not hydric

Redbone and similar soils

Composition: 4 percent

Slope: 2 to 15 percent

Geomorphic position: The top of volcanic ridges

Hydric soil status: Not hydric

Mountyana and similar soils*Composition:* 2 percent*Slope:* 2 to 15 percent*Geomorphic position:* The top of volcanic ridges*Hydric soil status:* Not hydric**Rock outcrop***Composition:* 2 percent*Slope:* 2 to 15 percent*Geomorphic position:* The top of volcanic ridges*Hydric soil status:* Not hydric**818—Lydon very gravelly medial coarse sandy loam, 15 to 30 percent slopes*****Map Unit Setting****General location:* Northern Butte County*Major uses:* Timber production, wildlife habitat, and watershed*Major land resource area:* 22B*Landscape:* Southern Cascade Mountains*Elevation:* 2,595 to 4,675 feet (792 to 1,426 meters)*Mean annual precipitation:* 60 to 72 inches (1,524 to 1,829 millimeters)*Mean annual air temperature:* 52 to 55 degrees F (11 to 13 degrees C)*Frost-free period:* 125 to 215 days***Map Unit Composition***

Lydon very gravelly medial coarse sandy loam—75 percent

Minor components—25 percent

Characteristics of Lydon Very Gravelly Medial Coarse Sandy Loam*Slope:* 15 to 30 percent*Geomorphic position:* The top and shoulder slopes of volcanic ridges*Parent material:* Sandy and gravelly colluvium and/or residuum weathered from volcanic breccia*Observed vegetation:* California black oak, ponderosa pine, Douglas-fir, incense cedar, canyon live oak, tanoak, and manzanita*Texture of the surface layer:* Slightly decomposed plant material*Percentage of the surface covered by rock fragments:* 20 to 50 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones*Depth to a restrictive feature (lithic bedrock):* 20 to 40 inches*Shrink-swell potential:* Low (LEP of less than 3)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* None*Annual ponding frequency:* None*Water table (zone of saturation):* None observed*Available water capacity:* Very low (about 0.9 inch)*Natural drainage class:* Somewhat excessively drained*Surface runoff (bare conditions):* High***Interpretive groups****Land capability, irrigated:* 4e-1*Land capability, nonirrigated:* 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material
 Oe—0.5 to 1 inch; moderately decomposed plant material
 A—1 to 3 inches; very gravelly medial coarse sandy loam
 Bw1—3 to 6 inches; very gravelly medial coarse sandy loam
 Bw2—6 to 13 inches; extremely gravelly sandy loam
 Bw3—13 to 21 inches; extremely gravelly sandy loam
 Bw4—21 to 35 inches; extremely cobbly fine sandy loam
 R—35 inches; bedrock

Minor Components in Map Unit 818

Soils that are less than 20 inches deep to lithic bedrock

Composition: 8 percent

Slope: 15 to 30 percent

Geomorphic position: The top and shoulder slopes of volcanic ridges

Hydric soil status: Not hydric

Redbone and similar soils

Composition: 6 percent

Slope: 15 to 30 percent

Geomorphic position: The top and shoulder slopes of volcanic ridges

Hydric soil status: Not hydric

Rock outcrop

Composition: 6 percent

Slope: 15 to 30 percent

Geomorphic position: The top and shoulder slopes of volcanic ridges

Hydric soil status: Not hydric

Schott and similar soils

Composition: 3 percent

Slope: 15 to 30 percent

Geomorphic position: The top and shoulder slopes of volcanic ridges

Hydric soil status: Not hydric

Mounyana and similar soils

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: The top and shoulder slopes of volcanic ridges

Hydric soil status: Not hydric

819—Lydon-Rock outcrop complex, 30 to 50 percent slopes

Map Unit Setting

General location: Northern Butte County

Major uses: Wildlife habitat, watershed, and timber production

Major land resource area: 22B

Landscape: Southern Cascade Mountains

Elevation: 2,040 to 4,795 feet (622 to 1,463 meters)

Mean annual precipitation: 55 to 72 inches (1,397 to 1,829 millimeters)

Mean annual air temperature: 52 to 55 degrees F (11 to 13 degrees C)

Frost-free period: 120 to 230 days

Map Unit Composition

Lydon very gravelly medial coarse sandy loam—65 percent

Rock outcrop (mudflow breccia)—20 percent

Minor components—15 percent

Characteristics of Lydon Very Gravelly Medial Coarse Sandy Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons

Parent material: Sandy and gravelly colluvium derived from volcanic breccia

Observed vegetation: Tanoak, Douglas-fir, California black oak, ponderosa pine, incense cedar, canyon live oak, manzanita, Pacific poison oak, and annual grasses and forbs

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 20 to 50 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones

Depth to a restrictive feature (lithic bedrock): 20 to 40 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 0.9 inch)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material

Oe—0.5 to 1 inch; moderately decomposed plant material

A—1 to 3 inches; very gravelly medial coarse sandy loam

Bw1—3 to 6 inches; very gravelly medial coarse sandy loam

Bw2—6 to 13 inches; extremely gravelly sandy loam

Bw3—13 to 21 inches; extremely gravelly sandy loam

Bw4—21 to 35 inches; extremely cobbly fine sandy loam

R—35 inches; bedrock

Characteristics of Rock Outcrop (Mudflow Breccia)

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons

Surface runoff (bare conditions): Very high

Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 819

Soils that are less than 20 inches deep to lithic bedrock

Composition: 8 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons

Hydric soil status: Not hydric

Redbone and similar soils

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons

Hydric soil status: Not hydric

Schott and similar soils

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons

Hydric soil status: Not hydric

Beecee and similar soils

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons

Hydric soil status: Not hydric

820—Lydon-Rock outcrop complex, 50 to 70 percent slopes

Map Unit Setting

General location: Northern Butte County

Major uses: Wildlife habitat and watershed

Major land resource area: 22B

Landscape: Southern Cascade Mountains

Elevation: 2,495 to 6,085 feet (761 to 1,856 meters)

Mean annual precipitation: 67 to 72 inches (1,702 to 1,829 millimeters)

Mean annual air temperature: 52 to 54 degrees F (11 to 12 degrees C)

Frost-free period: 110 to 185 days

Map Unit Composition

Lydon very gravelly medial coarse sandy loam—60 percent

Rock outcrop (mudflow breccia)—25 percent

Minor components—15 percent

Characteristics of Lydon Very Gravelly Medial Coarse Sandy Loam

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Parent material: Sandy and gravelly colluvium derived from volcanic breccia

Observed vegetation: Douglas-fir, white fir, California black oak, tanoak, canyon live oak, ponderosa pine, incense cedar, manzanita, Pacific poison oak, and annual grasses and forbs

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 20 to 50 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones

Depth to a restrictive feature (lithic bedrock): 20 to 40 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 0.9 inch)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material
 Oe—0.5 to 1 inch; moderately decomposed plant material
 A—1 to 3 inches; very gravelly medial coarse sandy loam
 Bw1—3 to 6 inches; very gravelly medial coarse sandy loam
 Bw2—6 to 13 inches; extremely gravelly sandy loam
 Bw3—13 to 21 inches; extremely gravelly sandy loam
 Bw4—21 to 35 inches; extremely cobbly fine sandy loam
 R—35 inches; bedrock

Characteristics of Rock Outcrop (Mudflow Breccia)

Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 820

Soils that are less than 20 inches deep to lithic bedrock

Composition: 10 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Schott and similar soils

Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Redbone and similar soils

Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Beecee and similar soils

Composition: 1 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

821—Lydon-Rock outcrop complex, 70 to 100 percent slopes

Map Unit Setting

General location: Northern Butte County

Major uses: Wildlife habitat and watershed

Major land resource area: 22B

Landscape: Southern Cascade Mountains

Elevation: 2,595 to 3,720 feet (792 to 1,134 meters)

Mean annual precipitation: 68 to 74 inches (1,727 to 1,880 millimeters)

Mean annual air temperature: 52 to 54 degrees F (11 to 12 degrees C)

Frost-free period: 140 to 170 days

Map Unit Composition

Lydon very gravelly medial coarse sandy loam—55 percent

Rock outcrop (mudflow breccia)—30 percent

Minor components—15 percent

Characteristics of Lydon Very Gravelly Medial Coarse Sandy Loam

Slope: 70 to 100 percent

Geomorphic position: Backslopes in canyons

Parent material: Sandy and gravelly colluvium derived from volcanic breccia

Observed vegetation: Douglas-fir, white fir, California black oak, tanoak, canyon live oak, ponderosa pine, incense cedar, manzanita, Pacific poison oak, and annual grasses and forbs

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 20 to 50 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones

Depth to a restrictive feature (lithic bedrock): 20 to 40 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 0.9 inch)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material

Oe—0.5 to 1 inch; moderately decomposed plant material

A—1 to 3 inches; very gravelly medial coarse sandy loam

Bw1—3 to 6 inches; very gravelly medial coarse sandy loam

Bw2—6 to 13 inches; extremely gravelly sandy loam

Bw3—13 to 21 inches; extremely gravelly sandy loam
 Bw4—21 to 35 inches; extremely cobbly fine sandy loam
 R—35 inches; bedrock

Characteristics of Rock Outcrop (Mudflow Breccia)

Slope: 70 to 100 percent
Geomorphic position: Backslopes in canyons
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 821

Soils that are less than 20 inches deep to lithic bedrock

Composition: 12 percent
Slope: 70 to 100 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Schott and similar soils

Composition: 1 percent
Slope: 70 to 100 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Redbone and similar soils

Composition: 1 percent
Slope: 70 to 100 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Beecee and similar soils

Composition: 1 percent
Slope: 70 to 100 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

822—Bonepile gravelly medial loam, 2 to 15 percent slopes

Map Unit Setting

General location: Northeastern Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22B
Landscape: Southern Cascade Mountains
Elevation: 3,595 to 5,360 feet (1,097 to 1,634 meters)
Mean annual precipitation: 70 to 80 inches (1,778 to 2,032 millimeters)
Mean annual air temperature: 48 to 52 degrees F (9 to 11 degrees C)
Frost-free period: 100 to 145 days

Map Unit Composition

Bonepile gravelly medial loam—85 percent
 Minor components—15 percent

Characteristics of Bonepile Gravelly Medial Loam

Slope: 2 to 15 percent
Geomorphic position: The top and toeslopes of volcanic ridges

Parent material: Loamy tephra over gravelly and loamy residuum weathered from volcanic rocks

Observed vegetation: Ponderosa pine, white fir, sugar pine, Douglas-fir, California black oak, greenleaf manzanita, Sierra chinquapin, and whitethorn ceanothus

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 35 percent medium, subangular gravel, 0 to 35 percent subangular cobbles, 0 to 30 percent subangular stones, 0 to 30 percent subrounded boulders

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 3.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A1—1 to 3 inches; gravelly medial loam

A2—3 to 9 inches; cobbly medial loam

Bw1—9 to 18 inches; gravelly medial loam

Bw2—18 to 30 inches; very gravelly medial loam

2Bw3—30 to 44 inches; very gravelly medial loam

2Cr—44 inches; bedrock

Minor Components in Map Unit 822

Soils that are less than 40 inches deep to paralithic bedrock

Composition: 7 percent

Slope: 2 to 15 percent

Geomorphic position: The top and toeslopes of volcanic ridges

Hydric soil status: Not hydric

Soils that are more than 60 inches deep to bedrock

Composition: 5 percent

Slope: 2 to 15 percent

Geomorphic position: The top and toeslopes of volcanic ridges

Hydric soil status: Not hydric

Lydon and similar soils

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: The top and toeslopes of volcanic ridges

Hydric soil status: Not hydric

Rock outcrop

Composition: 1 percent

Slope: 2 to 15 percent

Geomorphic position: The top and toeslopes of volcanic ridges

Hydric soil status: Not hydric

823—Bonepile gravelly medial loam, 15 to 30 percent slopes

Map Unit Setting

General location: Northeastern Butte County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22B

Landscape: Southern Cascade Mountains

Elevation: 3,320 to 5,655 feet (1,012 to 1,725 meters)

Mean annual precipitation: 70 to 80 inches (1,778 to 2,032 millimeters)

Mean annual air temperature: 48 to 52 degrees F (9 to 11 degrees C)

Frost-free period: 100 to 145 days

Map Unit Composition

Bonepile gravelly medial loam—85 percent

Minor components—15 percent

Characteristics of Bonepile Gravelly Medial Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes on volcanic ridges

Parent material: Loamy tephra over gravelly and loamy colluvium and/or residuum weathered from volcanic rocks

Observed vegetation: Ponderosa pine, white fir, sugar pine, Douglas-fir, California black oak, greenleaf manzanita, Sierra chinquapin, and whitethorn ceanothus

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 35 percent medium, subangular gravel, 0 to 35 percent subangular cobbles, 0 to 30 percent subangular stones, 0 to 30 percent subrounded boulders

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 3.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A1—1 to 3 inches; gravelly medial loam

A2—3 to 9 inches; cobbly medial loam

Bw1—9 to 18 inches; gravelly medial loam

Bw2—18 to 30 inches; very gravelly medial loam

2Bw3—30 to 44 inches; very gravelly medial loam

2Cr—44 inches; bedrock

Minor Components in Map Unit 823

Soils that are less than 40 inches deep to paralithic bedrock

Composition: 7 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on volcanic ridges

Hydric soil status: Not hydric

Lydon and similar soils

Composition: 4 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on volcanic ridges

Hydric soil status: Not hydric

Soils that are more than 60 inches deep to bedrock

Composition: 3 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on volcanic ridges

Hydric soil status: Not hydric

Rock outcrop

Composition: 1 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on volcanic ridges

Hydric soil status: Not hydric

824—Beecee very gravelly medial loam, 30 to 50 percent slopes

Map Unit Setting

General location: Northeastern Butte County and western Plumas County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22B

Landscape: Southern Cascade Mountains

Elevation: 2,315 to 5,655 feet (707 to 1,725 meters)

Mean annual precipitation: 66 to 80 inches (1,676 to 2,032 millimeters)

Mean annual air temperature: 48 to 54 degrees F (9 to 12 degrees C)

Frost-free period: 95 to 200 days

Map Unit Composition

Beecee very gravelly medial loam—85 percent

Minor components—15 percent

Characteristics of Beecee Very Gravelly Medial Loam

Slope: 30 to 50 percent

Geomorphic position: Backslopes on volcanic ridges and in canyons

Parent material: Tephra-influenced, gravelly and loamy colluvium derived from volcanic rocks over gravelly and stony, loamy residuum weathered from volcanic breccia

Observed vegetation: Douglas-fir, white fir, California black oak, incense cedar, ponderosa pine, sugar pine, tanoak, canyon live oak, dogwood, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 15 to 40 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 10 percent subrounded boulders

Restrictive feature: None identified

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 3.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material

Oe—0.5 to 1 inch; moderately decomposed plant material

A—1 to 4 inches; very gravelly medial loam

Bt1—4 to 8 inches; very gravelly medial loam

Bt2—8 to 15 inches; very gravelly medial loam

Bt3—15 to 22 inches; extremely gravelly medial loam

Bt4—22 to 31 inches; extremely gravelly loam

Bt5—31 to 44 inches; very gravelly loam

2Bt6—44 to 59 inches; very gravelly loam

2Bt7—59 to 68 inches; very gravelly loam

2Bt8—68 to 86 inches; very stony loam

Minor Components in Map Unit 824

Lydon and similar soils

Composition: 5 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on volcanic ridges and in canyons

Hydric soil status: Not hydric

Schott and similar soils

Composition: 5 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on volcanic ridges and in canyons

Hydric soil status: Not hydric

Soils that are less than 20 inches deep to bedrock

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on volcanic ridges and in canyons

Hydric soil status: Not hydric

Extremely bouldery soils

Composition: 2 percent

Slope: 15 to 50 percent

Geomorphic position: Backslopes on volcanic ridges and in canyons

Hydric soil status: Not hydric

825—Beecee-Lydon complex, 50 to 70 percent slopes

Map Unit Setting

General location: Northeastern Butte County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22B

Landscape: Southern Cascade Mountains

Elevation: 2,315 to 5,875 feet (707 to 1,792 meters)

Mean annual precipitation: 66 to 80 inches (1,676 to 2,032 millimeters)

Mean annual air temperature: 48 to 54 degrees F (9 to 12 degrees C)

Frost-free period: 95 to 200 days

Map Unit Composition

Beecee very gravelly medial loam—60 percent

Lydon very gravelly medial coarse sandy loam—20 percent

Minor components—20 percent

Characteristics of Beecee Very Gravelly Medial Loam

Slope: 50 to 70 percent

Geomorphic position: Backslopes in ravines and canyons

Parent material: Tephra-influenced, gravelly and loamy colluvium derived from volcanic rocks over gravelly and stony, loamy residuum weathered from volcanic breccia

Observed vegetation: Douglas-fir, white fir, California black oak, incense cedar, ponderosa pine, sugar pine, tanoak, canyon live oak, dogwood, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 15 to 40 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 10 percent subrounded boulders

Restrictive feature: None identified

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 3.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material

Oe—0.5 to 1 inch; moderately decomposed plant material

A—1 to 4 inches; very gravelly medial loam

Bt1—4 to 8 inches; very gravelly medial loam

Bt2—8 to 15 inches; very gravelly medial loam

Bt3—15 to 22 inches; extremely gravelly medial loam

Bt4—22 to 31 inches; extremely gravelly loam

Bt5—31 to 44 inches; very gravelly loam

2Bt6—44 to 59 inches; very gravelly loam

2Bt7—59 to 68 inches; very gravelly loam

2Bt8—68 to 86 inches; very stony loam

Characteristics of Lydon Very Gravelly Medial Coarse Sandy Loam

Slope: 50 to 70 percent

Geomorphic position: Backslopes in ravines and canyons

Parent material: Sandy and gravelly colluvium derived from volcanic breccia

Observed vegetation: Douglas-fir, white fir, California black oak, tanoak, canyon live oak, ponderosa pine, incense cedar, manzanita, Pacific poison oak, and annual grasses and forbs

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 20 to 50 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones

Depth to a restrictive feature (lithic bedrock): 20 to 40 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 0.9 inch)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material

Oe—0.5 to 1 inch; moderately decomposed plant material

A—1 to 3 inches; very gravelly medial coarse sandy loam

Bw1—3 to 6 inches; very gravelly medial coarse sandy loam

Bw2—6 to 13 inches; extremely gravelly sandy loam

Bw3—13 to 21 inches; extremely gravelly sandy loam

Bw4—21 to 35 inches; extremely cobbly fine sandy loam

R—35 inches; bedrock

Minor Components in Map Unit 825

Soils that are less than 20 inches deep to bedrock

Composition: 8 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in ravines and canyons

Hydric soil status: Not hydric

Schott and similar soils

Composition: 5 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in ravines and in canyons

Hydric soil status: Not hydric

Rock outcrop

Composition: 4 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in ravines and canyons

Hydric soil status: Not hydric

Extremely bouldery soils

Composition: 2 percent

Slope: 15 to 70 percent

Geomorphic position: Footslopes in ravines and canyons

Hydric soil status: Not hydric

Rock outcrop

Composition: 1 percent

Slope: 150 to 175 percent

Geomorphic position: Backslopes in ravines and canyons

Hydric soil status: Not hydric

826—Redbone gravelly medial sandy loam, 3 to 15 percent slopes

Map Unit Setting

General location: Northeastern Butte County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22B

Landscape: Southern Cascade Mountains

Elevation: 3,795 to 5,200 feet (1,158 to 1,585 meters)

Mean annual precipitation: 70 to 75 inches (1,778 to 1,905 millimeters)

Mean annual air temperature: 50 to 52 degrees F (10 to 11 degrees C)

Frost-free period: 100 to 140 days

Map Unit Composition

Redbone gravelly medial sandy loam—80 percent

Minor components—20 percent

Characteristics of Redbone Gravelly Medial Sandy Loam

Slope: 2 to 15 percent

Geomorphic position: The top of volcanic ridges

Parent material: Loamy tephra over gravelly and loamy residuum weathered from volcanic breccia

Observed vegetation: Ponderosa pine, white fir, Douglas-fir, sugar pine, incense cedar, California black oak, dogwood, common snowberry, Sierra chinquapin, greenleaf manzanita, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 10 to 35 percent medium, subrounded gravel, 0 to 15 percent subrounded cobbles, 0 to 10 percent subrounded stones

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.7 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Low

*Interpretive groups**Land capability, irrigated: 3e-1**Land capability, nonirrigated: 3e-1**Hydric soil status: Not hydric**Hydrologic soil group: B**Typical profile*

Oi—0 to 1 inch; slightly decomposed plant material

Oe—1 to 2 inches; moderately decomposed plant material

A—2 to 4 inches; gravelly medial sandy loam

Bt1—4 to 7 inches; gravelly medial sandy loam

Bt2—7 to 17 inches; gravelly medial fine sandy loam

Bt3—17 to 28 inches; very gravelly fine sandy loam

Bt4—28 to 41 inches; very gravelly coarse sandy loam

Bt5—41 to 54 inches; very gravelly coarse sandy loam

Cr—54 inches; bedrock

Minor Components in Map Unit 826**Soils that are more than 60 inches deep to bedrock***Composition: 6 percent**Slope: 2 to 15 percent**Geomorphic position: The top of volcanic ridges**Hydric soil status: Not hydric***Mountyana and similar soils***Composition: 5 percent**Slope: 2 to 15 percent**Geomorphic position: The top of volcanic ridges**Hydric soil status: Not hydric***Lydon and similar soils***Composition: 5 percent**Slope: 2 to 15 percent**Geomorphic position: The top of volcanic ridges**Hydric soil status: Not hydric***Soils that are less than 40 inches deep to bedrock***Composition: 3 percent**Slope: 2 to 15 percent**Geomorphic position: The top of volcanic ridges**Hydric soil status: Not hydric***Very bouldery soils***Composition: 1 percent**Slope: 2 to 15 percent**Geomorphic position: The top of volcanic ridges**Hydric soil status: Not hydric***827—Redbone gravelly medial sandy loam, 15 to 30 percent slopes*****Map Unit Setting****General location: Northeastern Butte County**Major uses: Timber production, wildlife habitat, and watershed**Major land resource area: 22B*

Landscape: Southern Cascade Mountains
Elevation: 3,795 to 4,995 feet (1,158 to 1,524 meters)
Mean annual precipitation: 70 to 75 inches (1,778 to 1,905 millimeters)
Mean annual air temperature: 50 to 52 degrees F (10 to 11 degrees C)
Frost-free period: 100 to 140 days

Map Unit Composition

Redbone gravelly medial sandy loam—80 percent
 Minor components—20 percent

Characteristics of Redbone Gravelly Medial Sandy Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Parent material: Loamy tephra over gravelly and loamy colluvium and/or residuum weathered from volcanic breccia
Observed vegetation: Ponderosa pine, white fir, Douglas-fir, sugar pine, incense cedar, California black oak, dogwood, common snowberry, Sierra chinquapin, greenleaf manzanita, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 10 to 35 percent medium, subrounded gravel, 0 to 15 percent subrounded cobbles, 0 to 10 percent subrounded stones
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)
Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.7 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
 Oe—1 to 2 inches; moderately decomposed plant material
 A—2 to 4 inches; gravelly medial sandy loam
 Bt1—4 to 7 inches; gravelly medial sandy loam
 Bt2—7 to 17 inches; gravelly medial fine sandy loam
 Bt3—17 to 28 inches; very gravelly fine sandy loam
 Bt4—28 to 41 inches; very gravelly coarse sandy loam
 Bt5—41 to 54 inches; very gravelly coarse sandy loam
 Cr—54 inches; bedrock

Minor Components in Map Unit 827

Soils that are less than 40 inches deep to bedrock

Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Hydric soil status: Not hydric

Mountyana and similar soils*Composition:* 5 percent*Slope:* 15 to 30 percent*Geomorphic position:* Side slopes on volcanic ridges*Hydric soil status:* Not hydric**Lydon and similar soils***Composition:* 5 percent*Slope:* 15 to 30 percent*Geomorphic position:* Side slopes on volcanic ridges*Hydric soil status:* Not hydric**Soils that are more than 60 inches deep to bedrock***Composition:* 4 percent*Slope:* 15 to 30 percent*Geomorphic position:* Side slopes on volcanic ridges*Hydric soil status:* Not hydric**Very bouldery soils***Composition:* 1 percent*Slope:* 15 to 30 percent*Geomorphic position:* Side slopes on volcanic ridges*Hydric soil status:* Not hydric**829—Paradiso loam, 2 to 15 percent slopes*****Map Unit Setting****General location:* North-central Butte county*Major uses:* Timber production, homesite and commercial development, wildlife habitat, and watershed*Major land resource area:* 22B*Landscape:* Southern Cascade Mountains*Elevation:* 1,220 to 3,730 feet (372 to 1,137 meters)*Mean annual precipitation:* 35 to 73 inches (889 to 1,854 millimeters)*Mean annual air temperature:* 54 to 59 degrees F (12 to 15 degrees C)*Frost-free period:* 145 to 255 days***Map Unit Composition***

Paradiso loam—80 percent

Minor components—20 percent

Characteristics of Paradiso Loam*Slope:* 2 to 15 percent*Geomorphic position:* The top of volcanic ridges*Parent material:* Clayey residuum weathered from volcanic rocks*Observed vegetation:* Ponderosa pine, Douglas-fir, California black oak, incense cedar, tanoak, sugar pine, Scotch broom, deerbrush, and whiteleaf manzanita; some white fir at the higher elevations*Texture of the surface layer:* Slightly decomposed plant material*Percentage of the surface covered by rock fragments:* 0 to 15 percent fine, subrounded gravel, 0 to 5 percent subrounded cobbles, 0 to 5 percent subrounded stones, 0 to 5 percent subrounded boulders*Restrictive feature:* None identified*Shrink-swell potential:* High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very high (about 10.0 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 4 inches; loam

ABt—4 to 9 inches; clay loam

Bt1—9 to 16 inches; clay loam

Bt2—16 to 25 inches; clay loam

Bt3—25 to 45 inches; clay

Bt4—45 to 58 inches; clay loam

Bt5—58 to 74 inches; clay loam

2Bt6—74 to 84 inches; loam

Minor Components in Map Unit 829

Mountyana and similar soils

Composition: 8 percent

Slope: 2 to 15 percent

Geomorphic position: The top of volcanic ridges

Hydric soil status: Not hydric

Schott and similar soils

Composition: 7 percent

Slope: 2 to 15 percent

Geomorphic position: The top of volcanic ridges

Hydric soil status: Not hydric

Soils that have a water table at a depth of 30 to 80 inches

Composition: 3 percent

Slope: 2 to 8 percent

Geomorphic position: Areas along streams on the top of volcanic ridges

Hydric soil status: Not hydric

Rock outcrop

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: Areas of post rock basalt flow on the top of volcanic ridges

Hydric soil status: Not hydric

830—Paradiso loam, 15 to 30 percent slopes

Map Unit Setting

General location: North-central Butte county

Major uses: Timber production, homesite development, wildlife habitat, and watershed

Major land resource area: 22B

Landscape: Southern Cascade Mountains
Elevation: 1,295 to 3,680 feet (396 to 1,122 meters)
Mean annual precipitation: 35 to 73 inches (889 to 1,854 millimeters)
Mean annual air temperature: 54 to 59 degrees F (12 to 15 degrees C)
Frost-free period: 145 to 255 days

Map Unit Composition

Paradiso loam—75 percent
 Minor components—25 percent

Characteristics of Paradiso Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Parent material: Clayey colluvium and/or residuum weathered from volcanic rocks
Observed vegetation: Ponderosa pine, Douglas-fir, California black oak, incense cedar, tanoak, sugar pine, Scotch broom, deerbrush, and whiteleaf manzanita; some white fir at the higher elevations
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent fine, subrounded gravel, 0 to 5 percent subrounded cobbles, 0 to 5 percent subrounded stones, 0 to 5 percent subrounded boulders
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)
Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very high (about 10.0 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material
 A—2 to 4 inches; loam
 ABt—4 to 9 inches; clay loam
 Bt1—9 to 16 inches; clay loam
 Bt2—16 to 25 inches; clay loam
 Bt3—25 to 45 inches; clay
 Bt4—45 to 58 inches; clay loam
 Bt5—58 to 74 inches; clay loam
 2Bt6—74 to 84 inches; loam

Minor Components in Map Unit 830

Mountyana and similar soils

Composition: 10 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Hydric soil status: Not hydric

Schott and similar soils*Composition:* 10 percent*Slope:* 15 to 30 percent*Geomorphic position:* Side slopes on volcanic ridges*Hydric soil status:* Not hydric**Soils that have a water table at a depth of 30 to 80 inches***Composition:* 3 percent*Slope:* 2 to 8 percent*Geomorphic position:* Areas along streams on volcanic ridges*Hydric soil status:* Not hydric**Rock outcrop***Composition:* 2 percent*Slope:* 15 to 30 percent*Geomorphic position:* Side slopes on volcanic ridges*Hydric soil status:* Not hydric**831—Surnuf-Bigridge-Spine complex, 3 to 15 percent slopes*****Map Unit Setting****General location:* North-central Butte County*Major uses:* Homesite development, timber production, wildlife habitat, and watershed*Major land resource area:* 22A*Landscape:* Northern Sierra Nevada Mountains*Elevation:* 2,595 to 3,395 feet (792 to 1,036 meters)*Mean annual precipitation:* 67 to 70 inches (1,702 to 1,778 millimeters)*Mean annual air temperature:* 54 degrees F (12 degrees C)*Frost-free period:* 165 to 180 days***Map Unit Composition***

Surnuf gravelly loam—40 percent

Bigridge loam—30 percent

Spine very gravelly loam—15 percent

Minor components—15 percent

Characteristics of Surnuf Gravelly Loam*Slope:* 3 to 15 percent*Geomorphic position:* Ridgetops and footslopes on metavolcanic mountains*Parent material:* Silty and clayey residuum weathered from metavolcanic rocks*Observed vegetation:* Ponderosa pine, Douglas-fir, tanoak, California black oak, incense cedar, sugar pine, and deerbrush*Texture of the surface layer:* Slightly decomposed plant material*Percentage of the surface covered by rock fragments:* 0 to 30 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 2 percent subangular stones*Restrictive feature:* None identified*Shrink-swell potential:* High (LEP of 6 to 9)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* None*Annual ponding frequency:* None*Water table (zone of saturation):* None observed

Available water capacity: High (about 7.5 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 4 inches; gravelly loam

Bt1—4 to 9 inches; gravelly clay loam

Bt2—9 to 16 inches; gravelly clay loam

Bt3—16 to 27 inches; gravelly clay

Bt4—27 to 29 inches; gravelly clay

Bt5—29 to 56 inches; gravelly silty clay

Bt6—56 to 72 inches; silty clay

Characteristics of Bigridge Loam

Slope: 3 to 15 percent

Geomorphic position: Ridgetops and footslopes on metavolcanic mountains

Parent material: Fine-loamy residuum weathered from metavolcanic rocks

Observed vegetation: Ponderosa pine, Douglas-fir, tanoak, California black oak, incense cedar, sugar pine, deerbrush, and whiteleaf manzanita

Texture of the surface layer: Moderately decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 30 percent coarse, angular gravel, 0 to 5 percent angular cobbles, 0 to 5 percent angular stones

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oe—0 to 1 inch; moderately decomposed plant material

A—1 to 5 inches; loam

BAt—5 to 9 inches; gravelly loam

Bt1—9 to 15 inches; gravelly loam

Bt2—15 to 20 inches; gravelly loam

BCT1—20 to 27 inches; very gravelly loam

BCT2—27 to 36 inches; extremely gravelly loam

BCT3—36 to 51 inches; very gravelly loam

Crt—51 to 62 inches; bedrock

Characteristics of Spine Very Gravelly Loam

Slope: 3 to 15 percent

Geomorphic position: Ridgetops and footslopes on metavolcanic mountains

Parent material: Gravelly and loamy residuum weathered from metavolcanic rocks

Observed vegetation: Whiteleaf manzanita, ponderosa pine, tanoak, Douglas-fir, sugar pine, canyon live oak, incense cedar, and black oak

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 20 to 60 percent subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 10 to 20 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 0.9 inch)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7e-8

Land capability, nonirrigated: 7e-8

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; very gravelly loam

Bt1—3 to 9 inches; extremely gravelly loam

Bt2—9 to 16 inches; extremely gravelly clay loam

R—16 inches; bedrock

Minor Components in Map Unit 831

Ultic Haploxeralfs, fine-loamy, more than 60 inches deep to bedrock, and similar soils

Composition: 5 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops and footslopes on metavolcanic mountains

Hydric soil status: Not hydric

Minniecreek and similar soils

Composition: 5 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops and footslopes on metavolcanic mountains

Hydric soil status: Not hydric

Ultic Haploxeralfs, loamy-skeletal, and similar soils

Composition: 3 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops and footslopes on metavolcanic mountains

Hydric soil status: Not hydric

Soils that are less than 10 inches deep to bedrock

Composition: 2 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops and footslopes on metavolcanic mountains
Hydric soil status: Not hydric

832—Surnuf-Bigridge-Spine complex, 15 to 30 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Timber production, wildlife habitat, watershed, and homesite development
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,555 to 3,395 feet (780 to 1,036 meters)
Mean annual precipitation: 65 to 70 inches (1,651 to 1,778 millimeters)
Mean annual air temperature: 54 degrees F (12 degrees C)
Frost-free period: 165 to 180 days

Map Unit Composition

Surnuf gravelly loam—40 percent
 Bigridge loam—30 percent
 Spine very gravelly loam—15 percent
 Minor components—15 percent

Characteristics of Surnuf Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic mountains
Parent material: Silty and clayey colluvium and/or residuum weathered from metavolcanic rocks
Observed vegetation: Ponderosa pine, Douglas-fir, tanoak, California black oak, incense cedar, sugar pine, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 30 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 2 percent subangular stones
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)
Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 7.5 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
 A—1 to 4 inches; gravelly loam
 Bt1—4 to 9 inches; gravelly clay loam

Bt2—9 to 16 inches; gravelly clay loam
 Bt3—16 to 27 inches; gravelly clay
 Bt4—27 to 29 inches; gravelly clay
 Bt5—29 to 56 inches; gravelly silty clay
 Bt6—56 to 72 inches; silty clay

Characteristics of Bigridge Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes on metavolcanic mountains

Parent material: Fine-loamy colluvium and/or residuum weathered from metavolcanic rocks

Observed vegetation: Ponderosa pine, Douglas-fir, tanoak, California black oak, incense cedar, sugar pine, deerbrush, and whiteleaf manzanita

Texture of the surface layer: Moderately decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 30 percent coarse, angular gravel, 0 to 5 percent angular cobbles, 0 to 5 percent angular stones

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oe—0 to 1 inch; moderately decomposed plant material

A—1 to 5 inches; loam

BAt—5 to 9 inches; gravelly loam

Bt1—9 to 15 inches; gravelly loam

Bt2—15 to 20 inches; gravelly loam

BCt1—20 to 27 inches; very gravelly loam

BCt2—27 to 36 inches; extremely gravelly loam

BCt3—36 to 51 inches; very gravelly loam

Crt—51 to 62 inches; bedrock

Characteristics of Spine Very Gravelly Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes on metavolcanic mountains

Parent material: Gravelly and loamy residuum weathered from metavolcanic rocks

Observed vegetation: Whiteleaf manzanita, ponderosa pine, tanoak, Douglas-fir, sugar pine, canyon live oak, incense cedar, and California black oak

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 20 to 60 percent subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 10 to 20 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 0.9 inch)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7e-8
Land capability, nonirrigated: 7e-8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
 A—1 to 3 inches; very gravelly loam
 Bt1—3 to 9 inches; extremely gravelly loam
 Bt2—9 to 16 inches; extremely gravelly clay loam
 R—16 inches; bedrock

Minor Components in Map Unit 832

Ultic Haploxeralfs, fine-loamy, more than 60 inches deep to bedrock, and similar soils

Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic mountains
Hydric soil status: Not hydric

Minniecreek and similar soils

Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic mountains
Hydric soil status: Not hydric

Ultic Haploxeralfs, loamy-skeletal, and similar soils

Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic mountains
Hydric soil status: Not hydric

Soils that are less than 10 inches deep to bedrock

Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic mountains
Hydric soil status: Not hydric

833—Surnuf-Bigridge-Spine complex, 30 to 50 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains

Elevation: 2,200 to 3,395 feet (671 to 1,036 meters)

Mean annual precipitation: 60 to 70 inches (1,524 to 1,778 millimeters)

Mean annual air temperature: 54 to 55 degrees F (12 to 13 degrees C)

Frost-free period: 165 to 210 days

Map Unit Composition

Surnuf gravelly loam—60 percent

Bigridge loam—15 percent

Spine very gravelly loam—15 percent

Minor components—10 percent

Characteristics of Surnuf Gravelly Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes on metavolcanic mountains

Parent material: Silty and clayey residuum and/or colluvium derived from metavolcanic rocks

Observed vegetation: Ponderosa pine, Douglas-fir, tanoak, California black oak, incense cedar, sugar pine, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 30 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 2 percent subangular stones, 0 to 2 percent subangular boulders

Restrictive feature: None identified

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 7.5 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 4 inches; gravelly loam

Bt1—4 to 9 inches; gravelly clay loam

Bt2—9 to 16 inches; gravelly clay loam

Bt3—16 to 27 inches; gravelly clay

Bt4—27 to 29 inches; gravelly clay

Bt5—29 to 56 inches; gravelly silty clay

Bt6—56 to 72 inches; silty clay

Characteristics of Bigridge Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes on metavolcanic mountains

Parent material: Fine-loamy residuum and/or colluvium derived from metavolcanic rocks

Observed vegetation: Ponderosa pine, Douglas-fir, tanoak, California black oak, incense cedar, sugar pine, deerbrush, and whiteleaf manzanita

Texture of the surface layer: Moderately decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 30 percent coarse, angular gravel, 0 to 5 percent angular cobbles, 0 to 5 percent angular stones
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oe—0 to 1 inch; moderately decomposed plant material
 A—1 to 5 inches; loam
 BA_t—5 to 9 inches; gravelly loam
 B_t1—9 to 15 inches; gravelly loam
 B_t2—15 to 20 inches; gravelly loam
 BC_t1—20 to 27 inches; very gravelly loam
 BC_t2—27 to 36 inches; extremely gravelly loam
 BC_t3—36 to 51 inches; very gravelly loam
 C_{rt}—51 to 62 inches; bedrock

Characteristics of Spine Very Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on metavolcanic mountains
Parent material: Gravelly and loamy colluvium and/or residuum weathered from metavolcanic rocks
Observed vegetation: Whiteleaf manzanita, ponderosa pine, tanoak, Douglas-fir, sugar pine, canyon live oak, incense cedar, and California black oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 20 to 60 percent subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 10 to 20 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 0.9 inch)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7e-8
Land capability, nonirrigated: 7e-8

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; very gravelly loam

Bt1—3 to 9 inches; extremely gravelly loam

Bt2—9 to 16 inches; extremely gravelly clay loam

R—16 inches; bedrock

Minor Components in Map Unit 833

Ultic Haploxeralfs, fine-loamy, more than 60 inches deep to bedrock, and similar soils

Composition: 4 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on metavolcanic mountains

Hydric soil status: Not hydric

Ultic Haploxeralfs, loamy-skeletal, and similar soils

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on metavolcanic mountains

Hydric soil status: Not hydric

Minniecreek and similar soils

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on metavolcanic mountains

Hydric soil status: Not hydric

Soils that are less than 10 inches deep to bedrock

Composition: 1 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on metavolcanic mountains

Hydric soil status: Not hydric

834—Hietanen-Mac complex, 3 to 15 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 3,195 to 3,995 feet (975 to 1,219 meters)

Mean annual precipitation: 65 to 72 inches (1,651 to 1,829 millimeters)

Mean annual air temperature: 54 to 55 degrees F (12 to 13 degrees C)

Frost-free period: 160 to 185 days

Map Unit Composition

Hietanen gravelly loam—50 percent

Mac gravelly loam—30 percent

Minor components—20 percent

Characteristics of Hietanen Gravelly Loam

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on metasedimentary mountains

Parent material: Silty residuum weathered from metasedimentary rocks

Observed vegetation: Ponderosa pine, Douglas-fir, tanoak, sugar pine, white fir, incense cedar, California black oak, whiteleaf manzanita, dogwood, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 30 percent subangular gravel, 0 to 10 percent subangular cobbles, 0 to 5 percent subangular stones

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 8.2 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; gravelly loam

Bt1—3 to 8 inches; gravelly loam

Bt2—8 to 19 inches; silt loam

Bt3—19 to 30 inches; silt loam

Bt4—30 to 53 inches; silt loam

Cr—53 inches; bedrock

Characteristics of Mac Gravelly Loam

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on metasedimentary mountains

Parent material: Silty residuum weathered from metasedimentary rocks

Observed vegetation: Ponderosa pine, Douglas-fir, tanoak, sugar pine, white fir, incense cedar, California black oak, whiteleaf manzanita, dogwood, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 50 percent subangular gravel, 0 to 10 percent subangular cobbles, 0 to 5 percent subangular stones

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.6 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 4 inches; gravelly loam

Bt1—4 to 9 inches; very gravelly loam

Bt2—9 to 15 inches; gravelly silty clay loam

Bt3—15 to 23 inches; silty clay loam

Crt—23 to 37 inches; extremely gravelly silt loam

Cr—37 inches; bedrock

Minor Components in Map Unit 834

Jocal and similar soils

Composition: 8 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on metasedimentary mountains

Hydric soil status: Not hydric

Sites and similar soils

Composition: 4 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on metasedimentary mountains

Hydric soil status: Not hydric

Dixmine and similar soils

Composition: 4 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on metasedimentary mountains

Hydric soil status: Not hydric

Spine and similar soils

Composition: 4 percent

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on metasedimentary mountains

Hydric soil status: Not hydric

835—Hietanen-Mac complex, 15 to 30 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 2,795 to 3,995 feet (853 to 1,219 meters)

Mean annual precipitation: 65 to 72 inches (1,651 to 1,829 millimeters)

Mean annual air temperature: 54 to 55 degrees F (12 to 13 degrees C)

Frost-free period: 160 to 185 days

Map Unit Composition

Hietanen gravelly loam—60 percent

Mac gravelly loam—20 percent

Minor components—20 percent

Characteristics of Hietanen Gravelly Loam

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and shoulder slopes on metasedimentary mountains

Parent material: Silty colluvium and/or residuum weathered from metasedimentary rocks

Observed vegetation: Ponderosa pine, Douglas-fir, tanoak, sugar pine, white fir, incense cedar, California black oak, whiteleaf manzanita, dogwood, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 30 percent subangular gravel, 0 to 10 percent subangular cobbles, 0 to 5 percent subangular stones

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 8.2 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; gravelly loam

Bt1—3 to 8 inches; gravelly loam

Bt2—8 to 19 inches; silt loam

Bt3—19 to 30 inches; silt loam

Bt4—30 to 53 inches; silt loam

Cr—53 inches; bedrock

Characteristics of Mac Gravelly Loam

Slope: 15 to 30 percent

Geomorphic position: Ridgetops and shoulder slopes on metasedimentary mountains

Parent material: Silty residuum weathered from metasedimentary rocks

Observed vegetation: Ponderosa pine, Douglas-fir, tanoak, sugar pine, white fir, incense cedar, California black oak, whiteleaf manzanita, dogwood, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 50 percent gravel, 0 to 10 percent cobbles, 0 to 5 percent stones

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.6 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

*Interpretive groups**Land capability, irrigated: 4e-1**Land capability, nonirrigated: 4e-1**Hydric soil status: Not hydric**Hydrologic soil group: B**Typical profile*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 4 inches; gravelly loam

Bt1—4 to 9 inches; very gravelly loam

Bt2—9 to 15 inches; gravelly silty clay loam

Bt3—15 to 23 inches; silty clay loam

Crt—23 to 37 inches; extremely gravelly silt loam

Cr—37 inches; bedrock

Minor Components in Map Unit 835**Jocal and similar soils***Composition: 8 percent**Slope: 15 to 30 percent**Geomorphic position: Ridgetops and shoulder slopes on metasedimentary mountains**Hydric soil status: Not hydric***Sites and similar soils***Composition: 4 percent**Slope: 15 to 30 percent**Geomorphic position: Ridgetops and shoulder slopes on metasedimentary mountains**Hydric soil status: Not hydric***Dixmine and similar soils***Composition: 4 percent**Slope: 15 to 30 percent**Geomorphic position: Ridgetops and shoulder slopes on metasedimentary mountains**Hydric soil status: Not hydric***Spine and similar soils***Composition: 4 percent**Slope: 15 to 30 percent**Geomorphic position: Ridgetops and shoulder slopes on metasedimentary mountains**Hydric soil status: Not hydric***836—Hietanen-Mac-Spine complex, 30 to 50 percent slopes*****Map Unit Setting****General location: North-central Butte County**Major uses: Timber production, wildlife habitat, and watershed**Major land resource area: 22A**Landscape: Northern Sierra Nevada Mountains**Elevation: 3,195 to 3,995 feet (975 to 1,219 meters)**Mean annual precipitation: 64 to 72 inches (1,626 to 1,829 millimeters)**Mean annual air temperature: 54 to 55 degrees F (12 to 13 degrees C)**Frost-free period: 160 to 185 days****Map Unit Composition***

Hietanen gravelly loam—50 percent

Mac gravelly loam—20 percent
 Spine very gravelly loam—15 percent
 Minor components—15 percent

Characteristics of Hietanen Gravelly Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes on metasedimentary mountains

Parent material: Silty colluvium and/or residuum weathered from metasedimentary rocks

Observed vegetation: Tanoak, Douglas-fir, sugar pine, white fir, ponderosa pine, California black oak, incense cedar, dogwood, whiteleaf manzanita, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 30 percent subangular gravel, 0 to 10 percent subangular cobbles, 0 to 5 percent subangular stones

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 8.2 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; gravelly loam

Bt1—3 to 8 inches; gravelly loam

Bt2—8 to 19 inches; silt loam

Bt3—19 to 30 inches; silt loam

Bt4—30 to 53 inches; silt loam

Cr—53 inches; bedrock

Characteristics of Mac Gravelly Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes on metasedimentary mountains

Parent material: Silty colluvium and/or residuum weathered from metasedimentary rocks

Observed vegetation: Tanoak, Douglas-fir, sugar pine, white fir, ponderosa pine, California black oak, incense cedar, dogwood, whiteleaf manzanita, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 50 percent gravel, 0 to 10 percent cobbles, 0 to 5 percent stones

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed
Available water capacity: Low (about 4.6 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
 A—1 to 4 inches; gravelly loam
 Bt1—4 to 9 inches; very gravelly loam
 Bt2—9 to 15 inches; gravelly silty clay loam
 Bt3—15 to 23 inches; silty clay loam
 Crt—23 to 37 inches; extremely gravelly silt loam
 Cr—37 inches; bedrock

Characteristics of Spine Very Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Nose slopes on metasedimentary mountains
Parent material: Gravelly residuum weathered from metasedimentary rocks
Observed vegetation: Tanoak, Douglas-fir, sugar pine, white fir, ponderosa pine, California black oak, incense cedar, dogwood, whiteleaf manzanita, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 20 to 60 percent subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 10 to 20 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)
Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 0.9 inch)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7e-8
Land capability, nonirrigated: 7e-8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
 A—1 to 3 inches; very gravelly loam
 Bt1—3 to 9 inches; extremely gravelly loam
 Bt2—9 to 16 inches; extremely gravelly clay loam
 R—16 inches; bedrock

Minor Components in Map Unit 836

Jocal and similar soils

Composition: 8 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on metasedimentary mountains

Hydric soil status: Not hydric

Loamy-skeletal soils that are 20 to 80 inches deep to bedrock

Composition: 4 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on metasedimentary mountains

Hydric soil status: Not hydric

Sites and similar soils

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on metasedimentary mountains

Hydric soil status: Not hydric

837—Hietanen-Spine-Mac complex, 50 to 70 percent slopes

Map Unit Setting

General location: North-central and southeastern Butte County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 1,995 to 3,720 feet (609 to 1,134 meters)

Mean annual precipitation: 64 to 72 inches (1,626 to 1,829 millimeters)

Mean annual air temperature: 54 to 55 degrees F (12 to 13 degrees C)

Frost-free period: 160 to 185 days

Map Unit Composition

Hietanen gravelly loam—35 percent

Spine very gravelly loam—25 percent

Mac gravelly loam—20 percent

Minor components—20 percent

Characteristics of Hietanen Gravelly Loam

Slope: 50 to 70 percent

Geomorphic position: Side slopes on metasedimentary mountains

Parent material: Silty colluvium and/or residuum weathered from metasedimentary rocks

Observed vegetation: Tanoak, Douglas-fir, sugar pine, white fir, ponderosa pine, California black oak, incense cedar, Pacific madrone, dogwood, whiteleaf manzanita, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 30 percent subangular gravel, 0 to 10 percent subangular cobbles, 0 to 5 percent subangular stones

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 8.2 inches)

Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
 A—1 to 3 inches; gravelly loam
 Bt1—3 to 8 inches; gravelly loam
 Bt2—8 to 19 inches; silt loam
 Bt3—19 to 30 inches; silt loam
 Bt4—30 to 53 inches; silt loam
 Cr—53 inches; bedrock

Characteristics of Spine Very Gravelly Loam

Slope: 50 to 70 percent

Geomorphic position: Nose slopes on metasedimentary mountains

Parent material: Silty colluvium and/or residuum weathered from metasedimentary rocks

Observed vegetation: Tanoak, Douglas-fir, sugar pine, white fir, ponderosa pine, California black oak, incense cedar, dogwood, whiteleaf manzanita, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 20 to 60 percent subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 10 to 20 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 0.9 inch)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7e-8
Land capability, nonirrigated: 7e-8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
 A—1 to 3 inches; very gravelly loam
 Bt1—3 to 9 inches; extremely gravelly loam
 Bt2—9 to 16 inches; extremely gravelly clay loam
 R—16 inches; bedrock

Characteristics of Mac Gravelly Loam

Slope: 50 to 70 percent

Geomorphic position: Side slopes on metasedimentary mountains

Parent material: Silty colluvium and/or residuum weathered from metasedimentary rocks

Observed vegetation: Tanoak, Douglas-fir, sugar pine, white fir, ponderosa pine, California black oak, incense cedar, dogwood, whiteleaf manzanita, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 50 percent gravel, 0 to 10 percent cobbles, 0 to 5 percent stones

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.6 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 4 inches; gravelly loam

Bt1—4 to 9 inches; very gravelly loam

Bt2—9 to 15 inches; gravelly silty clay loam

Bt3—15 to 23 inches; silty clay loam

Crt—23 to 37 inches; extremely gravelly silt loam

Cr—37 inches; bedrock

Minor Components in Map Unit 837

Jocal and similar soils

Composition: 8 percent

Slope: 50 to 70 percent

Geomorphic position: Side slopes on metasedimentary mountains

Hydric soil status: Not hydric

Loamy-skeletal soils that are 20 to 80 inches deep to bedrock

Composition: 5 percent

Slope: 50 to 70 percent

Geomorphic position: Side slopes on metasedimentary mountains

Hydric soil status: Not hydric

Sites and similar soils

Composition: 4 percent

Slope: 50 to 70 percent

Geomorphic position: Side slopes on metasedimentary mountains

Hydric soil status: Not hydric

Haploxerults, coarse-loamy, more than 60 inches deep to bedrock, and similar soils

Composition: 3 percent

Slope: 50 to 70 percent

Geomorphic position: Side slopes on metasedimentary mountains

Hydric soil status: Not hydric

838—Dixmine-Spine-Mac complex, 50 to 70 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 1,600 to 3,595 feet (488 to 1,097 meters)

Mean annual precipitation: 64 to 73 inches (1,626 to 1,854 millimeters)

Mean annual air temperature: 52 to 55 degrees F (11 to 13 degrees C)

Frost-free period: 140 to 200 days

Map Unit Composition

Dixmine very gravelly loam—35 percent

Spine very gravelly loam—25 percent

Mac gravelly loam—25 percent

Minor components—15 percent

Characteristics of Dixmine Very Gravelly Loam

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Parent material: Gravelly, loamy and clayey residuum and/or colluvium derived from metavolcanic rocks

Observed vegetation: Douglas-fir, tanoak, California black oak, canyon live oak, ponderosa pine, sugar pine, bigleaf maple, incense cedar, manzanita, deerbrush, and Pacific poison oak

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 25 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 10 percent subangular stones

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 5.2 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

Oe—1 to 2 inches; moderately decomposed plant material

A—2 to 6 inches; very gravelly loam
 Bt1—6 to 11 inches; very gravelly loam
 Bt2—11 to 17 inches; gravelly loam
 Bt3—17 to 30 inches; very cobbly clay loam
 Bt4—30 to 41 inches; very gravelly clay loam
 Bt5—41 to 54 inches; extremely cobbly clay loam
 Cr—54 inches; bedrock

Characteristics of Spine Very Gravelly Loam

Slope: 50 to 70 percent

Geomorphic position: Nose slopes in canyons

Parent material: Gravelly colluvium and/or residuum weathered from metavolcanic rocks

Observed vegetation: Douglas-fir, tanoak, California black oak, canyon live oak, ponderosa pine, sugar pine, bigleaf maple, incense cedar, manzanita, deerbrush, and Pacific poison oak

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 20 to 60 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 10 to 20 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 0.9 inch)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7e-8

Land capability, nonirrigated: 7e-8

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; very gravelly loam

Bt1—3 to 9 inches; extremely gravelly loam

Bt2—9 to 16 inches; extremely gravelly clay loam

R—16 inches; bedrock

Characteristics of Mac Gravelly Loam

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Parent material: Fine-loamy residuum and/or colluvium derived from metavolcanic rocks

Observed vegetation: Douglas-fir, tanoak, California black oak, canyon live oak, ponderosa pine, sugar pine, bigleaf maple, incense cedar, manzanita, deerbrush, and Pacific poison oak

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 50 percent medium gravel, 0 to 10 percent cobbles, 0 to 5 percent stones

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.6 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 4 inches; gravelly loam

Bt1—4 to 9 inches; very gravelly loam

Bt2—9 to 15 inches; gravelly silty clay loam

Bt3—15 to 23 inches; silty clay loam

Crt—23 to 37 inches; extremely gravelly silt loam

Cr—37 inches; bedrock

Minor Components in Map Unit 838

Loamy-skeletal soils that are 40 to 60 inches deep to bedrock

Composition: 3 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Rock outcrop

Composition: 2 percent

Slope: 50 to 70 percent

Geomorphic position: Nose slopes in canyons

Hydric soil status: Not hydric

Haploxerults, loamy-skeletal, more than 60 inches deep to bedrock, and similar soils

Composition: 2 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Soils that are 2 to 10 inches deep to bedrock

Composition: 2 percent

Slope: 50 to 70 percent

Geomorphic position: Nose slopes in canyons

Hydric soil status: Not hydric

Powellton and similar soils

Composition: 2 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons

Hydric soil status: Not hydric

Beecee and similar soils*Composition:* 2 percent*Slope:* 50 to 70 percent*Geomorphic position:* Backslopes in canyons*Hydric soil status:* Not hydric**Toadtown and similar soils***Composition:* 1 percent*Slope:* 50 to 70 percent*Geomorphic position:* Backslopes in canyons*Hydric soil status:* Not hydric**Hydraulic mining debris***Composition:* 1 percent*Slope:* 2 to 30 percent*Geomorphic position:* The bottom of canyons*Hydric soil status:* Not hydric**839—Chawanakee-Billscabin complex, 2 to 15 percent slopes*****Map Unit Setting****General location:* Eastern Butte County and southwestern Plumas County*Major uses:* Timber production, wildlife habitat, and watershed*Major land resource area:* 22A*Landscape:* Northern Sierra Nevada Mountains*Elevation:* 3,795 to 4,595 feet (1,158 to 1,402 meters)*Mean annual precipitation:* 75 to 80 inches (1,905 to 2,032 millimeters)*Mean annual air temperature:* 50 to 54 degrees F (10 to 12 degrees C)*Frost-free period:* 110 to 150 days***Map Unit Composition***

Chawanakee gravelly sandy loam—55 percent

Billscabin gravelly sandy loam—35 percent

Minor components—10 percent

Characteristics of Chawanakee Gravelly Sandy Loam*Slope:* 2 to 15 percent*Geomorphic position:* Ridgetops on granitic mountains*Parent material:* Coarse-loamy residuum weathered from quartz diorite*Observed vegetation:* White fir, Douglas-fir, sugar pine, ponderosa pine, incense cedar, whitethorn ceanothus, dogwood, and deerbrush*Texture of the surface layer:* Slightly decomposed plant material*Percentage of the surface covered by rock fragments:* 0 to 10 percent subrounded gravel, 0 to 5 percent subrounded boulders*Depth to a restrictive feature (paralithic bedrock):* 10 to 20 inches*Shrink-swell potential:* Low (LEP of less than 3)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* None*Annual ponding frequency:* None*Water table (zone of saturation):* None observed*Available water capacity:* Very low (about 1.4 inches)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: C

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

Oe—1 to 2 inches; moderately decomposed plant material

A—2 to 5 inches; gravelly sandy loam

Bw1—5 to 11 inches; gravelly sandy loam

Bw2—11 to 19 inches; gravelly sandy loam

Cr—19 inches; bedrock

Characteristics of Billscabin Gravelly Sandy Loam

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on granitic mountains

Parent material: Gravelly, coarse-loamy colluvium and/or residuum weathered from quartz diorite

Observed vegetation: White fir, Douglas-fir, sugar pine, ponderosa pine, incense cedar, whitethorn ceanothus, dogwood, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 10 to 65 percent coarse, angular gravel, 0 to 50 percent angular cobbles, 0 to 50 percent angular stones, 0 to 10 percent angular boulders

Depth to a restrictive feature (paralithic bedrock): 60 to 82 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 3.3 inches)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: A

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A1—2 to 5 inches; gravelly sandy loam

A2—5 to 14 inches; very gravelly sandy loam

Bw—14 to 27 inches; very gravelly sandy loam

C1—27 to 37 inches; very gravelly loamy sand

C2—37 to 57 inches; very gravelly loamy sand

C3—57 to 82 inches; very gravelly loamy sand

Minor Components in Map Unit 839

Rock outcrop

Composition: 5 percent

Slope: 2 to 15 percent
Geomorphic position: Ridgetops on granitic mountains
Hydric soil status: Not hydric

Loamy-skeletal soils that are 10 to 20 inches deep to bedrock

Composition: 3 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on granitic mountains
Hydric soil status: Not hydric

Coarse-loamy soils that are 10 to 20 inches deep to lithic bedrock

Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on granitic mountains
Hydric soil status: Not hydric

841—Billscabin-Bonneyridge complex, 30 to 50 percent slopes

Map Unit Setting

General location: Eastern Butte County and southwestern Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,100 to 4,595 feet (945 to 1,402 meters)
Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)
Mean annual air temperature: 50 to 54 degrees F (10 to 12 degrees C)
Frost-free period: 110 to 150 days

Map Unit Composition

Billscabin gravelly sandy loam—50 percent
 Bonneyridge sandy loam—35 percent
 Minor components—15 percent

Characteristics of Billscabin Gravelly Sandy Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Parent material: Gravelly, coarse-loamy colluvium and/or residuum weathered from quartz diorite
Observed vegetation: White fir, Douglas-fir, sugar pine, ponderosa pine, incense cedar, whitethorn ceanothus, dogwood, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 10 to 65 percent coarse, angular gravel, 0 to 50 percent angular cobbles, 0 to 50 percent angular stones, 0 to 10 percent angular boulders
Depth to a restrictive feature (paralithic bedrock): 60 to 82 inches
Shrink-swell potential: Low (LEP of less than 3)
Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 3.3 inches)

Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material
 A1—2 to 5 inches; gravelly sandy loam
 A2—5 to 14 inches; very gravelly sandy loam
 Bw—14 to 27 inches; very gravelly sandy loam
 C1—27 to 37 inches; very gravelly loamy sand
 C2—37 to 57 inches; very gravelly loamy sand
 C3—57 to 82 inches; very gravelly loamy sand

Characteristics of Bonneyridge Sandy Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes on granitic mountains

Parent material: Coarse-loamy residuum and/or colluvium derived from quartz diorite

Observed vegetation: White fir, Douglas-fir, sugar pine, ponderosa pine, incense cedar, whitethorn ceanothus, dogwood, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 5 percent subrounded cobbles, 0 to 5 percent subrounded stones

Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.9 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
 A1—1 to 3 inches; sandy loam
 A2—3 to 6 inches; sandy loam
 Bw1—6 to 16 inches; coarse sandy loam
 Bw2—16 to 22 inches; coarse sandy loam
 Bw3—22 to 31 inches; coarse sandy loam
 Bw4—31 to 39 inches; sandy loam
 C1—39 to 56 inches; loamy coarse sand
 C2—56 to 76 inches; gravelly loamy coarse sand

Minor Components in Map Unit 841

Lewisflat and similar soils

Composition: 5 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

Chawanakee and similar soils

Composition: 4 percent

Slope: 30 to 50 percent

Geomorphic position: Nose slopes on granitic mountains

Hydric soil status: Not hydric

Rock outcrop

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

Loamy-skeletal soils that are 10 to 20 inches deep to bedrock

Composition: 1 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

Coarse-loamy soils that are 40 to 60 inches deep to bedrock

Composition: 1 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

Loamy-skeletal soils that are 40 to 60 inches deep to bedrock

Composition: 1 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

842—Billscabin-Bonneyridge complex, 50 to 70 percent slopes

Map Unit Setting

General location: Eastern Butte County and southwestern Plumas County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 3,100 to 4,595 feet (945 to 1,402 meters)

Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)

Mean annual air temperature: 50 to 54 degrees F (10 to 12 degrees C)

Frost-free period: 110 to 150 days

Map Unit Composition

Billscabin gravelly sandy loam—60 percent

Bonneyridge sandy loam—25 percent

Minor components—15 percent

Characteristics of Billscabin Gravelly Sandy Loam

Slope: 50 to 70 percent

Geomorphic position: Side slopes on granitic mountains

Parent material: Gravelly, coarse-loamy colluvium and/or residuum weathered from quartz diorite

Observed vegetation: White fir, Douglas-fir, sugar pine, ponderosa pine, incense cedar, whitethorn ceanothus, dogwood, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 10 to 65 percent coarse, angular gravel, 0 to 50 percent angular cobbles, 0 to 50 percent angular stones, 0 to 10 percent angular boulders

Depth to a restrictive feature (paralithic bedrock): 60 to 82 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 3.3 inches)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: A

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A1—2 to 5 inches; gravelly sandy loam

A2—5 to 14 inches; very gravelly sandy loam

Bw—14 to 27 inches; very gravelly sandy loam

C1—27 to 37 inches; very gravelly loamy sand

C2—37 to 57 inches; very gravelly loamy sand

C3—57 to 82 inches; very gravelly loamy sand

Characteristics of Bonneyridge Sandy Loam

Slope: 50 to 70 percent

Geomorphic position: Side slopes on granitic mountains

Parent material: Coarse-loamy residuum and/or colluvium derived from quartz diorite

Observed vegetation: White fir, Douglas-fir, sugar pine, ponderosa pine, incense cedar, whitethorn ceanothus, dogwood, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 5 percent subrounded cobbles, 0 to 5 percent subrounded stones

Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.9 inches)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: A

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A1—1 to 3 inches; sandy loam

A2—3 to 6 inches; sandy loam

Bw1—6 to 16 inches; coarse sandy loam

Bw2—16 to 22 inches; coarse sandy loam

Bw3—22 to 31 inches; coarse sandy loam

Bw4—31 to 39 inches; sandy loam

C1—39 to 56 inches; loamy coarse sand

C2—56 to 76 inches; gravelly loamy coarse sand

Minor Components in Map Unit 842

Rock outcrop

Composition: 5 percent

Slope: 50 to 70 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

Chawanakee and similar soils

Composition: 4 percent

Slope: 50 to 70 percent

Geomorphic position: Nose slopes on granitic mountains

Hydric soil status: Not hydric

Loamy-skeletal soils that are 10 to 20 inches deep to bedrock

Composition: 3 percent

Slope: 50 to 70 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

Lewisflat and similar soils

Composition: 1 percent

Slope: 50 to 70 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

Coarse-loamy soils that are 40 to 60 inches deep to bedrock

Composition: 1 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

Loamy-skeletal soils that are 40 to 60 inches deep to bedrock

Composition: 1 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

846—Bonneyridge-Lewisflat complex, 2 to 15 percent slopes

Map Unit Setting

General location: Eastern Butte County and southwestern Plumas County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 3,300 to 4,595 feet (1,006 to 1,402 meters)

Mean annual precipitation: 70 to 80 inches (1,778 to 2,032 millimeters)

Mean annual air temperature: 50 to 54 degrees F (10 to 12 degrees C)

Frost-free period: 110 to 150 days

Map Unit Composition

Bonneyridge sandy loam—60 percent

Lewisflat loam—20 percent

Minor components—20 percent

Characteristics of Bonneyridge Sandy Loam

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and footslopes on granitic mountains

Parent material: Coarse-loamy colluvium and/or residuum weathered from quartz diorite

Observed vegetation: Ponderosa pine, sugar pine, white fir, incense cedar, Douglas-fir, California black oak, tanoak, whitethorn ceanothus, and manzanita

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 5 percent subrounded cobbles, 0 to 5 percent subrounded stones

Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.9 inches)

Natural drainage class: Somewhat excessively drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: A

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A1—1 to 3 inches; sandy loam

A2—3 to 6 inches; sandy loam

Bw1—6 to 16 inches; coarse sandy loam

Bw2—16 to 22 inches; coarse sandy loam

Bw3—22 to 31 inches; coarse sandy loam

Bw4—31 to 39 inches; sandy loam

- C1—39 to 56 inches; loamy coarse sand
 C2—56 to 76 inches; gravelly loamy coarse sand

Characteristics of Lewisflat Loam

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and footslopes on granitic mountains

Parent material: Fine-loamy colluvium and/or residuum weathered from quartz diorite

Observed vegetation: Ponderosa pine, sugar pine, white fir, incense cedar, Douglas-fir, California black oak, tanoak, whitethorn ceanothus, and manzanita

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel

Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 8.7 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 3 inches; slightly decomposed plant material

A1—3 to 5 inches; loam

A2—5 to 9 inches; loam

Bt1—9 to 18 inches; loam

2Bt2—18 to 33 inches; loam

2Bt3—33 to 49 inches; loam

2BCt1—49 to 65 inches; loam

2BCt2—65 to 75 inches; loam

Minor Components in Map Unit 846

Chawanakee and similar soils

Composition: 5 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and footslopes on granitic mountains

Hydric soil status: Not hydric

Haplohumults, 27 to 35 percent clay in the subsoil, and similar soils

Composition: 5 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and footslopes on granitic mountains

Hydric soil status: Not hydric

Rock outcrop

Composition: 5 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and footslopes on granitic mountains

Hydric soil status: Not hydric

Loamy-skeletal soils that are 10 to 20 inches deep to bedrock*Composition:* 3 percent*Slope:* 2 to 15 percent*Geomorphic position:* Ridgetops and footslopes on granitic mountains*Hydric soil status:* Not hydric**Loamy-skeletal soils that are 40 to 60 inches deep to bedrock***Composition:* 2 percent*Slope:* 2 to 15 percent*Geomorphic position:* Ridgetops and footslopes on granitic mountains*Hydric soil status:* Not hydric**847—Bonneyridge-Lewisflat complex, 15 to 30 percent slopes*****Map Unit Setting****General location:* Eastern Butte County and southwestern Plumas County*Major uses:* Timber production, wildlife habitat, and watershed*Major land resource area:* 22A*Landscape:* Northern Sierra Nevada Mountains*Elevation:* 3,300 to 4,595 feet (1,006 to 1,402 meters)*Mean annual precipitation:* 70 to 80 inches (1,778 to 2,032 millimeters)*Mean annual air temperature:* 50 to 54 degrees F (10 to 12 degrees C)*Frost-free period:* 110 to 150 days***Map Unit Composition***

Bonneyridge sandy loam—60 percent

Lewisflat loam—20 percent

Minor components—20 percent

Characteristics of Bonneyridge Sandy Loam*Slope:* 15 to 30 percent*Geomorphic position:* Side slopes on granitic mountains*Parent material:* Coarse-loamy colluvium and/or residuum weathered from quartz diorite*Observed vegetation:* Ponderosa pine, sugar pine, white fir, incense cedar, Douglas-fir, California black oak, tanoak, whitethorn ceanothus, and manzanita*Texture of the surface layer:* Slightly decomposed plant material*Percentage of the surface covered by rock fragments:* 0 to 10 percent coarse, subrounded gravel, 0 to 5 percent subrounded cobbles, 0 to 5 percent subrounded stones*Depth to a restrictive feature (paralithic bedrock):* 60 to 130 inches*Shrink-swell potential:* Low (LEP of less than 3)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* None*Annual ponding frequency:* None*Water table (zone of saturation):* None observed*Available water capacity:* Low (about 4.9 inches)*Natural drainage class:* Somewhat excessively drained*Surface runoff (bare conditions):* Medium*Interpretive groups**Land capability, irrigated:* 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: A

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A1—1 to 3 inches; sandy loam

A2—3 to 6 inches; sandy loam

Bw1—6 to 16 inches; coarse sandy loam

Bw2—16 to 22 inches; coarse sandy loam

Bw3—22 to 31 inches; coarse sandy loam

Bw4—31 to 39 inches; sandy loam

C1—39 to 56 inches; loamy coarse sand

C2—56 to 76 inches; gravelly loamy coarse sand

Characteristics of Lewisflat Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes on granitic mountains

Parent material: Fine-loamy colluvium and/or residuum weathered from quartz diorite

Observed vegetation: Ponderosa pine, sugar pine, white fir, incense cedar, Douglas-fir, California black oak, tanoak, whitethorn ceanothus, and manzanita

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel

Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 8.7 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 3 inches; slightly decomposed plant material

A1—3 to 5 inches; loam

A2—5 to 9 inches; loam

Bt1—9 to 18 inches; loam

2Bt2—18 to 33 inches; loam

2Bt3—33 to 49 inches; loam

2BCt1—49 to 65 inches; loam

2BCt2—65 to 75 inches; loam

Minor Components in Map Unit 847

Chawanakee and similar soils

Composition: 5 percent

Slope: 15 to 30 percent

Geomorphic position: Nose slopes on granitic mountains

Hydric soil status: Not hydric

Haplohumults, 27 to 35 percent clay in the subsoil, and similar soils

Composition: 4 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

Rock outcrop

Composition: 4 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

Loamy-skeletal soils that are 40 to 60 inches deep to bedrock

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

Loamy-skeletal soils that are 10 to 20 inches deep to bedrock

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

Coarse-loamy soils that are less than 40 inches deep to paralithic bedrock

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

Eroded soils from which the O horizon and the upper part of the A horizon have been removed

Composition: 1 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

848—Bonneyridge-Lewisflat complex, 30 to 50 percent slopes

Map Unit Setting

General location: Eastern Butte County and southwestern Plumas County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 3,300 to 4,595 feet (1,006 to 1,402 meters)

Mean annual precipitation: 70 to 80 inches (1,778 to 2,032 millimeters)

Mean annual air temperature: 50 to 54 degrees F (10 to 12 degrees C)

Frost-free period: 110 to 150 days

Map Unit Composition

Bonneyridge sandy loam—60 percent

Lewisflat loam—20 percent
 Minor components—20 percent

Characteristics of Bonneyridge Sandy Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Parent material: Coarse-loamy colluvium and/or residuum weathered from quartz diorite
Observed vegetation: Ponderosa pine, sugar pine, white fir, incense cedar, Douglas-fir, California black oak, tanoak, whitethorn ceanothus, and manzanita
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 5 percent subrounded cobbles, 0 to 5 percent subrounded stones
Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches
Shrink-swell potential: Low (LEP of less than 3)
Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.9 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
 A1—1 to 3 inches; sandy loam
 A2—3 to 6 inches; sandy loam
 Bw1—6 to 16 inches; coarse sandy loam
 Bw2—16 to 22 inches; coarse sandy loam
 Bw3—22 to 31 inches; coarse sandy loam
 Bw4—31 to 39 inches; sandy loam
 C1—39 to 56 inches; loamy coarse sand
 C2—56 to 76 inches; gravelly loamy coarse sand

Characteristics of Lewisflat Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Parent material: Fine-loamy colluvium and/or residuum weathered from quartz diorite
Observed vegetation: Ponderosa pine, sugar pine, white fir, incense cedar, Douglas-fir, California black oak, tanoak, whitethorn ceanothus, and manzanita
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel
Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches
Shrink-swell potential: Low (LEP of less than 3)
Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None

Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 8.7 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 3 inches; slightly decomposed plant material
 A1—3 to 5 inches; loam
 A2—5 to 9 inches; loam
 Bt1—9 to 18 inches; loam
 2Bt2—18 to 33 inches; loam
 2Bt3—33 to 49 inches; loam
 2BCt1—49 to 65 inches; loam
 2BCt2—65 to 75 inches; loam

Minor Components in Map Unit 848

Chawanakee and similar soils

Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Haplohumults, 27 to 35 percent clay in the subsoil, and similar soils

Composition: 4 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Rock outcrop

Composition: 4 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Loamy-skeletal soils that are 40 to 60 inches deep to bedrock

Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Loamy-skeletal soils that are 10 to 20 inches deep to bedrock

Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Coarse-loamy soils that are less than 40 inches deep to paralithic bedrock

Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Eroded soils from which the O horizon and the upper part of the A horizon have been removed

Composition: 1 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

850—Lewisflat loam, 2 to 15 percent slopes

Map Unit Setting

General location: Eastern Butte County and southwestern Plumas County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 3,300 to 4,595 feet (1,006 to 1,402 meters)

Mean annual precipitation: 70 to 80 inches (1,778 to 2,032 millimeters)

Mean annual air temperature: 50 to 54 degrees F (10 to 12 degrees C)

Frost-free period: 110 to 150 days

Map Unit Composition

Lewisflat loam—85 percent

Minor components—15 percent

Characteristics of Lewisflat Loam

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on granitic mountains

Parent material: Fine-loamy residuum weathered from quartz diorite

Observed vegetation: Douglas-fir, white fir, sugar pine, ponderosa pine, incense cedar, California black oak, tanoak, Pacific madrone, whiteleaf manzanita, and dogwood

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel

Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 8.7 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 3 inches; slightly decomposed plant material

A1—3 to 5 inches; loam

A2—5 to 9 inches; loam

Bt1—9 to 18 inches; loam

2Bt2—18 to 33 inches; loam

2Bt3—33 to 49 inches; loam
 2BCt1—49 to 65 inches; loam
 2BCt2—65 to 75 inches; loam

Minor Components in Map Unit 850

Bonneyridge sandy loam and similar soils

Composition: 3 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on granitic mountains
Hydric soil status: Not hydric

Chawanakee and similar soils

Composition: 3 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on granitic mountains
Hydric soil status: Not hydric

Soils that have more than 27 percent clay in the subsoil

Composition: 3 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on granitic mountains
Hydric soil status: Not hydric

Soils that have more than 35 percent rock fragments

Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on granitic mountains
Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to lithic bedrock

Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on granitic mountains
Hydric soil status: Not hydric

Haplohumults, 27 to 35 percent clay, and similar soils

Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on granitic mountains
Hydric soil status: Not hydric

851—Lewisflat loam, 15 to 30 percent slopes

Map Unit Setting

General location: Eastern Butte County and southwestern Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,300 to 4,595 feet (1,006 to 1,402 meters)
Mean annual precipitation: 70 to 80 inches (1,778 to 2,032 millimeters)
Mean annual air temperature: 50 to 54 degrees F (10 to 12 degrees C)
Frost-free period: 110 to 150 days

Map Unit Composition

Lewisflat loam—80 percent
 Minor components—20 percent

Characteristics of Lewisflat Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes on granitic mountains

Parent material: Fine-loamy colluvium and/or residuum weathered from quartz diorite

Observed vegetation: Douglas-fir, white fir, sugar pine, ponderosa pine, incense cedar, California black oak, tanoak, Pacific madrone, whiteleaf manzanita, and dogwood

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel

Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 8.7 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 3 inches; slightly decomposed plant material

A1—3 to 5 inches; loam

A2—5 to 9 inches; loam

Bt1—9 to 18 inches; loam

2Bt2—18 to 33 inches; loam

2Bt3—33 to 49 inches; loam

2BCt1—49 to 65 inches; loam

2BCt2—65 to 75 inches; loam

Minor Components in Map Unit 851

Bonneyr ridge sandy loam and similar soils

Composition: 5 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

Chawanakee and similar soils

Composition: 5 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

Soils that have more than 27 percent clay in the subsoil

Composition: 3 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to lithic bedrock

Composition: 3 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

Soils that have more than 35 percent rock fragments

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

Haplohumults, 27 to 35 percent clay, and similar soils

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

852—Lewisflat loam, 30 to 50 percent slopes

Map Unit Setting

General location: Eastern Butte County and southwestern Plumas County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 3,300 to 4,595 feet (1,006 to 1,402 meters)

Mean annual precipitation: 70 to 80 inches (1,778 to 2,032 millimeters)

Mean annual air temperature: 50 to 54 degrees F (10 to 12 degrees C)

Frost-free period: 110 to 150 days

Map Unit Composition

Lewisflat loam—75 percent

Minor components—25 percent

Characteristics of Lewisflat Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes on granitic mountains

Parent material: Fine-loamy colluvium and/or residuum weathered from quartz diorite

Observed vegetation: Douglas-fir, white fir, sugar pine, ponderosa pine, incense cedar, California black oak, tanoak, Pacific madrone, whiteleaf manzanita, and dogwood

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel

Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 8.7 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 3 inches; slightly decomposed plant material

A1—3 to 5 inches; loam

A2—5 to 9 inches; loam

Bt1—9 to 18 inches; loam

2Bt2—18 to 33 inches; loam

2Bt3—33 to 49 inches; loam

2BCt1—49 to 65 inches; loam

2BCt2—65 to 75 inches; loam

Minor Components in Map Unit 852

Rock outcrop

Composition: 9 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

Chawanakee and similar soils

Composition: 6 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

Soils that have more than 35 percent rock fragments

Composition: 4 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

Bonneyr ridge sandy loam and similar soils

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to lithic bedrock

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

Haplohumults, 27 to 35 percent clay, and similar soils

Composition: 1 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on granitic mountains

Hydric soil status: Not hydric

860—Toadtown-Powellton complex, 2 to 15 percent slopes

Map Unit Setting

General location: Eastern Butte County

Major uses: Timber production, watershed, and wildlife habitat

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 2,995 to 4,370 feet (914 to 1,333 meters)

Mean annual precipitation: 60 to 75 inches (1,524 to 1,905 millimeters)

Mean annual air temperature: 52 to 55 degrees F (11 to 13 degrees C)

Frost-free period: 140 to 180 days

Map Unit Composition

Toadtown gravelly loam—60 percent

Powellton silt loam—20 percent

Minor components—20 percent

Characteristics of Toadtown Gravelly Loam

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on intrusive igneous and metamorphic mountains

Parent material: Clayey residuum weathered from igneous and metamorphic rocks

Observed vegetation: Douglas-fir, ponderosa pine, sugar pine, white fir, tanoak, incense cedar, California black oak, Pacific madrone, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, subangular gravel, 0 to 2 percent subangular cobbles

Restrictive feature: None identified

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 9.5 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 6 inches; gravelly loam

Bt1—6 to 15 inches; silty clay loam

Bt2—15 to 32 inches; silty clay

Bt3—32 to 43 inches; silty clay

Bt4—43 to 55 inches; cobbly silty clay loam

Bt5—55 to 80 inches; silty clay loam

Characteristics of Powellton Silt Loam

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on intrusive igneous and metamorphic mountains

Parent material: Fine-loamy residuum weathered from igneous and metamorphic rocks

Observed vegetation: Douglas-fir, ponderosa pine, sugar pine, white fir, tanoak, incense cedar, California black oak, Pacific madrone, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 15 percent cobbles, 0 to 15 percent gravel

Restrictive feature: None identified

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very high (about 10.6 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A1—1 to 3 inches; silt loam

A2—3 to 9 inches; silt loam

Bt1—9 to 19 inches; silty clay loam

Bt2—19 to 28 inches; silty clay loam

Bt3—28 to 33 inches; silty clay loam

Bt4—33 to 48 inches; silt loam

Bt5—48 to 66 inches; silt loam

BC—66 to 73 inches; loam

C1—73 to 83 inches; loam

C2—83 to 109 inches; loam

Minor Components in Map Unit 860

Palexerults, mesic, and similar soils

Composition: 7 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on intrusive igneous and metamorphic mountains

Hydric soil status: Not hydric

Rogerville and similar soils

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on ultramafic mountains

Hydric soil status: Not hydric

Sites taxadjunct and similar soils

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on metasedimentary mountains

Hydric soil status: Not hydric

Fine textured soils that are 40 to 60 inches deep to paralithic bedrock

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on intrusive igneous and metamorphic mountains

Hydric soil status: Not hydric

Fine-loamy soils that are 40 to 60 inches deep to bedrock

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on intrusive igneous and metamorphic mountains
Hydric soil status: Not hydric

Typic Haploxerults and similar soils

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on intrusive igneous and metamorphic mountains

Hydric soil status: Not hydric

Clayey-skeletal soils

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on intrusive igneous and metamorphic mountains

Hydric soil status: Not hydric

Soils that have a mechanically altered surface layer

Composition: 1 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on intrusive igneous and metamorphic mountains

Hydric soil status: Not hydric

861—Toadtown-Powellton complex, 15 to 30 percent slopes

Map Unit Setting

General location: Eastern Butte County

Major uses: Timber production, watershed, and wildlife habitat

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 2,480 to 4,370 feet (756 to 1,333 meters)

Mean annual precipitation: 60 to 75 inches (1,524 to 1,905 millimeters)

Mean annual air temperature: 52 to 55 degrees F (11 to 13 degrees C)

Frost-free period: 140 to 180 days

Map Unit Composition

Toadtown gravelly loam—60 percent

Powellton silt loam—20 percent

Minor components—20 percent

Characteristics of Toadtown Gravelly Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains

Parent material: Clayey residuum and/or colluvium derived from igneous and metamorphic rocks

Observed vegetation: Douglas-fir, ponderosa pine, sugar pine, white fir, tanoak, incense cedar, California black oak, Pacific madrone, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, subangular gravel, 0 to 2 percent subangular cobbles

Restrictive feature: None identified

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed
Available water capacity: High (about 9.5 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
 A—1 to 6 inches; gravelly loam
 Bt1—6 to 15 inches; silty clay loam
 Bt2—15 to 32 inches; silty clay
 Bt3—32 to 43 inches; silty clay
 Bt4—43 to 55 inches; cobbly silty clay loam
 Bt5—55 to 80 inches; silty clay loam

Characteristics of Powellton Silt Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains

Parent material: Fine-loamy residuum and/or colluvium derived from igneous and metamorphic rocks

Observed vegetation: Douglas-fir, ponderosa pine, sugar pine, white fir, tanoak, incense cedar, California black oak, Pacific madrone, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 15 percent cobbles, 0 to 15 percent gravel

Restrictive feature: None identified

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very high (about 10.6 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
 A1—1 to 3 inches; silt loam
 A2—3 to 9 inches; silt loam
 Bt1—9 to 19 inches; silty clay loam
 Bt2—19 to 28 inches; silty clay loam
 Bt3—28 to 33 inches; silty clay loam

Bt4—33 to 48 inches; silt loam
Bt5—48 to 66 inches; silt loam
BC—66 to 73 inches; loam
C1—73 to 83 inches; loam
C2—83 to 109 inches; loam

Minor Components in Map Unit 861

Palexerults, mesic, and similar soils

Composition: 7 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains

Hydric soil status: Not hydric

Rogerville and similar soils

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on ultramafic mountains

Hydric soil status: Not hydric

Sites taxadjunct and similar soils

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on metasedimentary mountains

Hydric soil status: Not hydric

Fine textured soils that are 40 to 60 inches deep to paralithic bedrock

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains

Hydric soil status: Not hydric

Fine-loamy soils that are 40 to 60 inches deep to bedrock

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains

Hydric soil status: Not hydric

Typic Haploxerults and similar soils

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains

Hydric soil status: Not hydric

Soils that are fine-loamy in the upper part and clayey-skeletal in the lower part

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains

Hydric soil status: Not hydric

Soils that have a mechanically altered surface layer

Composition: 1 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains

Hydric soil status: Not hydric

862—Toadtown-Powellton complex, 30 to 50 percent slopes

Map Unit Setting

General location: Eastern Butte County

Major uses: Timber production, watershed, and wildlife habitat

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 2,575 to 4,370 feet (785 to 1,333 meters)

Mean annual precipitation: 60 to 75 inches (1,524 to 1,905 millimeters)

Mean annual air temperature: 52 to 55 degrees F (11 to 13 degrees C)

Frost-free period: 140 to 180 days

Map Unit Composition

Toadtown gravelly loam—60 percent

Powellton silt loam—20 percent

Minor components—20 percent

Characteristics of Toadtown Gravelly Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains

Parent material: Clayey residuum and/or colluvium derived from igneous and metamorphic rocks

Observed vegetation: Douglas-fir, ponderosa pine, sugar pine, white fir, tanoak, incense cedar, California black oak, Pacific madrone, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, subangular gravel, 0 to 2 percent subangular cobbles

Restrictive feature: None identified

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 9.5 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 6 inches; gravelly loam

Bt1—6 to 15 inches; silty clay loam

Bt2—15 to 32 inches; silty clay

Bt3—32 to 43 inches; silty clay

Bt4—43 to 55 inches; cobbly silty clay loam

Bt5—55 to 80 inches; silty clay loam

Characteristics of Powellton Silt Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains

Parent material: Fine-loamy residuum and/or colluvium derived from igneous and metamorphic rocks

Observed vegetation: Douglas-fir, ponderosa pine, sugar pine, white fir, tanoak, incense cedar, California black oak, Pacific madrone, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 15 percent cobbles, 0 to 15 percent gravel

Restrictive feature: None identified

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very high (about 10.6 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A1—1 to 3 inches; silt loam

A2—3 to 9 inches; silt loam

Bt1—9 to 19 inches; silty clay loam

Bt2—19 to 28 inches; silty clay loam

Bt3—28 to 33 inches; silty clay loam

Bt4—33 to 48 inches; silt loam

Bt5—48 to 66 inches; silt loam

BC—66 to 73 inches; loam

C1—73 to 83 inches; loam

C2—83 to 109 inches; loam

Minor Components in Map Unit 862

Palexerults, mesic, and similar soils

Composition: 7 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains

Hydric soil status: Not hydric

Rogerville and similar soils

Composition: 5 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on ultramafic mountains

Hydric soil status: Not hydric

Sites taxadjunct and similar soils

Composition: 4 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on metasedimentary mountains

Hydric soil status: Not hydric

Fine-loamy soils that are 40 to 60 inches deep to bedrock

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains

Hydric soil status: Not hydric

Soils that have a mechanically altered surface layer

Composition: 1 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains

Hydric soil status: Not hydric

Clayey-skeletal soils

Composition: 1 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains

Hydric soil status: Not hydric

863—Toadtown-Powellton complex, 50 to 70 percent slopes

Map Unit Setting

General location: Eastern Butte County

Major uses: Timber production, watershed, and wildlife habitat

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 2,480 to 3,995 feet (756 to 1,219 meters)

Mean annual precipitation: 60 to 75 inches (1,524 to 1,905 millimeters)

Mean annual air temperature: 52 to 55 degrees F (11 to 13 degrees C)

Frost-free period: 140 to 180 days

Map Unit Composition

Toadtown gravelly loam—60 percent

Powellton silt loam—20 percent

Minor components—20 percent

Characteristics of Toadtown Gravelly Loam

Slope: 50 to 70 percent

Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains

Parent material: Clayey residuum and/or colluvium derived from igneous and metamorphic rocks

Observed vegetation: Douglas-fir, ponderosa pine, sugar pine, white fir, tanoak, incense cedar, California black oak, Pacific madrone, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, subangular gravel, 0 to 2 percent subangular cobbles

Restrictive feature: None identified

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed
Available water capacity: High (about 9.5 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
 A—1 to 6 inches; gravelly loam
 Bt1—6 to 15 inches; silty clay loam
 Bt2—15 to 32 inches; silty clay
 Bt3—32 to 43 inches; silty clay
 Bt4—43 to 55 inches; cobbly silty clay loam
 Bt5—55 to 80 inches; silty clay loam

Characteristics of Powellton Silt Loam

Slope: 50 to 70 percent

Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains

Parent material: Fine-loamy residuum and/or colluvium derived from igneous and metamorphic rocks

Observed vegetation: Douglas-fir, ponderosa pine, sugar pine, white fir, tanoak, incense cedar, California black oak, Pacific madrone, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 15 percent cobbles, 0 to 15 percent gravel

Restrictive feature: None identified

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very high (about 10.6 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
 A1—1 to 3 inches; silt loam
 A2—3 to 9 inches; silt loam
 Bt1—9 to 19 inches; silty clay loam
 Bt2—19 to 28 inches; silty clay loam
 Bt3—28 to 33 inches; silty clay loam
 Bt4—33 to 48 inches; silt loam
 Bt5—48 to 66 inches; silt loam
 BC—66 to 73 inches; loam

C1—73 to 83 inches; loam

C2—83 to 109 inches; loam

Minor Components in Map Unit 863

Palexerults, mesic, and similar soils

Composition: 7 percent

Slope: 50 to 70 percent

Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains

Hydric soil status: Not hydric

Rogerville and similar soils

Composition: 2 percent

Slope: 50 to 70 percent

Geomorphic position: Side slopes on ultramafic mountains

Hydric soil status: Not hydric

Sites taxadjunct and similar soils

Composition: 2 percent

Slope: 50 to 70 percent

Geomorphic position: Side slopes on metasedimentary mountains

Hydric soil status: Not hydric

Fine textured soils that are 40 to 60 inches deep to paralithic bedrock

Composition: 2 percent

Slope: 50 to 70 percent

Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains

Hydric soil status: Not hydric

Fine-loamy soils that are 40 to 60 inches deep to bedrock

Composition: 2 percent

Slope: 50 to 70 percent

Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains

Hydric soil status: Not hydric

Typic Haploxerults and similar soils

Composition: 2 percent

Slope: 50 to 70 percent

Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains

Hydric soil status: Not hydric

Clayey-skeletal soils

Composition: 2 percent

Slope: 50 to 70 percent

Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains

Hydric soil status: Not hydric

Soils that are loamy-skeletal in the upper part and fine textured in the lower part

Composition: 1 percent

Slope: 50 to 70 percent

Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains

Hydric soil status: Not hydric

880—Sites-Jocal taxadjuncts, 2 to 15 percent slopes

Map Unit Setting

General location: Eastern Butte County

Major uses: Timber production, watershed, and wildlife habitat

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 2,870 to 4,320 feet (876 to 1,318 meters)

Mean annual precipitation: 60 to 80 inches (1,524 to 2,030 millimeters)

Mean annual air temperature: 52 to 54 degrees F (11 to 12 degrees C)

Frost-free period: 130 to 180 days

Map Unit Composition

Sites taxadjunct gravelly loam—50 percent

Jocal taxadjunct gravelly loam—35 percent

Minor components—15 percent

Characteristics of Sites Taxadjunct Gravelly Loam

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on metasedimentary mountains

Parent material: Silty and clayey residuum weathered from metasedimentary rocks

Observed vegetation: Ponderosa pine, Douglas-fir, Pacific madrone, incense cedar, sugar pine, tanoak, California black oak, white fir, deerbrush, and Pacific poison oak

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel

Restrictive feature: None identified

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 7.3 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; gravelly loam

BA—3 to 10 inches; very gravelly loam

Bt1—10 to 21 inches; gravelly silty clay

Bt2—21 to 34 inches; gravelly silty clay

Bt3—34 to 59 inches; silty clay

Bt4—59 to 72 inches; silty clay

Characteristics of Jocal Taxadjunct Gravelly Loam

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on metasedimentary mountains

Parent material: Fine-loamy residuum weathered from metasedimentary rocks

Observed vegetation: Ponderosa pine, Douglas-fir, Pacific madrone, incense cedar, sugar pine, tanoak, California black oak, white fir, deerbrush, and Pacific poison oak

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 5.3 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 3 inches; slightly decomposed plant material

A—3 to 4 inches; gravelly loam

Bw—4 to 9 inches; gravelly loam

Bt1—9 to 19 inches; gravelly loam

Bt2—19 to 33 inches; gravelly loam

Bt3—33 to 46 inches; very gravelly clay loam

BCt—46 to 52 inches; extremely gravelly clay loam

Cr—52 to 68 inches; bedrock

Minor Components in Map Unit 880

Rogerville and similar soils

Composition: 3 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on ultramafic mountains

Hydric soil status: Not hydric

Palexerults, mesic, and similar soils

Composition: 3 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on metasedimentary mountains

Hydric soil status: Not hydric

Toadtown and similar soils

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on intrusive igneous and metamorphic mountains

Hydric soil status: Not hydric

Powellton and similar soils

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on intrusive igneous and metamorphic mountains

Hydric soil status: Not hydric

Mac gravelly loam and similar soils

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on metasedimentary mountains

Hydric soil status: Not hydric

Fine-loamy soils that are more than 60 inches deep to bedrock

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on metasedimentary mountains

Hydric soil status: Not hydric

Fine textured soils that are 20 to 60 inches deep to paralithic bedrock

Composition: 1 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on metasedimentary mountains

Hydric soil status: Not hydric

881—Sites-Jocal taxadjuncts, 15 to 30 percent slopes

Map Unit Setting

General location: Eastern Butte County

Major uses: Timber production, watershed, and wildlife habitat

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 2,595 to 4,195 feet (792 to 1,280 meters)

Mean annual precipitation: 60 to 80 inches (1,524 to 2,030 millimeters)

Mean annual air temperature: 52 to 54 degrees F (11 to 12 degrees C)

Frost-free period: 130 to 180 days

Map Unit Composition

Sites taxadjunct gravelly loam—50 percent

Jocal taxadjunct gravelly loam—35 percent

Minor components—15 percent

Characteristics of Sites Taxadjunct Gravelly Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes on metasedimentary mountains

Parent material: Silty and clayey colluvium and/or residuum weathered from metasedimentary rocks

Observed vegetation: Ponderosa pine, Douglas-fir, Pacific madrone, incense cedar, sugar pine, tanoak, California black oak, white fir, deerbrush, and Pacific poison oak

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel

Restrictive feature: None identified

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 7.3 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

*Interpretive groups**Land capability, irrigated:* 4e-1*Land capability, nonirrigated:* 4e-1*Hydric soil status:* Not hydric*Hydrologic soil group:* B*Typical profile*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; gravelly loam

BA—3 to 10 inches; very gravelly loam

Bt1—10 to 21 inches; gravelly silty clay

Bt2—21 to 34 inches; gravelly silty clay

Bt3—34 to 59 inches; silty clay

Bt4—59 to 72 inches; silty clay

Characteristics of Jocal Taxadjunct Gravelly Loam*Slope:* 15 to 30 percent*Geomorphic position:* Side slopes on metasedimentary mountains*Parent material:* Fine-loamy colluvium and/or residuum weathered from metasedimentary rocks*Observed vegetation:* Ponderosa pine, Douglas-fir, Pacific madrone, incense cedar, sugar pine, tanoak, California black oak, white fir, deerbrush, and Pacific poison oak*Texture of the surface layer:* Slightly decomposed plant material*Percentage of the surface covered by rock fragments:* 0 to 15 percent coarse, subangular gravel*Depth to a restrictive feature (paralithic bedrock):* 40 to 60 inches*Shrink-swell potential:* Low (LEP of less than 3)*Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)**Annual flooding frequency:* None*Annual ponding frequency:* None*Water table (zone of saturation):* None observed*Available water capacity:* Moderate (about 5.3 inches)*Natural drainage class:* Well drained*Surface runoff (bare conditions):* Medium*Interpretive groups**Land capability, irrigated:* 4e-1*Land capability, nonirrigated:* 4e-1*Hydric soil status:* Not hydric*Hydrologic soil group:* B*Typical profile*

Oi—0 to 3 inches; slightly decomposed plant material

A—3 to 4 inches; gravelly loam

Bw—4 to 9 inches; gravelly loam

Bt1—9 to 19 inches; gravelly loam

Bt2—19 to 33 inches; gravelly loam

Bt3—33 to 46 inches; very gravelly clay loam

BCt—46 to 52 inches; extremely gravelly clay loam

Cr—52 to 68 inches; bedrock

Minor Components in Map Unit 881**Rogerville and similar soils***Composition:* 3 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on ultramafic mountains

Hydric soil status: Not hydric

Toadtown and similar soils

Composition: 3 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains

Hydric soil status: Not hydric

Powellton and similar soils

Composition: 3 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains

Hydric soil status: Not hydric

Mac gravelly loam and similar soils

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on metasedimentary mountains

Hydric soil status: Not hydric

Palexerults, mesic, and similar soils

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on metasedimentary mountains

Hydric soil status: Not hydric

Fine textured soils that are 20 to 60 inches deep to paralithic bedrock

Composition: 1 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on metasedimentary mountains

Hydric soil status: Not hydric

Fine-loamy soils that are more than 60 inches deep to bedrock

Composition: 1 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on metasedimentary mountains

Hydric soil status: Not hydric

882—Sites-Jocal taxadjuncts, 30 to 50 percent slopes

Map Unit Setting

General location: Eastern Butte County

Major uses: Timber production, watershed, and wildlife habitat

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 2,595 to 3,995 feet (792 to 1,219 meters)

Mean annual precipitation: 60 to 80 inches (1,524 to 2,030 millimeters)

Mean annual air temperature: 52 to 54 degrees F (11 to 12 degrees C)

Frost-free period: 130 to 180 days

Map Unit Composition

Sites taxadjunct gravelly loam—50 percent

Jocal taxadjunct gravelly loam—35 percent

Minor components—15 percent

Characteristics of Sites Taxadjunct Gravelly Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes on metasedimentary mountains

Parent material: Silty and clayey colluvium and/or residuum weathered from metasedimentary rocks

Observed vegetation: Ponderosa pine, Douglas-fir, Pacific madrone, incense cedar, sugar pine, tanoak, California black oak, white fir, deerbrush, and Pacific poison oak

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel

Restrictive feature: None identified

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 7.3 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; gravelly loam

BA—3 to 10 inches; very gravelly loam

Bt1—10 to 21 inches; gravelly silty clay

Bt2—21 to 34 inches; gravelly silty clay

Bt3—34 to 59 inches; silty clay

Bt4—59 to 72 inches; silty clay

Characteristics of Jocal Taxadjunct Gravelly Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes on metasedimentary mountains

Parent material: Fine-loamy colluvium and/or residuum weathered from metasedimentary rocks

Observed vegetation: Ponderosa pine, Douglas-fir, Pacific madrone, incense cedar, sugar pine, tanoak, California black oak, white fir, deerbrush, and Pacific poison oak

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 5.3 inches)

Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 3 inches; slightly decomposed plant material
 A—3 to 4 inches; gravelly loam
 Bw—4 to 9 inches; gravelly loam
 Bt1—9 to 19 inches; gravelly loam
 Bt2—19 to 33 inches; gravelly loam
 Bt3—33 to 46 inches; very gravelly clay loam
 BCt—46 to 52 inches; extremely gravelly clay loam
 Cr—52 to 68 inches; bedrock

Minor Components in Map Unit 882

Rogerville and similar soils

Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on ultramafic mountains
Hydric soil status: Not hydric

Mac gravelly loam and similar soils

Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metasedimentary mountains
Hydric soil status: Not hydric

Fine-loamy soils that are more than 60 inches deep to bedrock

Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metasedimentary mountains
Hydric soil status: Not hydric

Palexerults, mesic, and similar soils

Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metasedimentary mountains
Hydric soil status: Not hydric

Fine textured soils that are 20 to 60 inches deep to paralithic bedrock

Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metasedimentary mountains
Hydric soil status: Not hydric

883—Sites-Jocal taxadjuncts, 50 to 70 percent slopes

Map Unit Setting

General location: Eastern Butte County
Major uses: Timber production, watershed, and wildlife habitat
Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains
Elevation: 2,700 to 3,700 feet (823 to 1,128 meters)
Mean annual precipitation: 60 to 80 inches (1,524 to 2,030 millimeters)
Mean annual air temperature: 52 to 54 degrees F (11 to 12 degrees C)
Frost-free period: 130 to 180 days

Map Unit Composition

Sites taxadjunct gravelly loam—50 percent
 Jocal taxadjunct gravelly loam—40 percent
 Minor components—10 percent

Characteristics of Sites Taxadjunct Gravelly Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes on metasedimentary mountains
Parent material: Silty and clayey colluvium and/or residuum weathered from metasedimentary rocks
Observed vegetation: Ponderosa pine, Douglas-fir, Pacific madrone, incense cedar, sugar pine, tanoak, California black oak, white fir, deerbrush, and Pacific poison oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)
Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 7.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
 A—1 to 3 inches; gravelly loam
 BA—3 to 10 inches; very gravelly loam
 Bt1—10 to 21 inches; gravelly silty clay
 Bt2—21 to 34 inches; gravelly silty clay
 Bt3—34 to 59 inches; silty clay
 Bt4—59 to 72 inches; silty clay

Characteristics of Jocal Taxadjunct Gravelly Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes on metasedimentary mountains
Parent material: Fine-loamy colluvium and/or residuum weathered from metasedimentary rocks

Observed vegetation: Ponderosa pine, Douglas-fir, Pacific madrone, incense cedar, sugar pine, tanoak, California black oak, white fir, deerbrush, and Pacific poison oak

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 5.3 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 3 inches; slightly decomposed plant material

A—3 to 4 inches; gravelly loam

Bw—4 to 9 inches; gravelly loam

Bt1—9 to 19 inches; gravelly loam

Bt2—19 to 33 inches; gravelly loam

Bt3—33 to 46 inches; very gravelly clay loam

BCt—46 to 52 inches; extremely gravelly clay loam

Cr—52 to 68 inches; bedrock

Minor Components in Map Unit 883

Mac gravelly loam and similar soils

Composition: 3 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on metasedimentary mountains

Hydric soil status: Not hydric

Palexerults, mesic, and similar soils

Composition: 3 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on metasedimentary mountains

Hydric soil status: Not hydric

Fine textured soils that are 20 to 60 inches deep to paralithic bedrock

Composition: 2 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on metasedimentary mountains

Hydric soil status: Not hydric

Fine-loamy soils that are more than 60 inches deep to bedrock

Composition: 2 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on metasedimentary mountains

Hydric soil status: Not hydric

885—Rogerville silt loam, 2 to 15 percent slopes

Map Unit Setting

General location: Eastern Butte County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 3,300 to 4,195 feet (1,006 to 1,280 meters)

Mean annual precipitation: 65 to 80 inches (1,651 to 2,032 millimeters)

Mean annual air temperature: 52 to 54 degrees F (11 to 12 degrees C)

Frost-free period: 140 to 170 days

Map Unit Composition

Rogerville silt loam—75 percent

Minor components—25 percent

Characteristics of Rogerville Silt Loam

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on ultramafic mountains

Parent material: Silty and clayey residuum weathered from ultramafic rocks

Observed vegetation: Douglas-fir, sugar pine, ponderosa pine, white fir, tanoak, Pacific madrone, California black oak, incense cedar, manzanita, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent subrounded gravel

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.3 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 7 inches; silt loam

Bt1—7 to 13 inches; silty clay loam

Bt2—13 to 24 inches; silty clay

Bt3—24 to 34 inches; gravelly silty clay loam

Bt4—34 to 42 inches; gravelly clay loam

Bt5—42 to 51 inches; extremely gravelly clay loam

Cr—51 to 55 inches; bedrock

Minor Components in Map Unit 885**Sites taxadjunct loam and similar soils**

Composition: 5 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on metasedimentary mountains

Hydric soil status: Not hydric

Soils that are fine-silty in the upper part and clayey in the lower part

Composition: 5 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on ultramafic mountains

Hydric soil status: Not hydric

Fine textured soils that are more than 60 inches deep to paralithic bedrock

Composition: 5 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on ultramafic mountains

Hydric soil status: Not hydric

Soils that are fine-loamy in the upper part and clayey in the lower part

Composition: 4 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on ultramafic mountains

Hydric soil status: Not hydric

Soils that overlie peridotite or serpentine bedrock (lithic)

Composition: 1 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on ultramafic mountains

Hydric soil status: Not hydric

Clayey-skeletal soils

Composition: 1 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on ultramafic mountains

Hydric soil status: Not hydric

Soils that have andic material on the surface

Composition: 1 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on ultramafic mountains

Hydric soil status: Not hydric

Soils that have a mechanically altered surface layer

Composition: 1 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on ultramafic mountains

Hydric soil status: Not hydric

Toadtown and similar soils

Composition: 1 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on intrusive igneous and metamorphic mountains

Hydric soil status: Not hydric

Powellton and similar soils

Composition: 1 percent

Slope: 2 to 15 percent

Geomorphic position: Ridgetops on intrusive igneous and metamorphic mountains
Hydric soil status: Not hydric

886—Rogerville silt loam, 15 to 30 percent slopes

Map Unit Setting

General location: Eastern Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,300 to 4,195 feet (1,006 to 1,280 meters)
Mean annual precipitation: 65 to 80 inches (1,651 to 2,032 millimeters)
Mean annual air temperature: 52 to 54 degrees F (11 to 12 degrees C)
Frost-free period: 140 to 170 days

Map Unit Composition

Rogerville silt loam—80 percent
 Minor components—20 percent

Characteristics of Rogerville Silt Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on ultramafic mountains
Parent material: Silty and clayey residuum and/or colluvium derived from ultramafic rocks
Observed vegetation: Douglas-fir, sugar pine, ponderosa pine, white fir, tanoak, Pacific madrone, California black oak, incense cedar, manzanita, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent subrounded gravel
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: High (LEP of 6 to 9)
Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material
 A—2 to 7 inches; silt loam
 Bt1—7 to 13 inches; silty clay loam
 Bt2—13 to 24 inches; silty clay
 Bt3—24 to 34 inches; gravelly silty clay loam
 Bt4—34 to 42 inches; gravelly clay loam

Bt5—42 to 51 inches; extremely gravelly clay loam
Cr—51 to 55 inches; bedrock

Minor Components in Map Unit 886

Soils that are fine-silty in the upper part and clayey in the lower part

Composition: 5 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on ultramafic mountains

Hydric soil status: Not hydric

Soils that are fine-loamy in the upper part and clayey in the lower part

Composition: 4 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on ultramafic mountains

Hydric soil status: Not hydric

Sites taxadjunct gravelly loam and similar soils

Composition: 3 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on metasedimentary mountains

Hydric soil status: Not hydric

Fine textured soils that are more than 60 inches deep to paralithic bedrock

Composition: 3 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on ultramafic mountains

Hydric soil status: Not hydric

Soils that overlie peridotite or serpentine bedrock (lithic)

Composition: 1 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on ultramafic mountains

Hydric soil status: Not hydric

Clayey-skeletal soils

Composition: 1 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on ultramafic mountains

Hydric soil status: Not hydric

Soils that have andic material on the surface

Composition: 1 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on ultramafic mountains

Hydric soil status: Not hydric

Soils that have a mechanically altered surface layer

Composition: 1 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on ultramafic mountains

Hydric soil status: Not hydric

Soils that have a thick A horizon and are on north-facing slopes

Composition: 1 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on ultramafic mountains

Hydric soil status: Not hydric

892—Rogerville silt loam, 50 to 70 percent slopes

Map Unit Setting

General location: Eastern Butte County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 3,300 to 4,195 feet (1,006 to 1,280 meters)

Mean annual precipitation: 65 to 80 inches (1,651 to 2,032 millimeters)

Mean annual air temperature: 52 to 54 degrees F (11 to 12 degrees C)

Frost-free period: 140 to 170 days

Map Unit Composition

Rogerville silt loam—85 percent

Minor components—15 percent

Characteristics of Rogerville Silt Loam

Slope: 50 to 70 percent

Geomorphic position: Side slopes on ultramafic mountains

Parent material: Silty and clayey residuum and/or colluvium derived from ultramafic rocks

Observed vegetation: Douglas-fir, sugar pine, ponderosa pine, white fir, tanoak, Pacific madrone, California black oak, incense cedar, manzanita, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent subrounded gravel

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.3 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 7 inches; silt loam

Bt1—7 to 13 inches; silty clay loam

Bt2—13 to 24 inches; silty clay

Bt3—24 to 34 inches; gravelly silty clay loam

Bt4—34 to 42 inches; gravelly clay loam

Bt5—42 to 51 inches; extremely gravelly clay loam

Cr—51 to 55 inches; bedrock

Minor Components in Map Unit 892

Sites taxadjunct gravelly loam and similar soils

Composition: 5 percent

Slope: 50 to 70 percent

Geomorphic position: Side slopes on metasedimentary mountains

Hydric soil status: Not hydric

Fine textured soils that are more than 60 inches deep to paralithic bedrock

Composition: 5 percent

Slope: 50 to 70 percent

Geomorphic position: Side slopes on ultramafic mountains

Hydric soil status: Not hydric

Fine-loamy soils that are 40 to 60 inches deep to paralithic bedrock

Composition: 3 percent

Slope: 50 to 70 percent

Geomorphic position: Side slopes on ultramafic mountains

Hydric soil status: Not hydric

Soils that are fine-loamy in the upper part and clayey in the lower part

Composition: 2 percent

Slope: 50 to 70 percent

Geomorphic position: Side slopes on ultramafic mountains

Hydric soil status: Not hydric

893—Rogerville silt loam, 30 to 50 percent slopes

Map Unit Setting

General location: Eastern Butte County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 3,300 to 4,195 feet (1,006 to 1,280 meters)

Mean annual precipitation: 65 to 80 inches (1,651 to 2,032 millimeters)

Mean annual air temperature: 52 to 54 degrees F (11 to 12 degrees C)

Frost-free period: 140 to 170 days

Map Unit Composition

Rogerville silt loam—85 percent

Minor components—15 percent

Characteristics of Rogerville Silt Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes on ultramafic mountains

Parent material: Silty and clayey residuum and/or colluvium derived from ultramafic rocks

Observed vegetation: Douglas-fir, sugar pine, ponderosa pine, white fir, tanoak, Pacific madrone, California black oak, incense cedar, manzanita, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent subrounded gravel

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.3 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 7 inches; silt loam

Bt1—7 to 13 inches; silty clay loam

Bt2—13 to 24 inches; silty clay

Bt3—24 to 34 inches; gravelly silty clay loam

Bt4—34 to 42 inches; gravelly clay loam

Bt5—42 to 51 inches; extremely gravelly clay loam

Cr—51 to 55 inches; bedrock

Minor Components in Map Unit 893

Sites taxadjunct gravelly loam and similar soils

Composition: 5 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on metasedimentary mountains

Hydric soil status: Not hydric

Fine textured soils that are more than 60 inches deep to paralithic bedrock

Composition: 5 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on ultramafic mountains

Hydric soil status: Not hydric

Fine-loamy soils that are 40 to 60 inches deep to paralithic bedrock

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on ultramafic mountains

Hydric soil status: Not hydric

Soils that are fine-loamy in the upper part and clayey in the lower part

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on ultramafic mountains

Hydric soil status: Not hydric

902—Lava flows-Lumpkin complex, 0 to 15 percent slopes

Map Unit Setting

General location: Eastern Butte County and southwestern Plumas County

Major uses: Source of aggregate, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 3,195 to 5,200 feet (975 to 1,585 meters)

Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)

Mean annual air temperature: 50 to 52 degrees F (10 to 11 degrees C)

Frost-free period: 110 to 140 days

Map Unit Composition

Lava flows (Lovejoy basalt)—50 percent

Lumpkin gravelly medial sandy loam—40 percent

Minor components—10 percent

Characteristics of Lava Flows (Lovejoy Basalt)

Slope: 0 to 15 percent

Geomorphic position: The top of basalt ridges

Surface runoff (bare conditions): Very high

Definition: Lava flows consist of exposed basalt formed from lateral surficial outpouring of molten lava from a vent or fissure (fig. 27).

Characteristics of Lumpkin Gravelly Medial Sandy Loam

Slope: 0 to 15 percent

Geomorphic position: The top of basalt ridges

Parent material: Mixed tephra and gravelly and cobbly residuum weathered from basalt

Observed vegetation: Scattered ponderosa pine, incense cedar, California black oak, manzanita, and annual grasses and forbs

Texture of the surface layer: Gravelly medial sandy loam

Percentage of the surface covered by rock fragments: 10 to 80 percent coarse gravel, 2 to 20 percent cobbles, 0 to 5 percent stones



Figure 27.—An area of Lava flows. Fall River Canyon is in the background; Shake Ridge is on the left, and Lumpkin Ridge is on the right.

Depth to a restrictive feature (lithic bedrock): 10 to 20 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 0.7 inch)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 3 inches; gravelly medial sandy loam

Bw1—3 to 8 inches; extremely gravelly medial fine sandy loam

Bw2—8 to 14 inches; extremely cobbly medial sandy loam

R—14 inches; bedrock

Minor Components in Map Unit 902

Escarpments

Composition: 3 percent

Slope: 15 to 100 percent

Geomorphic position: The top of basalt ridges

Hydric soil status: Not hydric

Medial-skeletal soils that are less than 10 inches deep to lithic bedrock

Composition: 2 percent

Slope: 0 to 15 percent

Geomorphic position: The top of basalt ridges

Hydric soil status: Not hydric

Pits

Composition: 1 percent

Slope: 0 to 15 percent

Geomorphic position: The top of basalt ridges

Hydric soil status: Not hydric

Lavatop and similar soils

Composition: 1 percent

Slope: 0 to 15 percent

Geomorphic position: The top of basalt ridges

Hydric soil status: Not hydric

Timberisland and similar soils

Composition: 1 percent

Slope: 0 to 15 percent

Geomorphic position: The top of basalt ridges

Hydric soil status: Not hydric

Springs and riparian areas

Composition: 1 percent

Slope: 0 to 15 percent

Geomorphic position: The top of basalt ridges

Hydric soil status: Hydric

At an elevation of more than 4,800 feet, soils with a frigid soil temperature regime

Composition: 1 percent

Slope: 0 to 15 percent

Geomorphic position: The top of basalt ridges

Hydric soil status: Not hydric

903—Mudwash-Timberisland-Lavatop complex, 2 to 30 percent slopes

Map Unit Setting

General location: Eastern Butte County and southwestern Plumas County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 3,195 to 5,200 feet (975 to 1,585 meters)

Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)

Mean annual air temperature: 46 to 52 degrees F (8 to 11 degrees C)

Frost-free period: 110 to 140 days

Map Unit Composition

Mudwash gravelly medial sandy loam—45 percent

Timberisland very gravelly medial sandy loam—25 percent

Lavatop gravelly medial fine sandy loam—20 percent

Minor components—10 percent

Characteristics of Mudwash Gravelly Medial Sandy Loam

Slope: 2 to 30 percent

Geomorphic position: Concave areas on the top and side slopes of basalt ridges

Parent material: Mixed tephra over gravelly colluvium and/or residuum weathered from basalt

Observed vegetation: White fir, incense cedar, ponderosa pine, sugar pine, whitethorn ceanothus, deerbrush, and manzanita

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 20 percent coarse, subangular gravel, 0 to 25 percent subangular cobbles

Depth to a restrictive feature (paralithic bedrock): 60 to 80 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 5.5 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
 Oa—1 to 4 inches; moderately decomposed plant material
 A1—4 to 8 inches; gravelly medial sandy loam
 A2—8 to 13 inches; gravelly medial sandy loam
 Bw—13 to 26 inches; gravelly medial sandy loam
 2Bt1—26 to 35 inches; gravelly loam
 2Bt2—35 to 52 inches; gravelly loam
 2BCt—52 to 72 inches; extremely gravelly loam
 2Cr—72 to 89 inches; bedrock

Characteristics of Timberisland Very Gravelly Medial Sandy Loam

Slope: 2 to 30 percent

Geomorphic position: The top and side slopes of basalt ridges

Parent material: Mixed tephra and gravelly and cobbly residuum and/or colluvium derived from basalt

Observed vegetation: Ponderosa pine, incense cedar, California black oak, white fir, sugar pine, deerbrush, and manzanita

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 40 percent coarse, subangular gravel, 0 to 25 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 40 to 60 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 2.0 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material
 Oe—2 to 3 inches; moderately decomposed plant material
 A1—3 to 6 inches; very gravelly medial sandy loam
 A2—6 to 14 inches; very gravelly medial sandy loam
 Bw1—14 to 25 inches; very gravelly medial sandy loam
 Bw2—25 to 35 inches; extremely cobbly medial sandy loam
 Bw3—35 to 48 inches; extremely cobbly medial sandy loam
 2R—48 inches; bedrock

Characteristics of Lavatop Gravelly Medial Fine Sandy Loam

Slope: 2 to 30 percent

Geomorphic position: The top and side slopes of basalt ridges

Parent material: Mixed tephra and gravelly and cobbly residuum and/or colluvium derived from basalt

Observed vegetation: Ponderosa pine, incense cedar, white fir, Douglas-fir, California black oak, and manzanita

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 30 percent coarse, subangular gravel, 0 to 40 percent subangular cobbles, 0 to 30 percent subangular stones

Depth to a restrictive feature (lithic bedrock): 20 to 40 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.4 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material

A—0.5 inch to 4 inches; gravelly medial fine sandy loam

Bw1—4 to 15 inches; very gravelly medial sandy loam

Bw2—15 to 26 inches; extremely gravelly medial sandy loam

R—26 inches; bedrock

Minor Components in Map Unit 903

Lumpkin and similar soils

Composition: 3 percent

Slope: 2 to 30 percent

Geomorphic position: The top and side slopes of basalt ridges

Hydric soil status: Not hydric

Escarpments

Composition: 2 percent

Slope: 30 to 100 percent

Geomorphic position: The top and side slopes of basalt ridges

Hydric soil status: Not hydric

Lava flows

Composition: 2 percent

Slope: 2 to 30 percent

Geomorphic position: The top and side slopes of basalt ridges

Hydric soil status: Not hydric

Soils that are underlain by paralithic bedrock

Composition: 1 percent

Slope: 2 to 30 percent

Geomorphic position: The top and side slopes of basalt ridges

Hydric soil status: Not hydric

At an elevation of more than 4,800 feet, soils with a frigid soil temperature regime*Composition:* 1 percent*Slope:* 2 to 30 percent*Geomorphic position:* The top and side slopes of basalt ridges*Hydric soil status:* Not hydric**Soils that are less than 10 inches deep to lithic bedrock***Composition:* 1 percent*Slope:* 2 to 30 percent*Geomorphic position:* The top and side slopes of basalt ridges*Hydric soil status:* Not hydric**904—Lava flows-Lavatop complex, 15 to 30 percent slopes*****Map Unit Setting****General location:* Eastern Butte County and southwestern Plumas County*Major uses:* Wildlife habitat, watershed, and limited timber production*Major land resource area:* 22A*Landscape:* Northern Sierra Nevada Mountains*Elevation:* 3,195 to 5,200 feet (975 to 1,585 meters)*Mean annual precipitation:* 75 to 80 inches (1,905 to 2,032 millimeters)*Mean annual air temperature:* 50 to 52 degrees F (10 to 11 degrees C)*Frost-free period:* 110 to 140 days***Map Unit Composition***

Lava flows (Lovejoy basalt)—60 percent

Lavatop gravelly medial fine sandy loam—20 percent

Minor components—20 percent

Characteristics of Lava Flows (Lovejoy Basalt)*Slope:* 15 to 30 percent*Geomorphic position:* Side slopes on basalt ridges*Surface runoff (bare conditions):* Very high*Definition:* Lava flows consist of exposed basalt formed from lateral surficial outpouring of molten lava from a vent or fissure.***Characteristics of Lavatop Gravelly Medial Fine Sandy Loam****Slope:* 15 to 30 percent*Geomorphic position:* Side slopes on basalt ridges*Parent material:* Mixed tephra and gravelly and cobbly residuum and/or colluvium derived from basalt*Observed vegetation:* Scattered ponderosa pine, greenleaf manzanita, California black oak, buckwheat, and annual grasses and forbs*Texture of the surface layer:* Slightly decomposed plant material*Percentage of the surface covered by rock fragments:* 5 to 30 percent coarse, subangular gravel, 0 to 40 percent subangular cobbles, 0 to 30 percent subangular stones*Depth to a restrictive feature (lithic bedrock):* 20 to 40 inches*Shrink-swell potential:* Low (LEP of less than 3)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* None*Annual ponding frequency:* None

Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.4 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material
 A—0.5 inch to 4 inches; gravelly medial fine sandy loam
 Bw1—4 to 15 inches; very gravelly medial sandy loam
 Bw2—15 to 26 inches; extremely gravelly medial sandy loam
 R—26 inches; bedrock

Minor Components in Map Unit 904

Lumpkin and similar soils

Composition: 5 percent
Slope: 2 to 15 percent
Geomorphic position: Side slopes on basalt ridges
Hydric soil status: Not hydric

Timberisland and similar soils

Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on basalt ridges
Hydric soil status: Not hydric

Escarpments

Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on basalt ridges
Hydric soil status: Not hydric

At an elevation of more than 4,800 feet, soils with a frigid soil temperature regime

Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on basalt ridges
Hydric soil status: Not hydric

Springs and riparian areas

Composition: 2 percent
Slope: 2 to 30 percent
Geomorphic position: Side slopes on basalt ridges
Hydric soil status: Hydric

905—Lava flows-Lumpkin complex, 30 to 50 percent slopes

Map Unit Setting

General location: Eastern Butte County and southwestern Plumas County
Major uses: Wildlife habitat and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 3,195 to 5,200 feet (975 to 1,585 meters)

Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)

Mean annual air temperature: 50 to 52 degrees F (10 to 11 degrees C)

Frost-free period: 110 to 140 days

Map Unit Composition

Lava flows (Lovejoy basalt)—60 percent

Lumpkin gravelly medial sandy loam—30 percent

Minor components—10 percent

Characteristics of Lava Flows (Lovejoy Basalt)

Slope: 30 to 50 percent

Geomorphic position: Benches on side slopes on basalt ridges

Surface runoff (bare conditions): Very high

Definition: Lava flows consist of exposed basalt formed from lateral surficial outpouring of molten lava from a vent or fissure.

Characteristics of Lumpkin Gravelly Medial Sandy Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes on basalt ridges

Parent material: Mixed tephra and gravelly and cobbly residuum and/or colluvium derived from basalt

Observed vegetation: Scattered ponderosa pine, greenleaf manzanita, California black oak, buckwheat, and annual grasses and forbs

Texture of the surface layer: Gravelly medial sandy loam

Percentage of the surface covered by rock fragments: 10 to 80 percent coarse gravel, 2 to 20 percent cobbles, 0 to 5 percent stones

Depth to a restrictive feature (lithic bedrock): 10 to 20 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 0.7 inch)

Natural drainage class: Well drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 3 inches; gravelly medial sandy loam

Bw1—3 to 8 inches; extremely gravelly medial fine sandy loam

Bw2—8 to 14 inches; extremely cobbly medial sandy loam

R—14 inches; bedrock

Minor Components in Map Unit 905

Escarpments

Composition: 5 percent

Slope: 50 to 100 percent

Geomorphic position: Backslopes on basalt ridges

Hydric soil status: Not hydric

Lavatop and similar soils

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on basalt ridges

Hydric soil status: Not hydric

At an elevation of more than 4,800 feet, soils with a frigid soil temperature regime

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on basalt ridges

Hydric soil status: Not hydric

Springs and riparian areas

Composition: 1 percent

Slope: 30 to 50 percent

Geomorphic position: Backslopes on basalt ridges

Hydric soil status: Hydric

906—Lava flows-Lumpkin complex, 50 to 70 percent slopes

Map Unit Setting

General location: Eastern Butte County and southwestern Plumas County

Major uses: Wildlife habitat and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 3,195 to 5,200 feet (975 to 1,585 meters)

Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)

Mean annual air temperature: 50 to 52 degrees F (10 to 11 degrees C)

Frost-free period: 110 to 140 days

Map Unit Composition

Lava flows (Lovejoy basalt)—60 percent

Lumpkin gravelly medial sandy loam—30 percent

Minor components—10 percent

Characteristics of Lava Flows (Lovejoy Basalt)

Slope: 50 to 70 percent

Geomorphic position: Benches on side slopes on basalt ridges

Surface runoff (bare conditions): Very high

Definition: Lava flows consist of exposed basalt formed from lateral surficial outpouring of molten lava from a vent or fissure.

Characteristics of Lumpkin Gravelly Medial Sandy Loam

Slope: 50 to 70 percent

Geomorphic position: Side slopes on basalt ridges

Parent material: Mixed tephra and gravelly and cobbly residuum and/or colluvium derived from basalt

Observed vegetation: Scattered ponderosa pine, greenleaf manzanita, California black oak, buckwheat, and annual grasses and forbs

Texture of the surface layer: Gravelly medial sandy loam
Percentage of the surface covered by rock fragments: 10 to 80 percent coarse gravel,
 2 to 20 percent cobbles, 0 to 5 percent stones
Depth to a restrictive feature (lithic bedrock): 10 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 0.7 inch)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
 A—0 to 3 inches; gravelly medial sandy loam
 Bw1—3 to 8 inches; extremely gravelly medial fine sandy loam
 Bw2—8 to 14 inches; extremely cobbly medial sandy loam
 R—14 inches; bedrock

Minor Components in Map Unit 906

At an elevation of more than 4,800 feet, soils with a frigid soil temperature regime

Composition: 4 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes on basalt ridges
Hydric soil status: Not hydric

Escarpments

Composition: 3 percent
Slope: 70 to 100 percent
Geomorphic position: Backslopes on basalt ridges
Hydric soil status: Not hydric

Soils that have slopes of less than 50 percent and are on narrow benches

Composition: 3 percent
Slope: 2 to 50 percent
Geomorphic position: Benches on side slopes on basalt ridges
Hydric soil status: Not hydric

911—Endoaquolls, 0 to 8 percent slopes

Map Unit Setting

General location: Northeastern Butte County
Major uses: Watershed, wildlife habitat, and livestock grazing
Major land resource area: 22B
Landscape: Northern Sierra Nevada and Southern Cascade Mountains
Elevation: 3,595 to 4,995 feet (1,097 to 1,524 meters)
Mean annual precipitation: 65 to 75 inches (1,651 to 1,905 millimeters)

Mean annual air temperature: 48 to 54 degrees F (9 to 12 degrees C)

Frost-free period: 100 to 180 days

Map Unit Composition

Endoaquolls loam—75 percent

Minor components—25 percent

Characteristics of Endoaquolls Loam

Slope: 0 to 8 percent

Geomorphic position: Meadows in volcanic and metamorphic mountains

Parent material: Fine-loamy alluvium over clayey alluvium over fine-loamy alluvium derived from volcanic and metamorphic rocks

Observed vegetation: Sedges, rushes, annual grasses and forbs, willows, lodgepole pine, ponderosa pine, and incense cedar

Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: None

Restrictive feature: None identified

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Occasional

Annual ponding frequency: None

Depth to a water table (zone of saturation): 0 to 17 inches

Available water capacity: Very high (about 10.4 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

A1—0 to 3 inches; loam

A2—3 to 8 inches; loam

A3—8 to 17 inches; clay loam

Bw—17 to 28 inches; silty clay

Ab—28 to 43 inches; silty clay

2Bg1—43 to 58 inches; loam

2Bg2—58 to 73 inches; sandy clay loam

Minor Components in Map Unit 911

Endoaquolls, frequently flooded for long periods, and similar soils

Composition: 12 percent

Slope: 0 to 8 percent

Geomorphic position: Seeps and channels in meadows in volcanic and metamorphic mountains

Hydric soil status: Hydric

Bonepile taxadjunct, duripan substratum, and similar soils

Composition: 5 percent

Slope: 0 to 8 percent

Geomorphic position: Stream terraces in volcanic mountains

Hydric soil status: Not hydric

Endoaquolls, very gravelly substratum, and similar soils*Composition:* 3 percent*Slope:* 0 to 8 percent*Geomorphic position:* Meadows in volcanic and metamorphic mountains*Hydric soil status:* Hydric**Aquic Xerofluvents and similar soils***Composition:* 3 percent*Slope:* 0 to 4 percent*Geomorphic position:* Meadows in volcanic and metamorphic mountains*Hydric soil status:* Hydric**Xerofluvents and similar soils***Composition:* 2 percent*Slope:* 0 to 4 percent*Geomorphic position:* Channels in meadows in volcanic and metamorphic mountains*Hydric soil status:* Hydric**923—Powderhouse-McNair-Greenwell complex, 2 to 15 percent slopes*****Map Unit Setting****General location:* Eastern Butte County and southwestern Plumas County*Major uses:* Timber production, wildlife habitat, and watershed*Major land resource area:* 22A*Landscape:* Northern Sierra Nevada Mountains*Elevation:* 4,595 to 5,695 feet (1,402 to 1,737 meters)*Mean annual precipitation:* 75 to 80 inches (1,905 to 2,032 millimeters)*Mean annual air temperature:* 48 to 50 degrees F (9 to 10 degrees C)*Frost-free period:* 80 to 110 days***Map Unit Composition***

Powderhouse medial sandy loam—45 percent

McNair medial coarse sandy loam—25 percent

Greenwell medial sandy loam—20 percent

Minor components—10 percent

Characteristics of Powderhouse Medial Sandy Loam*Slope:* 2 to 15 percent*Geomorphic position:* The top of volcanic ridges*Parent material:* Mixed tephra and gravelly and cobbly residuum weathered from volcanic mudflow*Observed vegetation:* White fir, California red fir, incense cedar, sugar pine, ponderosa pine, huckleberry oak, greenleaf manzanita, whitethorn ceanothus, and Sierra chinquapin*Texture of the surface layer:* Slightly decomposed plant material*Percentage of the surface covered by rock fragments:* 0 to 10 percent coarse, subrounded gravel, 0 to 10 percent subrounded cobbles, 0 to 10 percent subrounded stones, 0 to 10 percent subrounded boulders*Depth to a restrictive feature (paralithic bedrock):* 20 to 40 inches*Shrink-swell potential:* Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 2.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material
 A1—2 to 4 inches; medial sandy loam
 A2—4 to 11 inches; medial sandy loam
 Bw—11 to 27 inches; very cobbly medial sandy loam
 C—27 to 36 inches; very gravelly medial coarse sandy loam
 Cr—36 to 82 inches; bedrock

Characteristics of McNair Medial Coarse Sandy Loam

Slope: 2 to 15 percent

Geomorphic position: The top of volcanic ridges

Parent material: Mixed tephra and gravelly residuum weathered from volcanic mudflow

Observed vegetation: White fir, California red fir, incense cedar, sugar pine, ponderosa pine, whitethorn ceanothus, greenleaf manzanita, huckleberry oak, and Sierra chinquapin

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 10 percent subrounded cobbles, 0 to 10 percent subrounded stones, 0 to 10 percent subrounded boulders

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 3.8 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very low

Interpretive groups

Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 3 inches; slightly decomposed plant material
 A1—3 to 6 inches; medial coarse sandy loam
 A2—6 to 16 inches; gravelly medial coarse sandy loam
 Bw1—16 to 25 inches; very gravelly medial sandy loam
 Bw2—25 to 33 inches; very gravelly medial sandy loam
 Bw3—33 to 48 inches; very gravelly medial sandy loam

BC—48 to 57 inches; extremely gravelly coarse sandy loam

Cr—57 to 88 inches; bedrock

Characteristics of Greenwell Medial Sandy Loam

Slope: 2 to 15 percent

Geomorphic position: The top of volcanic ridges

Parent material: Mixed tephra and gravelly residuum weathered from volcanic mudflow

Observed vegetation: White fir, California red fir, incense cedar, sugar pine, ponderosa pine, whitethorn ceanothus, greenleaf manzanita, huckleberry oak, and Sierra chinquapin

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, subrounded gravel, 0 to 5 percent subrounded cobbles, 0 to 5 percent subrounded stones, 0 to 5 percent subrounded boulders

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 3.6 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

Oe—2 to 3 inches; moderately decomposed plant material

A1—3 to 5 inches; medial sandy loam

A2—5 to 10 inches; medial sandy loam

Bw—10 to 18 inches; gravelly medial sandy loam

2BC1—18 to 23 inches; medial sandy loam

2BC2—23 to 32 inches; very gravelly medial sandy loam

2Cr—32 inches; bedrock

Minor Components in Map Unit 923

Rock outcrop

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: The top of volcanic ridges

Hydric soil status: Not hydric

Medial-skeletal soils that are more than 60 inches deep to bedrock

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: The top of volcanic ridges

Hydric soil status: Not hydric

At an elevation of less than 4,800 feet, soils with a mesic soil temperature regime

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: The top of volcanic ridges

Hydric soil status: Not hydric

Powderhouse very gravelly medial sandy loam and similar soils

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: The top of volcanic ridges

Hydric soil status: Not hydric

Lumpkin taxadjunct and similar soils

Composition: 2 percent

Slope: 2 to 15 percent

Geomorphic position: The top of volcanic ridges

Hydric soil status: Not hydric

924—Powderhouse-McNair-Greenwell complex, 15 to 30 percent slopes

Map Unit Setting

General location: Eastern Butte County and southwestern Plumas County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 4,595 to 5,695 feet (1,402 to 1,737 meters)

Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)

Mean annual air temperature: 48 to 50 degrees F (9 to 10 degrees C)

Frost-free period: 80 to 110 days

Map Unit Composition

Powderhouse medial sandy loam—45 percent

McNair medial coarse sandy loam—25 percent

Greenwell medial sandy loam—20 percent

Minor components—10 percent

Characteristics of Powderhouse Medial Sandy Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes on volcanic ridges

Parent material: Mixed tephra and gravelly and cobbly residuum and/or colluvium derived from volcanic mudflow

Observed vegetation: White fir, California red fir, incense cedar, sugar pine, ponderosa pine, whitethorn ceanothus, greenleaf manzanita, huckleberry oak, and Sierra chinquapin

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 10 percent subrounded cobbles, 0 to 10 percent subrounded stones, 0 to 10 percent subrounded boulders

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 2.3 inches)

Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material
 A1—2 to 4 inches; medial sandy loam
 A2—4 to 11 inches; medial sandy loam
 Bw—11 to 27 inches; very cobbly medial sandy loam
 C—27 to 36 inches; very gravelly medial coarse sandy loam
 Cr—36 to 82 inches; bedrock

Characteristics of McNair Medial Coarse Sandy Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes on volcanic ridges

Parent material: Mixed tephra and gravelly residuum and/or colluvium derived from volcanic mudflow

Observed vegetation: White fir, California red fir, incense cedar, sugar pine, ponderosa pine, whitethorn ceanothus, greenleaf manzanita, huckleberry oak, and Sierra chinquapin

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 10 percent subrounded cobbles, 0 to 10 percent subrounded stones, 0 to 10 percent subrounded boulders

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 3.8 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 3 inches; slightly decomposed plant material
 A1—3 to 6 inches; medial coarse sandy loam
 A2—6 to 16 inches; gravelly medial coarse sandy loam
 Bw1—16 to 25 inches; very gravelly medial sandy loam
 Bw2—25 to 33 inches; very gravelly medial sandy loam
 Bw3—33 to 48 inches; very gravelly medial sandy loam
 BC—48 to 57 inches; extremely gravelly coarse sandy loam
 Cr—57 to 88 inches; bedrock

Characteristics of Greenwell Medial Sandy Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes on volcanic ridges

Parent material: Mixed tephra and gravelly residuum and/or colluvium derived from volcanic mudflow

Observed vegetation: White fir, California red fir, incense cedar, sugar pine, ponderosa pine, whitethorn ceanothus, greenleaf manzanita, huckleberry oak, and Sierra chinquapin

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, subrounded gravel, 0 to 5 percent subrounded cobbles, 0 to 5 percent subrounded stones, 0 to 5 percent subrounded boulders

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 3.6 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

Oe—2 to 3 inches; moderately decomposed plant material

A1—3 to 5 inches; medial sandy loam

A2—5 to 10 inches; medial sandy loam

Bw—10 to 18 inches; gravelly medial sandy loam

2BC1—18 to 23 inches; medial sandy loam

2BC2—23 to 32 inches; very gravelly medial sandy loam

2Cr—32 inches; bedrock

Minor Components in Map Unit 924

Medial-skeletal soils that have 18 to 27 percent clay

Composition: 3 percent

Slope: 15 to 30 percent

Geomorphic position: Drainageways and riparian areas on side slopes on volcanic ridges

Hydric soil status: Not hydric

Medial-skeletal soils that are more than 60 inches deep to bedrock

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on volcanic ridges

Hydric soil status: Not hydric

Medial soils that have more than 18 percent clay and are on north-facing slopes

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on volcanic ridges

Hydric soil status: Not hydric

At an elevation of less than 4,800 feet, soils with a mesic soil temperature regime

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on volcanic ridges

Hydric soil status: Not hydric

Lumpkin taxadjunct and similar soils

Composition: 1 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on volcanic ridges

Hydric soil status: Not hydric

925—Powderhouse-McNair-Greenwell complex, 30 to 50 percent slopes

Map Unit Setting

General location: Eastern Butte County and southwestern Plumas County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 4,595 to 5,695 feet (1,402 to 1,737 meters)

Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)

Mean annual air temperature: 48 to 50 degrees F (9 to 10 degrees C)

Frost-free period: 80 to 110 days

Map Unit Composition

Powderhouse medial sandy loam—45 percent

McNair medial coarse sandy loam—25 percent

Greenwell medial sandy loam—20 percent

Minor components—10 percent

Characteristics of Powderhouse Medial Sandy Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes on volcanic ridges

Parent material: Mixed tephra and gravelly and cobbly residuum and/or colluvium derived from volcanic mudflow

Observed vegetation: White fir, California red fir, incense cedar, sugar pine, ponderosa pine, whitethorn ceanothus, greenleaf manzanita, huckleberry oak, and Sierra chinquapin

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 10 percent subrounded cobbles, 0 to 10 percent subrounded stones, 0 to 10 percent subrounded boulders

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 2.3 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A1—2 to 4 inches; medial sandy loam

A2—4 to 11 inches; medial sandy loam

Bw—11 to 27 inches; very cobbly medial sandy loam

C—27 to 36 inches; very gravelly medial coarse sandy loam

Cr—36 to 82 inches; bedrock

Characteristics of McNair Medial Coarse Sandy Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes on volcanic ridges

Parent material: Mixed tephra and gravelly residuum and/or colluvium derived from volcanic mudflow

Observed vegetation: White fir, California red fir, incense cedar, sugar pine, ponderosa pine, whitethorn ceanothus, greenleaf manzanita, huckleberry oak, and Sierra chinquapin

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 10 percent subrounded cobbles, 0 to 10 percent subrounded stones, 0 to 10 percent subrounded boulders

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 3.8 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 3 inches; slightly decomposed plant material

A1—3 to 6 inches; medial coarse sandy loam

A2—6 to 16 inches; gravelly medial coarse sandy loam

Bw1—16 to 25 inches; very gravelly medial sandy loam

Bw2—25 to 33 inches; very gravelly medial sandy loam

Bw3—33 to 48 inches; very gravelly medial sandy loam

BC—48 to 57 inches; extremely gravelly coarse sandy loam

Cr—57 to 88 inches; bedrock

Characteristics of Greenwell Medial Sandy Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes on volcanic ridges

Parent material: Mixed tephra and gravelly residuum and/or colluvium derived from volcanic mudflow

Observed vegetation: White fir, California red fir, incense cedar, sugar pine, ponderosa pine, whitethorn ceanothus, greenleaf manzanita, huckleberry oak, and Sierra chinquapin

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, subrounded gravel, 0 to 5 percent subrounded cobbles, 0 to 5 percent subrounded stones, 0 to 5 percent subrounded boulders

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 3.6 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

Oe—2 to 3 inches; moderately decomposed plant material

A1—3 to 5 inches; medial sandy loam

A2—5 to 10 inches; medial sandy loam

Bw—10 to 18 inches; gravelly medial sandy loam

2BC1—18 to 23 inches; medial sandy loam

2BC2—23 to 32 inches; very gravelly medial sandy loam

2Cr—32 inches; bedrock

Minor Components in Map Unit 925

Medial-skeletal soils that are more than 60 inches deep to bedrock

Composition: 4 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on volcanic ridges

Hydric soil status: Not hydric

Medial soils that have more than 18 percent clay and are on north-facing slopes

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on volcanic ridges

Hydric soil status: Not hydric

Soils that have slopes of more than 50 percent

Composition: 2 percent

Slope: 50 to 70 percent

Geomorphic position: Side slopes on volcanic ridges

Hydric soil status: Not hydric

At an elevation of less than 4,800 feet, soils with a mesic soil temperature regime

Composition: 1 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on volcanic ridges

Hydric soil status: Not hydric

Lumpkin taxadjunct and similar soils

Composition: 1 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on volcanic ridges

Hydric soil status: Not hydric

930—Shakeridge-Timberisland complex, 0 to 15 percent slopes

Map Unit Setting

General location: Eastern Butte County and southwestern Plumas County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 3,595 to 5,495 feet (1,097 to 1,676 meters)

Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)

Mean annual air temperature: 50 to 52 degrees F (10 to 11 degrees C)

Frost-free period: 110 to 140 days

Map Unit Composition

Shakeridge gravelly medial coarse sandy loam—50 percent

Timberisland very gravelly medial sandy loam—40 percent

Minor components—10 percent

Characteristics of Shakeridge Gravelly Medial Coarse Sandy Loam

Slope: 0 to 15 percent

Geomorphic position: Benches and the top of basalt ridges

Parent material: Mixed tephra and gravelly residuum and/or colluvium derived from basalt

Observed vegetation: Ponderosa pine, incense cedar, California black oak, white fir, sugar pine, deerbrush, huckleberry oak, and greenleaf manzanita

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 10 to 20 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 5 percent subangular stones

Depth to a restrictive feature (lithic bedrock): 60 to 100 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 2.4 inches)

Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material
 A1—2 to 4 inches; gravelly medial coarse sandy loam
 A2—4 to 7 inches; gravelly medial coarse sandy loam
 Bw1—7 to 19 inches; extremely gravelly medial coarse sandy loam
 Bw2—19 to 25 inches; extremely gravelly medial coarse sandy loam
 Bw3—25 to 36 inches; very gravelly medial coarse sandy loam
 Bw4—36 to 55 inches; extremely gravelly medial coarse sandy loam
 Bw5—55 to 71 inches; extremely gravelly medial coarse sandy loam
 Bw6—71 to 87 inches; extremely gravelly coarse sandy loam

Characteristics of Timberisland Very Gravelly Medial Sandy Loam

Slope: 0 to 15 percent

Geomorphic position: Benches and the top of basalt ridges

Parent material: Mixed tephra and gravelly and cobbly residuum and/or colluvium derived from basalt

Observed vegetation: Ponderosa pine, incense cedar, California black oak, white fir, sugar pine, deerbrush, huckleberry oak, and greenleaf manzanita

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 40 percent coarse, subangular gravel, 0 to 25 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 40 to 60 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 2.0 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material
 Oe—2 to 3 inches; moderately decomposed plant material
 A1—3 to 6 inches; very gravelly medial sandy loam
 A2—6 to 14 inches; very gravelly medial sandy loam
 Bw1—14 to 25 inches; very gravelly medial sandy loam
 Bw2—25 to 35 inches; extremely cobbly medial sandy loam
 Bw3—35 to 48 inches; extremely cobbly medial sandy loam
 2R—48 inches; bedrock

Minor Components in Map Unit 930

Lavatop and similar soils

Composition: 2 percent

Slope: 0 to 15 percent

Geomorphic position: Benches and the top of basalt ridges

Hydric soil status: Not hydric

Mudwash and similar soils

Composition: 2 percent

Slope: 0 to 5 percent

Geomorphic position: Benches and the top of basalt ridges

Hydric soil status: Not hydric

Lumpkin and similar soils

Composition: 2 percent

Slope: 0 to 15 percent

Geomorphic position: Benches and the top of basalt ridges

Hydric soil status: Not hydric

Escarpments

Composition: 2 percent

Slope: 15 to 70 percent

Geomorphic position: Benches and the top of basalt ridges

Hydric soil status: Not hydric

Lava flows

Composition: 1 percent

Slope: 0 to 15 percent

Geomorphic position: Benches and the top of basalt ridges

Hydric soil status: Not hydric

Medial soils that are more than 60 inches deep to lithic bedrock

Composition: 1 percent

Slope: 0 to 15 percent

Geomorphic position: Benches and the top of basalt ridges

Hydric soil status: Not hydric

931—Shakeridge-Mudwash-Timberisland complex, 15 to 30 percent slopes

Map Unit Setting

General location: Eastern Butte County and southwestern Plumas County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 3,595 to 5,495 feet (1,097 to 1,676 meters)

Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)

Mean annual air temperature: 45 to 52 degrees F (7 to 11 degrees C)

Frost-free period: 110 to 140 days

Map Unit Composition

Shakeridge gravelly medial coarse sandy loam—40 percent

Mudwash gravelly medial sandy loam—25 percent

Timberisland very gravelly medial sandy loam—15 percent

Minor components—20 percent

Characteristics of Shakeridge Gravelly Medial Coarse Sandy Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes on basalt ridges

Parent material: Mixed tephra and gravelly residuum and/or colluvium derived from basalt

Observed vegetation: Ponderosa pine, incense cedar, California black oak, white fir, sugar pine, deerbrush, huckleberry oak, and greenleaf manzanita

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 10 to 20 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 5 percent subangular stones

Depth to a restrictive feature (lithic bedrock): 60 to 100 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 2.4 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A1—2 to 4 inches; gravelly medial coarse sandy loam

A2—4 to 7 inches; gravelly medial coarse sandy loam

Bw1—7 to 19 inches; extremely gravelly medial coarse sandy loam

Bw2—19 to 25 inches; extremely gravelly medial coarse sandy loam

Bw3—25 to 36 inches; very gravelly medial coarse sandy loam

Bw4—36 to 55 inches; extremely gravelly medial coarse sandy loam

Bw5—55 to 71 inches; extremely gravelly medial coarse sandy loam

Bw6—71 to 87 inches; extremely gravelly coarse sandy loam

Characteristics of Mudwash Gravelly Medial Sandy Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes on basalt ridges

Parent material: Mixed tephra and gravelly residuum and/or colluvium derived from basalt

Observed vegetation: Ponderosa pine, incense cedar, California black oak, white fir, sugar pine, deerbrush, huckleberry oak, and greenleaf manzanita

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 20 percent coarse, subangular gravel, 0 to 25 percent subangular cobbles

Depth to a restrictive feature (paralithic bedrock): 60 to 80 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed
Available water capacity: Moderate (about 5.5 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
 Oa—1 to 4 inches; moderately decomposed plant material
 A1—4 to 8 inches; gravelly medial sandy loam
 A2—8 to 13 inches; gravelly medial sandy loam
 Bw—13 to 26 inches; gravelly medial sandy loam
 2Bt1—26 to 35 inches; gravelly loam
 2Bt2—35 to 52 inches; gravelly loam
 2BCt—52 to 72 inches; extremely gravelly loam
 2Cr—72 to 89 inches; bedrock

Characteristics of Timberisland Very Gravelly Medial Sandy Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on basalt ridges
Parent material: Mixed tephra and gravelly and cobbly residuum and/or colluvium derived from basalt
Observed vegetation: Ponderosa pine, incense cedar, California black oak, white fir, sugar pine, deerbrush, huckleberry oak, and greenleaf manzanita
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 40 percent coarse, subangular gravel, 0 to 25 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)
Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 2.0 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material
 Oe—2 to 3 inches; moderately decomposed plant material
 A1—3 to 6 inches; very gravelly medial sandy loam
 A2—6 to 14 inches; very gravelly medial sandy loam

Bw1—14 to 25 inches; very gravelly medial sandy loam
Bw2—25 to 35 inches; extremely cobbly medial sandy loam
Bw3—35 to 48 inches; extremely cobbly medial sandy loam
2R—48 inches; bedrock

Minor Components in Map Unit 931

At an elevation of more than 4,800 feet, soils with a frigid soil temperature regime

Composition: 6 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on basalt ridges
Hydric soil status: Not hydric

Lavatop and similar soils

Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on basalt ridges
Hydric soil status: Not hydric

Soils that have slopes of more than 30 percent

Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on basalt ridges
Hydric soil status: Not hydric

Soils that have slopes of less than 15 percent

Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on basalt ridges
Hydric soil status: Not hydric

Soils that have more than 27 percent clay

Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on basalt ridges
Hydric soil status: Not hydric

Lava flows

Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on basalt ridges
Hydric soil status: Not hydric

Lumpkin and similar soils

Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on basalt ridges
Hydric soil status: Not hydric

Springs and riparian areas

Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on basalt ridges
Hydric soil status: Hydric

932—Shakeridge-Mudwash complex, 30 to 50 percent slopes

Map Unit Setting

General location: Eastern Butte County and southwestern Plumas County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 3,595 to 5,495 feet (1,097 to 1,676 meters)

Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)

Mean annual air temperature: 46 to 52 degrees F (8 to 11 degrees C)

Frost-free period: 110 to 140 days

Map Unit Composition

Shakeridge gravelly medial coarse sandy loam—50 percent

Mudwash gravelly medial sandy loam—35 percent

Minor components—15 percent

Characteristics of Shakeridge Gravelly Medial Coarse Sandy Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes on basalt ridges

Parent material: Mixed tephra and gravelly residuum and/or colluvium derived from basalt

Observed vegetation: Ponderosa pine, incense cedar, California black oak, white fir, sugar pine, deerbrush, and huckleberry oak

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 10 to 20 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 5 percent subangular stones

Depth to a restrictive feature (lithic bedrock): 60 to 100 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 2.4 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A1—2 to 4 inches; gravelly medial coarse sandy loam

A2—4 to 7 inches; gravelly medial coarse sandy loam

Bw1—7 to 19 inches; extremely gravelly medial coarse sandy loam

Bw2—19 to 25 inches; extremely gravelly medial coarse sandy loam

Bw3—25 to 36 inches; very gravelly medial coarse sandy loam

Bw4—36 to 55 inches; extremely gravelly medial coarse sandy loam

Bw5—55 to 71 inches; extremely gravelly medial coarse sandy loam

Bw6—71 to 87 inches; extremely gravelly coarse sandy loam

Characteristics of Mudwash Gravelly Medial Sandy Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes on basalt ridges

Parent material: Mixed tephra and gravelly residuum and/or colluvium derived from basalt

Observed vegetation: Ponderosa pine, incense cedar, California black oak, white fir, sugar pine, deerbrush, and huckleberry oak

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 20 percent coarse, subangular gravel, 0 to 25 percent subangular cobbles

Depth to a restrictive feature (paralithic bedrock): 60 to 80 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 5.5 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

Oa—1 to 4 inches; moderately decomposed plant material

A1—4 to 8 inches; gravelly medial sandy loam

A2—8 to 13 inches; gravelly medial sandy loam

Bw—13 to 26 inches; gravelly medial sandy loam

2Bt1—26 to 35 inches; gravelly loam

2Bt2—35 to 52 inches; gravelly loam

2BCt—52 to 72 inches; extremely gravelly loam

2Cr—72 to 89 inches; bedrock

Minor Components in Map Unit 932

At an elevation of more than 4,800 feet, soils with a frigid soil temperature regime

Composition: 5 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on basalt ridges

Hydric soil status: Not hydric

Lavatop and similar soils

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on basalt ridges

Hydric soil status: Not hydric

Talus*Composition:* 2 percent*Slope:* 30 to 50 percent*Geomorphic position:* Backslopes on basalt ridges*Hydric soil status:* Not hydric**Escarpments***Composition:* 2 percent*Slope:* 50 to 100 percent*Geomorphic position:* Side slopes on basalt ridges*Hydric soil status:* Not hydric**Timberland and similar soils***Composition:* 2 percent*Slope:* 30 to 50 percent*Geomorphic position:* Side slopes on basalt ridges*Hydric soil status:* Not hydric**Soils that have quartz diorite in the substratum***Composition:* 2 percent*Slope:* 30 to 50 percent*Geomorphic position:* Side slopes on basalt ridges*Hydric soil status:* Not hydric**933—Shakeridge gravelly medial coarse sandy loam, 50 to 70 percent slopes*****Map Unit Setting****General location:* Eastern Butte County and southwestern Plumas County*Major uses:* Timber production, wildlife habitat, and watershed*Major land resource area:* 22A*Landscape:* Northern Sierra Nevada Mountains*Elevation:* 3,595 to 5,495 feet (1,097 to 1,676 meters)*Mean annual precipitation:* 75 to 80 inches (1,905 to 2,032 millimeters)*Mean annual air temperature:* 50 to 52 degrees F (10 to 11 degrees C)*Frost-free period:* 110 to 140 days***Map Unit Composition***

Shakeridge gravelly medial coarse sandy loam—80 percent

Minor components—20 percent

Characteristics of Shakeridge Gravelly Medial Coarse Sandy Loam*Slope:* 50 to 70 percent*Geomorphic position:* Backslopes on basalt ridges*Parent material:* Mixed tephra and gravelly residuum and/or colluvium derived from basalt*Observed vegetation:* Ponderosa pine, incense cedar, California black oak, white fir, sugar pine, deerbrush, and huckleberry oak*Texture of the surface layer:* Slightly decomposed plant material*Percentage of the surface covered by rock fragments:* 10 to 20 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 5 percent subangular stones

Depth to a restrictive feature (lithic bedrock): 60 to 100 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 2.4 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A1—2 to 4 inches; gravelly medial coarse sandy loam

A2—4 to 7 inches; gravelly medial coarse sandy loam

Bw1—7 to 19 inches; extremely gravelly medial coarse sandy loam

Bw2—19 to 25 inches; extremely gravelly medial coarse sandy loam

Bw3—25 to 36 inches; very gravelly medial coarse sandy loam

Bw4—36 to 55 inches; extremely gravelly medial coarse sandy loam

Bw5—55 to 71 inches; extremely gravelly medial coarse sandy loam

Bw6—71 to 87 inches; extremely gravelly coarse sandy loam

Minor Components in Map Unit 933

Timberisland and similar soils

Composition: 9 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on basalt ridges

Hydric soil status: Not hydric

Mudwash and similar soils

Composition: 4 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on basalt ridges

Hydric soil status: Not hydric

Lavatop and similar soils

Composition: 3 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on basalt ridges

Hydric soil status: Not hydric

Medial soils that are more than 60 inches deep to lithic bedrock

Composition: 2 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on basalt ridges

Hydric soil status: Not hydric

Soils that are more than 40 inches deep to quartz diorite bedrock

Composition: 2 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on basalt ridges

Hydric soil status: Not hydric

934—Mudwash gravelly medial sandy loam, 0 to 15 percent slopes

Map Unit Setting

General location: Southern Butte County and southwestern Plumas County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 3,595 to 5,200 feet (1,097 to 1,585 meters)

Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)

Mean annual air temperature: 45 to 52 degrees F (7 to 11 degrees C)

Frost-free period: 110 to 140 days

Map Unit Composition

Mudwash gravelly medial sandy loam—80 percent

Minor components—20 percent

Characteristics of Mudwash Gravelly Medial Sandy Loam

Slope: 0 to 15 percent

Geomorphic position: The top of basalt ridges

Parent material: Mixed tephra and gravelly residuum and/or colluvium derived from basalt

Observed vegetation: Ponderosa pine, incense cedar, white fir, sugar pine, whitethorn ceanothus, deerbrush, and manzanita

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 20 percent coarse, subangular gravel, 0 to 25 percent subangular cobbles

Depth to a restrictive feature (paralithic bedrock): 60 to 80 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 5.5 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

Oa—1 to 4 inches; moderately decomposed plant material

A1—4 to 8 inches; gravelly medial sandy loam

A2—8 to 13 inches; gravelly medial sandy loam

Bw—13 to 26 inches; gravelly medial sandy loam

2Bt1—26 to 35 inches; gravelly loam

2Bt2—35 to 52 inches; gravelly loam

2BCt—52 to 72 inches; extremely gravelly loam

2Cr—72 to 89 inches; bedrock

Minor Components in Map Unit 934

Shakeridge and similar soils

Composition: 6 percent

Slope: 0 to 15 percent

Geomorphic position: The top of basalt ridges

Hydric soil status: Not hydric

At an elevation of more than 4,800 feet, soils with a frigid soil temperature regime

Composition: 6 percent

Slope: 0 to 15 percent

Geomorphic position: The top of basalt ridges

Hydric soil status: Not hydric

Springs and riparian areas

Composition: 4 percent

Slope: 0 to 15 percent

Geomorphic position: The top of basalt ridges

Hydric soil status: Hydric

Soils that are 40 to 60 inches deep to paralithic bedrock

Composition: 4 percent

Slope: 0 to 15 percent

Geomorphic position: The top of basalt ridges

Hydric soil status: Not hydric

939—Fluvaquentic Humaquepts, 0 to 15 percent slopes

Map Unit Setting

General location: Southwestern Plumas County

Major uses: Wildlife habitat and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 3,995 to 5,400 feet (1,219 to 1,646 meters)

Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)

Mean annual air temperature: 50 to 54 degrees F (10 to 12 degrees C)

Frost-free period: 110 to 150 days

Map Unit Composition

Fluvaquentic Humaquepts very fine sandy loam—85 percent

Minor components—15 percent

Characteristics of Fluvaquentic Humaquepts Very Fine Sandy Loam

Slope: 0 to 15 percent

Geomorphic position: Meadows in granitic mountains

Parent material: Fine-loamy alluvium derived from quartz diorite

Observed vegetation: Sedges, rushes, annual grasses and forbs, and mountain alder

Texture of the surface layer: Very fine sandy loam

Percentage of the surface covered by rock fragments: 0 to 5 percent rounded gravel

Restrictive feature: None identified

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Rare

Annual ponding frequency: None

Depth to a water table (zone of saturation): 0 to 60 inches

Available water capacity: High (about 9.4 inches)

Natural drainage class: Poorly drained

Surface runoff (bare conditions): Very high

Interpretive groups

Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2

Hydric soil status: Hydric

Hydrologic soil group: D

Typical profile

A1—0 to 7 inches; very fine sandy loam

A2—7 to 15 inches; very fine sandy loam

Bw1—15 to 22 inches; loam

Bw2—22 to 29 inches; loam

Bw3—29 to 36 inches; loam

2Bw—36 to 45 inches; gravelly clay loam

2BC—45 to 60 inches; gravelly loam

Minor Components in Map Unit 939

At an elevation of more than 4,800 feet, soils with a frigid soil temperature regime

Composition: 10 percent

Slope: 0 to 15 percent

Geomorphic position: Meadows in metamorphic mountains

Hydric soil status: Hydric

Soils that are partially drained

Composition: 5 percent

Slope: 0 to 2 percent

Geomorphic position: Meadows in granitic and metamorphic mountains

Hydric soil status: Not hydric

940—Dejonah-Stagpoint complex, 2 to 15 percent slopes

Map Unit Setting

General location: Eastern Butte County and western Plumas County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 4,500 to 5,895 feet (1,372 to 1,798 meters)

Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)

Mean annual air temperature: 48 to 50 degrees F (9 to 10 degrees C)

Frost-free period: 80 to 110 days

Map Unit Composition

Dejonah gravelly loam—50 percent

Stagpoint loam—30 percent

Minor components—20 percent

Characteristics of Dejonah Gravelly Loam

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and benches on metamorphic mountains

Parent material: Fine-loamy residuum weathered from metamorphic rocks

Observed vegetation: White fir, California red fir, sugar pine, incense cedar, ponderosa pine, Sierra chinquapin, whitethorn ceanothus, and greenleaf manzanita

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles

Depth to a restrictive feature (paralithic bedrock): 60 to 80 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 8.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 4 inches; gravelly loam

Bt1—4 to 10 inches; loam

2Bt2—10 to 16 inches; loam

2Bt3—16 to 28 inches; loam

2Bt4—28 to 37 inches; loam

2BC1—37 to 53 inches; sandy loam

2BC2—53 to 60 inches; loam

Characteristics of Stagpoint Loam

Slope: 2 to 15 percent

Geomorphic position: Ridgetops and benches on metamorphic mountains

Parent material: Loamy, cobbly and gravelly residuum weathered from metamorphic rocks

Observed vegetation: White fir, California red fir, sugar pine, incense cedar, ponderosa pine, Sierra chinquapin, whitethorn ceanothus, and greenleaf manzanita

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 5 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 60 to 100 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.0 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Low

*Interpretive groups**Land capability, irrigated: 3e-1**Land capability, nonirrigated: 3e-1**Hydric soil status: Not hydric**Hydrologic soil group: B**Typical profile*

Oi—0 to 0.5 inch; slightly decomposed plant material

A—0.5 inch to 4 inches; loam

Bt1—4 to 10 inches; gravelly loam

Bt2—10 to 17 inches; very gravelly loam

2Bt3—17 to 23 inches; very gravelly loam

2Bt4—23 to 34 inches; extremely cobbly loam

2BCt1—34 to 49 inches; extremely cobbly loam

2BCt2—49 to 64 inches; extremely stony loam

2C—64 to 86 inches; very stony loam

Minor Components in Map Unit 940**At an elevation of less than 4,800 feet, soils with a mesic soil temperature regime***Composition: 9 percent**Slope: 2 to 15 percent**Geomorphic position: Ridgetops and benches on metamorphic mountains**Hydric soil status: Not hydric***Haploxerands and similar soils***Composition: 3 percent**Slope: 2 to 15 percent**Geomorphic position: Ridgetops and benches on metamorphic mountains**Hydric soil status: Not hydric***Soils that have less than 18 percent clay***Composition: 2 percent**Slope: 2 to 15 percent**Geomorphic position: Ridgetops and benches on metamorphic mountains**Hydric soil status: Not hydric***Loamy-skeletal soils that are 20 to 40 inches deep to bedrock***Composition: 2 percent**Slope: 2 to 15 percent**Geomorphic position: Ridgetops and benches on metamorphic mountains**Hydric soil status: Not hydric***Soils that are 20 to 40 inches deep to paralithic bedrock***Composition: 2 percent**Slope: 2 to 15 percent**Geomorphic position: Ridgetops and benches on metamorphic mountains**Hydric soil status: Not hydric***Soils that have more than 35 percent clay in the subsoil***Composition: 2 percent**Slope: 2 to 15 percent**Geomorphic position: Ridgetops and benches on metamorphic mountains**Hydric soil status: Not hydric*

941—Dejonah-Stagpoint complex, 15 to 30 percent slopes

Map Unit Setting

General location: Eastern Butte County and western Plumas County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 4,500 to 5,895 feet (1,372 to 1,798 meters)

Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)

Mean annual air temperature: 48 to 50 degrees F (9 to 10 degrees C)

Frost-free period: 80 to 110 days

Map Unit Composition

Dejonah gravelly loam—50 percent

Stagpoint loam—30 percent

Minor components—20 percent

Characteristics of Dejonah Gravelly Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes, ridgetops, and benches on metamorphic mountains

Parent material: Fine-loamy colluvium and/or residuum weathered from metamorphic rocks

Observed vegetation: White fir, California red fir, sugar pine, incense cedar, ponderosa pine, Sierra chinquapin, whitethorn ceanothus, and greenleaf manzanita

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles

Depth to a restrictive feature (paralithic bedrock): 60 to 80 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 8.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 4 inches; gravelly loam

Bt1—4 to 10 inches; loam

2Bt2—10 to 16 inches; loam

2Bt3—16 to 28 inches; loam

2Bt4—28 to 37 inches; loam

2BC1—37 to 53 inches; sandy loam

2BC2—53 to 60 inches; loam

Characteristics of Stagpoint Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes, ridgetops, and benches on metamorphic mountains

Parent material: Loamy, cobbly and gravelly colluvium and/or residuum weathered from metamorphic rocks

Observed vegetation: White fir, California red fir, sugar pine, incense cedar, ponderosa pine, Sierra chinquapin, whitethorn ceanothus, and greenleaf manzanita

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 5 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 60 to 100 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.0 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material

A—0.5 inch to 4 inches; loam

Bt1—4 to 10 inches; gravelly loam

Bt2—10 to 17 inches; very gravelly loam

2Bt3—17 to 23 inches; very gravelly loam

2Bt4—23 to 34 inches; extremely cobbly loam

2BCt1—34 to 49 inches; extremely cobbly loam

2BCt2—49 to 64 inches; extremely stony loam

2C—64 to 86 inches; very stony loam

Minor Components in Map Unit 941

At an elevation of less than 4,800 feet, soils with a mesic soil temperature regime

Composition: 9 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes, ridgetops, and benches on metamorphic mountains

Hydric soil status: Not hydric

Loamy-skeletal alluvial soils that have a high content of quartz

Composition: 4 percent

Slope: 15 to 30 percent

Geomorphic position: Draws on metamorphic mountains

Hydric soil status: Not hydric

Soils that have a high content of silt and overlie metatuff

Composition: 3 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes, ridgetops, and benches on metamorphic mountains
Hydric soil status: Not hydric

Soils that have less than 18 percent clay

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes, ridgetops, and benches on metamorphic mountains

Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to paralithic bedrock

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes, ridgetops, and benches on metamorphic mountains

Hydric soil status: Not hydric

942—Stagpoint-Dejonah complex, 30 to 50 percent slopes

Map Unit Setting

General location: Eastern Butte County and western Plumas County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 4,500 to 5,895 feet (1,372 to 1,798 meters)

Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)

Mean annual air temperature: 48 to 50 degrees F (9 to 10 degrees C)

Frost-free period: 80 to 110 days

Map Unit Composition

Stagpoint loam—50 percent

Dejonah gravelly loam—30 percent

Minor components—20 percent

Characteristics of Stagpoint Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes on metamorphic mountains

Parent material: Loamy, cobbly and gravelly colluvium and/or residuum weathered from metamorphic rocks

Observed vegetation: White fir, California red fir, sugar pine, incense cedar, ponderosa pine, Sierra chinquapin, whitethorn ceanothus, and greenleaf manzanita

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 5 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 60 to 100 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.0 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

*Interpretive groups**Land capability, irrigated:* 6e-1*Land capability, nonirrigated:* 6e-1*Hydric soil status:* Not hydric*Hydrologic soil group:* B*Typical profile*

Oi—0 to 0.5 inch; slightly decomposed plant material

A—0.5 inch to 4 inches; loam

Bt1—4 to 10 inches; gravelly loam

Bt2—10 to 17 inches; very gravelly loam

2Bt3—17 to 23 inches; very gravelly loam

2Bt4—23 to 34 inches; extremely cobbly loam

2BCt1—34 to 49 inches; extremely cobbly loam

2BCt2—49 to 64 inches; extremely stony loam

2C—64 to 86 inches; very stony loam

Characteristics of Dejonah Gravelly Loam*Slope:* 30 to 50 percent*Geomorphic position:* Side slopes on metamorphic mountains*Parent material:* Fine-loamy colluvium and/or residuum weathered from metamorphic rocks*Observed vegetation:* White fir, California red fir, sugar pine, incense cedar, ponderosa pine, Sierra chinquapin, whitethorn ceanothus, and greenleaf manzanita*Texture of the surface layer:* Slightly decomposed plant material*Percentage of the surface covered by rock fragments:* 0 to 10 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles*Depth to a restrictive feature (paralithic bedrock):* 60 to 80 inches*Shrink-swell potential:* Low (LEP of less than 3)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* None*Annual ponding frequency:* None*Water table (zone of saturation):* None observed*Available water capacity:* High (about 8.9 inches)*Natural drainage class:* Well drained*Surface runoff (bare conditions):* Medium*Interpretive groups**Land capability, irrigated:* 6e-1*Land capability, nonirrigated:* 6e-1*Hydric soil status:* Not hydric*Hydrologic soil group:* B*Typical profile*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 4 inches; gravelly loam

Bt1—4 to 10 inches; loam

2Bt2—10 to 16 inches; loam

2Bt3—16 to 28 inches; loam

2Bt4—28 to 37 inches; loam

2BC1—37 to 53 inches; sandy loam

2BC2—53 to 60 inches; loam

Minor Components in Map Unit 942

At an elevation of less than 4,800 feet, soils with a mesic soil temperature regime

Composition: 9 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on metamorphic mountains

Hydric soil status: Not hydric

Soils that have more than 35 percent clay in the subsoil

Composition: 5 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on metamorphic mountains

Hydric soil status: Not hydric

Soils that have less than 18 percent clay

Composition: 4 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on metamorphic mountains

Hydric soil status: Not hydric

Soils that are underlain by metagabbro bedrock (paralithic)

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on metamorphic mountains

Hydric soil status: Not hydric

948—Stagpoint-Dejonah complex, 50 to 70 percent slopes

Map Unit Setting

General location: Southwestern Plumas County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 4,500 to 5,895 feet (1,372 to 1,798 meters)

Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)

Mean annual air temperature: 48 to 50 degrees F (9 to 10 degrees C)

Frost-free period: 80 to 110 days

Map Unit Composition

Stagpoint loam—55 percent

Dejonah gravelly loam—35 percent

Minor components—10 percent

Characteristics of Stagpoint Loam

Slope: 50 to 70 percent

Geomorphic position: Backslopes on metamorphic mountains

Parent material: Loamy, cobbly and gravelly colluvium and/or residuum weathered from metamorphic rocks

Observed vegetation: White fir, California red fir, sugar pine, incense cedar, ponderosa pine, Sierra chinquapin, whitethorn ceanothus, and greenleaf manzanita

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 5 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 60 to 100 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Low (about 4.0 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material

A—0.5 inch to 4 inches; loam

Bt1—4 to 10 inches; gravelly loam

Bt2—10 to 17 inches; very gravelly loam

2Bt3—17 to 23 inches; very gravelly loam

2Bt4—23 to 34 inches; extremely cobbly loam

2BCt1—34 to 49 inches; extremely cobbly loam

2BCt2—49 to 64 inches; extremely stony loam

2C—64 to 86 inches; very stony loam

Characteristics of Dejonah Gravelly Loam

Slope: 50 to 70 percent

Geomorphic position: Backslopes on metamorphic mountains

Parent material: Fine-loamy colluvium and/or residuum weathered from metamorphic rocks

Observed vegetation: White fir, California red fir, sugar pine, incense cedar, ponderosa pine, Sierra chinquapin, whitethorn ceanothus, and greenleaf manzanita

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles

Depth to a restrictive feature (paralithic bedrock): 60 to 80 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 8.9 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 4 inches; gravelly loam
 Bt1—4 to 10 inches; loam
 2Bt2—10 to 16 inches; loam
 2Bt3—16 to 28 inches; loam
 2Bt4—28 to 37 inches; loam
 2BC1—37 to 53 inches; sandy loam
 2BC2—53 to 60 inches; loam

Minor Components in Map Unit 948

At an elevation of less than 4,800 feet, soils with a mesic soil temperature regime

Composition: 9 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on metamorphic mountains

Hydric soil status: Not hydric

Soils that have less than 18 percent clay

Composition: 1 percent

Slope: 50 to 70 percent

Geomorphic position: Backslopes on metamorphic mountains

Hydric soil status: Not hydric

949—Rogerville taxadjunct, 30 to 50 percent slopes

Map Unit Setting

General location: Southwestern Plumas County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 4,795 to 5,600 feet (1,463 to 1,707 meters)

Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)

Mean annual air temperature: 45 to 50 degrees F (7 to 10 degrees C)

Frost-free period: 80 to 110 days

Map Unit Composition

Rogerville taxadjunct fine sandy loam—80 percent

Minor components—20 percent

Characteristics of Rogerville Taxadjunct Fine Sandy Loam

Slope: 30 to 50 percent

Geomorphic position: Side slopes on ultramafic mountains

Parent material: Fine-loamy colluvium and/or residuum weathered from ultramafic rocks

Observed vegetation: White fir, California red fir, incense cedar, Douglas-fir, sugar pine, whitethorn ceanothus, Sierra chinquapin, huckleberry oak, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent subrounded cobbles, 0 to 10 percent subrounded gravel

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches

Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.3 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 4 inches; fine sandy loam

Bw1—4 to 7 inches; gravelly sandy loam

Bw2—7 to 21 inches; very gravelly sandy loam

Bw3—21 to 26 inches; very gravelly loam

2Bt1—26 to 33 inches; gravelly silt loam

2Bt2—33 to 44 inches; gravelly silt loam

2Bt3—44 to 57 inches; gravelly silty clay loam

2Cr—57 inches; bedrock

Minor Components in Map Unit 949

Soils that are 10 to 20 inches deep to peridotite bedrock

Composition: 5 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on ultramafic mountains

Hydric soil status: Not hydric

Loamy-skeletal soils that are more than 60 inches deep to peridotite bedrock

Composition: 5 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on ultramafic mountains

Hydric soil status: Not hydric

Loamy-skeletal soils that are 40 to 60 inches deep to bedrock

Composition: 5 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on ultramafic mountains

Hydric soil status: Not hydric

Dejonah gravelly loam and similar soils

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on metavolcanic mountains

Hydric soil status: Not hydric

Stagpoint loam and similar soils

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on metavolcanic mountains

Hydric soil status: Not hydric

950—Lumpkin taxadjunct-Rock outcrop-Powderhouse complex, 0 to 15 percent slopes

Map Unit Setting

General location: Eastern Butte County and western Plumas County

Major uses: Wildlife habitat, watershed, and limited timber production

Major land resource area: 22A

Landscape: Northern Sierra Nevada and Southern Cascade Mountains

Elevation: 4,520 to 6,115 feet (1,378 to 1,865 meters)

Mean annual precipitation: 75 to 85 inches (1,905 to 2,159 millimeters)

Mean annual air temperature: 48 to 50 degrees F (9 to 10 degrees C)

Frost-free period: 80 to 110 days

Map Unit Composition

Lumpkin taxadjunct very gravelly medial very fine sandy loam—40 percent

Rock outcrop (olivine basalt, andesite, or mudflow)—25 percent

Powderhouse medial sandy loam—20 percent

Minor components—15 percent

Characteristics of Lumpkin Taxadjunct Very Gravelly Medial Very Fine Sandy Loam

Slope: 0 to 15 percent

Geomorphic position: The top and side slopes of volcanic nunataks and ridges

Parent material: Mixed tephra and cobbly and gravelly residuum weathered from volcanic rocks

Observed vegetation: Scattered ponderosa pine, incense cedar, California red fir, white fir, California black oak, whitethorn ceanothus, greenleaf manzanita, buckwheat, and annual grasses and forbs

Texture of the surface layer: Very gravelly medial very fine sandy loam

Percentage of the surface covered by rock fragments: 15 to 30 percent subrounded cobbles, 50 to 70 percent subrounded gravel, 0 to 20 percent subrounded stones

Depth to a restrictive feature (lithic bedrock): 5 to 10 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 0.7 inch)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 8

Land capability, nonirrigated: 8

Hydric soil status: Not hydric

Hydrologic soil group: D

Typical profile

A—0 to 4 inches; very gravelly medial very fine sandy loam

Bw—4 to 9 inches; very gravelly medial very fine sandy loam

R—9 inches; bedrock

Characteristics of Rock Outcrop (Olivine Basalt, Andesite, or Mudflow)

Slope: 0 to 15 percent

Geomorphic position: The top and side slopes of volcanic nunataks and ridges

Surface runoff (bare conditions): Very high

Definition: Rock outcrop consists of exposures of bedrock with no soil.

Characteristics of Powderhouse Medial Sandy Loam

Slope: 0 to 15 percent

Geomorphic position: The top and side slopes of volcanic nunataks and ridges

Parent material: Mixed tephra and cobbly and gravelly residuum weathered from volcanic rocks

Observed vegetation: White fir, California red fir, incense cedar, ponderosa pine, greenleaf manzanita, huckleberry oak, whitethorn ceanothus, and Sierra chinquapin

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 10 percent subrounded cobbles, 0 to 10 percent subrounded stones, 0 to 10 percent subrounded boulders

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: Very low (about 2.3 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material

A1—2 to 4 inches; medial sandy loam

A2—4 to 11 inches; medial sandy loam

Bw—11 to 27 inches; very cobbly medial sandy loam

C—27 to 36 inches; very gravelly medial coarse sandy loam

Cr—36 to 82 inches; bedrock

Minor Components in Map Unit 950**Medial-skeletal soils that are 10 to 20 inches deep to bedrock**

Composition: 3 percent

Slope: 0 to 15 percent

Geomorphic position: The top and side slopes of volcanic nunataks and ridges

Hydric soil status: Not hydric

Cliffs

Composition: 3 percent

Slope: 15 to 50 percent

Geomorphic position: Side slopes on volcanic nunataks and ridges

Hydric soil status: Not hydric

Talus*Composition:* 3 percent*Slope:* 0 to 15 percent*Geomorphic position:* Side slopes on volcanic nunataks and ridges*Hydric soil status:* Not hydric**Haploxerands, volcanic till, and similar soils***Composition:* 3 percent*Slope:* 0 to 15 percent*Geomorphic position:* Ridgetops and side slopes on moraines*Hydric soil status:* Not hydric**At an elevation of less than 4,800 feet, soils with a mesic soil temperature regime***Composition:* 3 percent*Slope:* 0 to 15 percent*Geomorphic position:* The top and side slopes of volcanic ridges*Hydric soil status:* Not hydric**951—Lumpkin taxadjunct-Rock outcrop-Powderhouse complex, 15 to 30 percent slopes*****Map Unit Setting****General location:* Eastern Butte County and western Plumas County*Major uses:* Wildlife habitat, watershed, and limited timber production*Major land resource area:* 22A*Landscape:* Southern Cascade Mountains*Elevation:* 4,520 to 6,115 feet (1,378 to 1,865 meters)*Mean annual precipitation:* 75 to 85 inches (1,905 to 2,159 millimeters)*Mean annual air temperature:* 48 to 50 degrees F (9 to 10 degrees C)*Frost-free period:* 80 to 110 days***Map Unit Composition***

Lumpkin taxadjunct very gravelly medial very fine sandy loam—40 percent

Rock outcrop (andesite)—25 percent

Powderhouse medial sandy loam—20 percent

Minor components—15 percent

Characteristics of Lumpkin Taxadjunct Very Gravelly Medial Very Fine Sandy Loam*Slope:* 15 to 30 percent*Geomorphic position:* Side slopes on volcanic nunataks and ridges*Parent material:* Mixed tephra and cobbly and gravelly residuum and/or colluvium derived from andesite*Observed vegetation:* Scattered ponderosa pine, incense cedar, California red fir, white fir, California black oak, whitethorn ceanothus, greenleaf manzanita, buckwheat, and annual grasses and forbs*Texture of the surface layer:* Very gravelly medial very fine sandy loam*Percentage of the surface covered by rock fragments:* 15 to 30 percent subrounded cobbles, 50 to 70 percent subrounded gravel, 0 to 20 percent subrounded stones*Depth to a restrictive feature (lithic bedrock):* 5 to 10 inches*Shrink-swell potential:* Low (LEP of less than 3)*Hydrologic properties* (based on typical depth to a restrictive feature or 60 inches)*Annual flooding frequency:* None

Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 0.7 inch)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile

A—0 to 4 inches; very gravelly medial very fine sandy loam
 Bw—4 to 9 inches; very gravelly medial very fine sandy loam
 R—9 inches; bedrock

Characteristics of Rock Outcrop (Andesite)

Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic nunataks and ridges
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Characteristics of Powderhouse Medial Sandy Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic nunataks and ridges
Parent material: Mixed tephra and cobbly and gravelly residuum and/or colluvium derived from andesite
Observed vegetation: White fir, California red fir, incense cedar, ponderosa pine, greenleaf manzanita, huckleberry oak, whitethorn ceanothus, and Sierra chinquapin
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 10 percent subrounded cobbles, 0 to 10 percent subrounded stones, 0 to 10 percent subrounded boulders
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Low (LEP of less than 3)
Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 2.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material
 A1—2 to 4 inches; medial sandy loam
 A2—4 to 11 inches; medial sandy loam
 Bw—11 to 27 inches; very cobbly medial sandy loam

C—27 to 36 inches; very gravelly medial coarse sandy loam
 Cr—36 to 82 inches; bedrock

Minor Components in Map Unit 951

Medial-skeletal soils that are 10 to 20 inches deep to bedrock

Composition: 6 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on volcanic nunataks and ridges

Hydric soil status: Not hydric

Cliffs

Composition: 3 percent

Slope: 30 to 70 percent

Geomorphic position: Side slopes on volcanic nunataks and ridges

Hydric soil status: Not hydric

Talus

Composition: 3 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on volcanic nunataks and ridges

Hydric soil status: Not hydric

Haploxerands, volcanic till, and similar soils

Composition: 3 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on moraines

Hydric soil status: Not hydric

960—Surnuf gravelly loam, 3 to 8 percent slopes, high elevation

Map Unit Setting

General location: Eastern Butte County and northern Yuba County

Major uses: Timber production, homesite development, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 2,000 to 3,280 feet (610 to 1,000 meters)

Mean annual precipitation: 58 to 65 inches (1,473 to 1,651 millimeters)

Mean annual air temperature: 54 to 55 degrees F (12 to 13 degrees C)

Frost-free period: 160 to 230 days

Map Unit Composition

Surnuf gravelly loam, high elevation—85 percent

Minor components—15 percent

Characteristics of Surnuf Gravelly Loam, High Elevation

Slope: 3 to 8 percent

Geomorphic position: Ridgetops on metavolcanic and intrusive igneous mountains

Parent material: Clayey residuum weathered from intrusive igneous and metamorphic rocks

Observed vegetation: Ponderosa pine, Douglas-fir, incense cedar, tanoak, Pacific madrone, mountain misery, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 5 percent subrounded stones, 0 to 5 percent subrounded cobbles, 0 to 20 percent subrounded gravel

Restrictive feature: None identified

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 7.6 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Low

Interpretive groups

Land capability, irrigated: 2e-1

Land capability, nonirrigated: 2e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material

A—0.5 inch to 6 inches; gravelly loam

AB—6 to 10 inches; gravelly loam

Bt1—10 to 20 inches; clay loam

Bt2—20 to 28 inches; clay loam

Bt3—28 to 38 inches; gravelly clay

Bt4—38 to 52 inches; gravelly clay

Bt5—52 to 67 inches; gravelly clay

Bt6—67 to 84 inches; gravelly clay

Minor Components in Map Unit 960

Surnuf soils with a subsoil of silty clay and similar soils

Composition: 5 percent

Slope: 3 to 8 percent

Geomorphic position: Ridgetops on metavolcanic and intrusive igneous mountains

Hydric soil status: Not hydric

Sites and similar soils

Composition: 5 percent

Slope: 3 to 8 percent

Geomorphic position: Ridgetops on metasedimentary mountains

Hydric soil status: Not hydric

Soils that have a skeletal subsoil

Composition: 3 percent

Slope: 3 to 8 percent

Geomorphic position: Ridgetops on metavolcanic and intrusive igneous mountains

Hydric soil status: Not hydric

Surnuf soils with slopes of as much as 15 percent and similar soils

Composition: 2 percent

Slope: 8 to 15 percent

Geomorphic position: Ridgetops on metavolcanic and intrusive igneous mountains

Hydric soil status: Not hydric

961—Surnuf gravelly loam, 8 to 15 percent slopes, high elevation

Map Unit Setting

General location: Eastern Butte County and northern Yuba County

Major uses: Timber production, homesite development, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 2,000 to 3,280 feet (610 to 1,000 meters)

Mean annual precipitation: 58 to 65 inches (1,473 to 1,651 millimeters)

Mean annual air temperature: 54 to 55 degrees F (12 to 13 degrees C)

Frost-free period: 160 to 230 days

Map Unit Composition

Surnuf gravelly loam, high elevation—85 percent

Minor components—15 percent

Characteristics of Surnuf Gravelly Loam, High Elevation

Slope: 8 to 15 percent

Geomorphic position: Side slopes on metavolcanic and intrusive igneous mountains

Parent material: Clayey residuum and/or colluvium derived from intrusive igneous and metamorphic rocks

Observed vegetation: Ponderosa pine, Douglas-fir, incense cedar, tanoak, Pacific madrone, mountain misery, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 5 percent subrounded stones, 0 to 5 percent subrounded cobbles, 0 to 20 percent subrounded gravel

Restrictive feature: None identified

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 7.6 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): Medium

Interpretive groups

Land capability, irrigated: 3e-1

Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material

A—0.5 inch to 6 inches; gravelly loam

AB—6 to 10 inches; gravelly loam

Bt1—10 to 20 inches; clay loam

Bt2—20 to 28 inches; clay loam

Bt3—28 to 38 inches; gravelly clay

Bt4—38 to 52 inches; gravelly clay

Bt5—52 to 67 inches; gravelly clay

Bt6—67 to 84 inches; gravelly clay

Minor Components in Map Unit 961

Surnuf soils with a subsoil of silty clay and similar soils

Composition: 5 percent

Slope: 8 to 15 percent

Geomorphic position: Side slopes on metavolcanic and intrusive igneous mountains

Hydric soil status: Not hydric

Sites loam and similar soils

Composition: 5 percent

Slope: 8 to 15 percent

Geomorphic position: Side slopes on metasedimentary mountains

Hydric soil status: Not hydric

Soils that have a skeletal subsoil

Composition: 3 percent

Slope: 8 to 15 percent

Geomorphic position: Side slopes on metavolcanic and intrusive igneous mountains

Hydric soil status: Not hydric

At an elevation of less than 2,800 feet, Surnuf soils on north-facing slopes and similar soils

Composition: 2 percent

Slope: 8 to 15 percent

Geomorphic position: Side slopes on metavolcanic and intrusive igneous mountains

Hydric soil status: Not hydric

962—Surnuf gravelly loam, 15 to 30 percent slopes, high elevation

Map Unit Setting

General location: Eastern Butte County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 2,000 to 3,280 feet (610 to 1,000 meters)

Mean annual precipitation: 58 to 65 inches (1,473 to 1,651 millimeters)

Mean annual air temperature: 54 to 55 degrees F (12 to 13 degrees C)

Frost-free period: 160 to 230 days

Map Unit Composition

Surnuf gravelly loam, high elevation—85 percent

Minor components—15 percent

Characteristics of Surnuf Gravelly Loam, High Elevation

Slope: 15 to 30 percent

Geomorphic position: Side slopes on metavolcanic and intrusive igneous mountains

Parent material: Clayey residuum and/or colluvium derived from intrusive igneous and metamorphic rocks

Observed vegetation: Ponderosa pine, Douglas-fir, incense cedar, tanoak, Pacific madrone, mountain misery, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 5 percent subrounded stones, 0 to 5 percent subrounded cobbles, 0 to 20 percent subrounded gravel

Restrictive feature: None identified

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 7.6 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material

A—0.5 inch to 6 inches; gravelly loam

AB—6 to 10 inches; gravelly loam

Bt1—10 to 20 inches; clay loam

Bt2—20 to 28 inches; clay loam

Bt3—28 to 38 inches; gravelly clay

Bt4—38 to 52 inches; gravelly clay

Bt5—52 to 67 inches; gravelly clay

Bt6—67 to 84 inches; gravelly clay

Minor Components in Map Unit 962

Surnuf soils with a subsoil of silty clay and similar soils

Composition: 5 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on metavolcanic and intrusive igneous mountains

Hydric soil status: Not hydric

Sites loam and similar soils

Composition: 5 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on metasedimentary mountains

Hydric soil status: Not hydric

Soils that have a skeletal subsoil

Composition: 3 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on metavolcanic and intrusive igneous mountains

Hydric soil status: Not hydric

At an elevation of less than 2,800 feet, Surnuf soils on north-facing slopes and similar soils

Composition: 2 percent

Slope: 15 to 30 percent

Geomorphic position: Side slopes on metavolcanic and intrusive igneous mountains

Hydric soil status: Not hydric

963—Surnuf gravelly loam, 30 to 50 percent slopes, high elevation

Map Unit Setting

General location: Southeastern Butte County

Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains

Elevation: 2,000 to 3,280 feet (610 to 1,000 meters)

Mean annual precipitation: 58 to 65 inches (1,473 to 1,651 millimeters)

Mean annual air temperature: 54 to 55 degrees F (12 to 13 degrees C)

Frost-free period: 160 to 230 days

Map Unit Composition

Surnuf gravelly loam, high elevation—85 percent

Minor components—15 percent

Characteristics of Surnuf Gravelly Loam, High Elevation

Slope: 30 to 50 percent

Geomorphic position: Side slopes on metavolcanic and intrusive igneous mountains

Parent material: Clayey residuum and/or colluvium derived from intrusive igneous and metamorphic rocks

Observed vegetation: Ponderosa pine, Douglas-fir, incense cedar, tanoak, Pacific madrone, mountain misery, and deerbrush

Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 20 percent coarse, subrounded gravel, 0 to 5 percent subrounded cobbles, 0 to 5 percent subrounded stones

Restrictive feature: None identified

Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None

Annual ponding frequency: None

Water table (zone of saturation): None observed

Available water capacity: High (about 7.6 inches)

Natural drainage class: Well drained

Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric

Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material

A—0.5 inch to 6 inches; gravelly loam

AB—6 to 10 inches; gravelly loam

Bt1—10 to 20 inches; clay loam

Bt2—20 to 28 inches; clay loam

Bt3—28 to 38 inches; gravelly clay

Bt4—38 to 52 inches; gravelly clay

Bt5—52 to 67 inches; gravelly clay

Bt6—67 to 84 inches; gravelly clay

Minor Components in Map Unit 963

Surnuf soils with a subsoil of silty clay and similar soils

Composition: 5 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on metavolcanic and intrusive igneous mountains

Hydric soil status: Not hydric

Sites loam and similar soils

Composition: 5 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on metasedimentary mountains

Hydric soil status: Not hydric

Soils that have a skeletal subsoil

Composition: 3 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on metavolcanic and intrusive igneous mountains

Hydric soil status: Not hydric

At an elevation of less than 2,800 feet, Surnuf soils on north-facing slopes and similar soils

Composition: 2 percent

Slope: 30 to 50 percent

Geomorphic position: Side slopes on metavolcanic and intrusive igneous mountains

Hydric soil status: Not hydric

990—Riverwash, 0 to 2 percent slopes, frequently flooded

Map Unit Setting

General location: Sacramento and Feather River channels

Major uses: Wildlife habitat and watershed

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 75 to 170 feet (23 to 52 meters)

Mean annual precipitation: 21 to 23 inches (533 to 584 millimeters)

Mean annual air temperature: 61 degrees F (16 degrees C)

Frost-free period: 245 days

Map Unit Composition

Riverwash, frequently flooded—100 percent

Characteristics of Riverwash, Frequently Flooded

Slope: 0 to 2 percent

Geomorphic position: Gravel bars in river channels

Kind of material: Sandy and gravelly alluvium derived from igneous and metamorphic rocks

Surface runoff (bare conditions): Negligible

Altered hydrology: Flood-control structures have altered the natural frequency, duration, and periods of flooding.

Definition: Riverwash consists of unstable, recent alluvial deposits of stratified, sandy and gravelly sediments. It is flooded and reworked frequently by rivers.

991—Xerofluvents, 0 to 4 percent slopes, frequently flooded

Map Unit Setting

General location: Northwestern Butte County

Major uses: Wildlife habitat, watershed, and livestock grazing

Major land resource areas: 17 and 18

Landscape: Sacramento Valley and Southern Cascade foothills

Elevation: 140 to 4,435 feet (44 to 1,353 meters)

Mean annual precipitation: 23 to 70 inches (584 to 1,778 millimeters)

Mean annual air temperature: 50 to 63 degrees F (10 to 17 degrees C)

Frost-free period: 110 to 260 days

Map Unit Composition

Xerofluvents sandy loam, frequently flooded—75 percent

Minor components—25 percent

Characteristics of Xerofluvents Sandy Loam, Frequently Flooded

Slope: 0 to 4 percent

Geomorphic position: Bars and channels on flood plains

Parent material: Stratified, sandy and gravelly alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: California sycamore, white alder, Fremont cottonwood, valley oak, willows, foothill pine, California laurel, and Douglas sagewort

Surface feature: Bar-and-channel topography

Texture of the surface layer: Sandy loam

Percentage of the surface covered by rock fragments: 0 to 75 percent medium, rounded gravel, 0 to 40 percent rounded cobbles, 0 to 5 percent rounded stones

Restrictive feature: None identified

Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: Frequent

Annual ponding frequency: None

Depth to a water table (zone of saturation): 28 to 80 inches

Available water capacity: Moderate (about 5.7 inches)

Natural drainage class: Somewhat poorly drained

Surface runoff (bare conditions): Negligible

Interpretive groups

Land capability, irrigated: 6w-2

Land capability, nonirrigated: 6w-2

Storie index: 0 (revised)

Hydric soil status: Not hydric

Hydrologic soil group: A

Typical profile

A—0 to 6 inches; sandy loam
 C1—6 to 14 inches; sandy loam
 C2—14 to 26 inches; sandy loam
 C3—26 to 37 inches; sandy loam
 Ab—37 to 43 inches; sandy loam
 C4—43 to 47 inches; loamy sand
 C5—47 to 54 inches; sandy loam
 C6—54 to 72 inches; loamy sand
 C7—72 to 80 inches; sandy loam

Minor Components in Map Unit 991**Xerofluvents, frequently flooded for long periods, and similar soils***Composition:* 13 percent*Slope:* 0 to 4 percent*Geomorphic position:* Channels on flood plains*Hydric soil status:* Hydric**Charger fine sandy loam and similar soils***Composition:* 6 percent*Slope:* 0 to 4 percent*Geomorphic position:* Alluvial fans*Hydric soil status:* Not hydric**Vina fine sandy loam and similar soils***Composition:* 3 percent*Slope:* 0 to 4 percent*Geomorphic position:* Alluvial fans*Hydric soil status:* Not hydric**Xerofluvents with bedrock at a depth of less than 60 inches and similar soils***Composition:* 3 percent*Slope:* 0 to 4 percent*Geomorphic position:* Bars and channels on flood plains*Hydric soil status:* Not hydric**995—Pits, gravel****Map Unit Setting***General location:* Western Butte County*Major uses:* Source of aggregate and wildlife habitat*Major land resource area:* 17*Landscape:* Sacramento Valley*Elevation:* 130 to 295 feet (40 to 91 meters)*Mean annual precipitation:* 22 to 26 inches (559 to 660 millimeters)*Mean annual air temperature:* 61 to 63 degrees F (16 to 17 degrees C)*Frost-free period:* 250 days**Map Unit Composition**

Pits, gravel—100 percent

Characteristics of Pits, Gravel

Geomorphic position: Flood plains and fan terraces

Kind of material: Sandy and gravelly alluvium derived from igneous and metamorphic rocks

Definition: Gravel pits consist of open excavations from which soil has been removed. The underlying exposed deposits of sand and gravel are excavated and removed.

996—Dumps, excavated material

Map Unit Setting

General location: Central Butte County

Major uses: Wildlife habitat and source of fill aggregate

Major land resource area: 17

Landscape: Sacramento Valley

Elevation: 130 to 295 feet (40 to 91 meters)

Mean annual precipitation: 22 to 26 inches (559 to 660 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 250 days

Map Unit Composition

Dumps, excavated material—100 percent

Characteristics of Dumps, Excavated Material

Geomorphic position: Intermediate terraces

Definition: Dumps, excavated material, occur as areas of smooth or uneven accumulations or piles of stockpiled waste rock excavated during construction of the Thermalito Power Canal.

997—Pits

Map Unit Setting

General location: Central Butte County

Major uses: Wildlife habitat and recreation

Major land resource area: 17

Landscape: Sacramento Valley and Northern Sierra Nevada foothills

Elevation: 130 to 1,650 feet (40 to 503 meters)

Mean annual precipitation: 22 to 35 inches (559 to 889 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)

Frost-free period: 250 to 260 days

Map Unit Composition

Pits—95 percent

Minor components—5 percent

Characteristics of Pits

Slope: 0 to 200 percent

Geomorphic position: Metamorphic and sedimentary hills and intermediate terraces

Definition: Pits consist of open excavations from which soil and, commonly, the

underlying material have been removed, exposing rock or other material. The remaining areas are associated with construction of the Oroville Dam, the Thermalito Power Canal, the Oroville Diversion Dam, and the fish barrier dam in the Oroville area and with mining at the Cherokee Gold Mine.

Minor Components in Map Unit 997

Rock outcrop

Composition: 3 percent

Slope: 0 to 200 percent

Geomorphic position: Metavolcanic hills

Cliffs

Composition: 2 percent

Slope: 150 to 200 percent

Geomorphic position: Terraces

998—Dumps, landfill

Map Unit Setting

General location: Central Butte County

Major use: Garbage disposal

Major land resource area: 18

Landscape: Southern Cascade foothills

Elevation: 225 to 415 feet (70 to 128 meters)

Mean annual precipitation: 26 inches (660 millimeters)

Mean annual air temperature: 61 degrees F (16 degrees C)

Frost-free period: 250 days

Map Unit Composition

Dumps, landfill—100 percent

Characteristics of Dumps, Landfill

Geomorphic position: The top and side slope of volcanic ridges

Definition: Dumps, landfill, occur as smoothed or uneven accumulations or piles of general refuse and the associated adjoining areas where soil has been removed for landfill cover.

999—Water

Map Unit Setting

Major land resource areas: 17, 18, 22A, and 22B

Map Unit Composition

Water—100 percent

Characteristics of Water

Definition: A perennial water body that includes streams, rivers, lakes, and ponds. Pits and reservoirs that contain water also are mapped as water. The water polygons are delineated according to the aerial imagery used during compilation of maps, as water coverage may fluctuate throughout and among years. Water bodies that are too small or narrow are not delineated.

DAM—Dam

Map Unit Composition

Dam, manmade—100 percent

Characteristics of Dam, Manmade

Definition: A constructed barrier, together with any associated spillways and appurtenant works, across a watercourse or natural drainage area. It permanently impounds and stores water, traps sediment, and controls floodwater.

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as forestland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; and as wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of gravel, sand, reclamation material, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Interpretive Ratings

The interpretive tables in this survey rate the soils in the survey area for various uses. Many of the tables identify the limitations that affect specified uses and indicate the severity of those limitations. The ratings in these tables are both verbal and numerical.

Rating Class Terms

Rating classes are expressed in the tables in terms that indicate the extent to which the soils are limited by all of the soil features that affect a specified use or in terms that indicate the suitability of the soils for the use. Thus, the tables may show limitation classes or suitability classes. Terms for the limitation classes are *not limited*, *somewhat limited*, and *very limited*. The suitability ratings are expressed as *well suited*, *moderately suited*, *poorly suited*, and *unsuited* or as *good*, *fair*, and *poor*.

Numerical Ratings

Numerical ratings in the tables indicate the relative severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate

gradations between the point at which a soil feature has the greatest negative impact on the use and the point at which the soil feature is not a limitation. The limitations appear in order from the most limiting to the least limiting. Thus, if more than one limitation is identified, the most severe limitation is listed first and the least severe one is listed last.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for rangeland, for forestland, or for engineering purposes.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit (USDA, 1961).

Capability classes, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have slight limitations that restrict their use.

Class 2 soils have moderate limitations that restrict the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.

Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.

Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e*, *w*, *s*, or *c*, to the class numeral, for example, 2*e*. The letter *e* shows that erosion is the main hazard affecting the use of the soils. The letter *w* shows that excess water is the main limitation affecting the use of the soils. Poor soil drainage, wetness, a high water table, ponding, and overflow are the factors that affect the soils in this subclass. The letter *s* shows that the soil is shallow or has other limitations within the root zone, such as rock fragments, limited available water capacity, low fertility that is difficult to correct, and salinity or sodium content. The letter *c* shows that the climate is the major limitation affecting the soils.

In class 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *w*, *s*, or *c* because the soils in class 5 are subject to little or no erosion. Class 8 does not include subclasses.

Capability units are soil groups within a subclass. The soils in a capability unit have similar potentials and limitations and require similar management. Capability units are

generally designated by adding an Arabic numeral to the subclass symbol, for example, 2e-4 and 3e-6.

Table 5 lists the capability classification of the soils and miscellaneous areas in this survey area. This information is also provided in the section "Detailed Soil Map Units."

Major Land Resource Areas

Prepared by Jennifer Anderson, Soil Scientist, Natural Resources Conservation Service, Chico, California.

A major land resource area (MLRA) is a broad geographic area that has a distinct combination of climate, topography, vegetation, land use, and general type of farming (USDA, 2006). Parts of four of these nationally designated areas are in this survey area. These areas and their numbers are Sacramento and San Joaquin Valleys, MLRA 17; Sierra Nevada Foothills, MLRA 18; Sierra Nevada Mountains, MLRA 22A; and Southern Cascade Mountains, MLRA 22B. The major land resource area number is given in the detailed soil map unit descriptions.

MLRA 17, Sacramento and San Joaquin Valleys.—About one-third of the survey area is included in MLRA 17. Locally referred to as the Central Valley, this area includes the Sacramento and San Joaquin Rivers and is characterized by the influence of alluvial processes, including sediment transport, deposition, sorting, and development. These processes have created distinct landforms that guide land use. For instance, the processes formed the valley basins adjacent to the rivers, fans, and flood plains around tributary streams and the terraces and foothills around the valley edges.

The deepest, oldest sediments in the Central Valley came from the early Sierra Nevada volcanoes and were deposited in a marine environment. More recent sediments that were deposited in a nonmarine environment came from the Sierra Nevada Batholith granites, which were exposed upon weathering of the volcanoes. Most of this major land resource area's surface has been covered by recent alluvial sediments, which exhibit various patterns of sediment deposition. The finer grained sediments occur in connection with flood plains, lakes, and basins; the coarser grained sands and gravel occur in connection with alluvial fans and stream channels; and gravelly stream terrace remnants occur along the edges of valleys.

Elevation ranges from sea level to 660 feet (200 meters) above sea level. The average annual precipitation is 12 to 30 inches (305 to 760 mm) in most of the Sacramento Valley, reaching 40 inches (1,015 mm) at the higher edges of the valley's north end. The average annual precipitation in the San Joaquin Valley ranges from 5 to 12 inches (125 to 305 mm). The average annual temperature in this MLRA is 59 to 67 degrees F (15 to 20 degrees C), and the average annual freeze-free period is 325 days.

Because of low rainfall and low streamflow, water is scarce in many parts of this area. Irrigation for crops is obtained through stream diversions, wells, and canals of irrigation districts, which obtain their water from State and Federal water systems. The Sacramento and Feather Rivers supply most of the water used in the area.

Vegetation includes naturalized annuals and wild grains, scattered oaks on terraces, and oak, willow, and cottonwood along rivers and streams. Parts of the area are very important for wintering waterfowl and seasonally neotropical migrants.

About 58 percent of the land in this area is used for crops, mainly cotton, nuts, grapes, grains, hay, pasture, rice, alfalfa, citrus, and tomatoes in irrigated areas. The acreage used for urban development is increasing.

MLRA 18, Sierra Nevada Foothills.—About one-third of the survey area is included in MLRA 18. This MLRA is at the toe of the gentle east-west slope on the west side of the Sierra Nevada Mountains. The area consists of rolling to steep, dissected hills and low mountains. The northernmost part of the area is underlain dominantly by

pyroclastic rocks and volcanic mudflow of the Tuscan Formation, which formed from eruptions of volcanoes in the Cascade Range. To the south, metamorphosed marine sedimentary and volcanic rocks underlie this area; granites of the Sierra Nevada Batholith underlie the foothills around Merced and southward.

Elevation generally ranges from 660 to 1,650 feet (200 to 505 meters) but can be as much as 3,950 feet (1,205 meters) on isolated peaks. The average annual precipitation is 18 to 45 inches (455 to 1,145 millimeters), and the average annual temperature is 47 to 67 degrees F (8 to 20 degrees C). The average annual freeze-free period is 275 days.

Surface water in this area is generally of very high quality, requiring little or no treatment before use. Ground water supplies are small and mostly untapped. Vegetation includes naturalized annual grasses, shrubs, and trees. Grassland species consist dominantly of soft chess, wild oats, filaree, burclover, ripgut brome, and foxtail fescue. Scrub live oak, blue oak, and foothill pine occur as individual trees or in stands. Chamise and manzanita dominate areas of brushland, and ponderosa pine, manzanita, and black oak occur at the higher elevations.

More 60 percent of this area is grassland used mainly as rangeland for livestock production. A significant acreage of the area is brushland or openland hardwood forest, and only a small acreage is used as cropland.

MLRA 22A, Sierra Nevada Mountains.—About a one-sixth of the survey area is included in MLRA 22A. The higher elevations of the asymmetrical Sierra Nevada Mountains, with their steep eastern escarpment and gently sloping western slopes, make up this major land resource area. This area is characterized by hilly to steep mountain relief and mountain valleys, dominantly shaped by glaciers. The fingerprints of the glacial history in this area includes U-shaped valleys, scoured-out cirques, glacial till, and intermontane valleys filled with coarse grained alluvial deposits. Volcanic activity of minor extent produced lava flows in this area.

Elevation generally ranges from 1,500 to 9,000 feet (455 to 2,745 meters); some peaks exceed 12,000 feet (3,660 meters). The average annual precipitation is 40 to 80 inches (1,015 to 2,030 millimeters) in this area, with extremes of 6 inches (150 millimeters) in the foothills and lower valleys and as much as 100 inches (2,540 millimeters) on mountain peaks. Much of the winter precipitation occurs as snow. The average annual temperature is 25 to 63 degrees F (-4 to 17 degrees C), and the average annual freeze-free period is 205 days.

The abundant rainfall and snowfields on the higher mountain slopes supply the water needed to support forest and rangeland and help to meet the water needs of the lower areas by contributing to many perennial rivers. The main coniferous forest vegetation in this area is ponderosa pine, Douglas-fir, incense cedar, sugar pine, white fir, California red fir, Jeffrey pine, lodgepole pine, and mountain hemlock. Understory species in open stands include manzanita, sagebrush, blue wildrye, and bluegrasses. About three-fourths of this area is federally owned and is in national parks and forests. The rest consists of privately owned ranches, farms, and forestland. About 83 percent of the area is forestland and is used for recreation, wildlife habitat, timber production, and watershed. Less than 10 percent of the area is used as rangeland, and very little of the area is cropland.

MLRA 22B, Southern Cascade Mountains.—About one-sixth of the survey area is included in MLRA 22B. This MLRA covers the southernmost area of the north- to south-trending Cascade Mountain Range. It is made up primarily of volcanics, which are exposed as peaks and volcanic uplands. It is surrounded by cinder cones, shield volcanoes, and composite volcanoes. Well known peaks and recently active volcanoes in this area include Medicine Lake Volcano, Mount Lassen, and Mount Shasta. Alluvial, lacustrine, and fluvial deposits have collected in the depressions on lava flows, between lava flows, and in stream valleys and basins.

The average annual precipitation is 15 to 80 inches (380 to 2,030 millimeters). It occurs mainly as snow. The average annual temperature is 33 to 62 degrees F (1 to 17 degrees C), and average annual freeze-free period is 215 days.

The abundant rainfall and snowfields on the higher mountain slopes supply the water needed to support forest and rangeland and help to meet the water needs of lower areas by contributing to perennial streams. The surface water in this area is of high quality. The use of ground water is minimal.

Three main types of vegetation occur in this area. These are low-elevation mixed conifer forests consisting of ponderosa pine, incense cedar, and California black oak; higher elevation conifer forests consisting of white fir, sugar pine, ponderosa pine, incense cedar, Douglas-fir, California black oak, and Oregon white oak on the western slopes and Jeffrey pine and ponderosa pine on the eastern slopes; and at the higher elevations, upper montane forests consisting of red fir and lodgepole pine. Meadows occur throughout the forested areas.

Federally owned land occurring mainly as national forests makes up more than half of this area. The remaining land consists of privately owned ranches, farms, and forestland. About 72 percent of the area consists of forests, which are used for wildlife habitat, recreation, timber production, and watershed, and about 17 percent is rangeland. Only about 2 percent of the area is used as cropland.

Prime Farmland and Other Important Farmlands

In an effort to identify the extent and location of important farmlands, the Natural Resources Conservation Service, in cooperation with other interested Federal, State, and local government organizations, has inventoried land that can be used for the production of the Nation's food supply.

Prime farmland is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil quality, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. The water supply is dependable and of adequate quality. Prime farmland is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

A recent trend in land use in some areas has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

About 240,800 acres in the survey area, or nearly 26 percent of the total acreage, meets the criteria for prime farmland. Most of the acreage designated as prime farmland is used to produce rice, almonds, walnuts, and dried plums.

The map units in the survey area that are considered prime farmland are listed in table 6. This list does not constitute a recommendation for a particular land use. On some soils included in the list, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures.

In some areas, land that does not meet the criteria for prime farmland is considered to be *farmland of statewide importance* for the production of food, feed, fiber, forage, and oilseed crops. The criteria for defining and delineating farmland of statewide importance are determined by the appropriate State agencies. Generally, this land includes areas of soils that nearly meet the requirements for prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Some areas may produce as high a yield as prime farmland if conditions are favorable. Farmland of statewide importance may include tracts of land that have been designated for agriculture by State law.

About 56,000 acres in the survey area, or about 6 percent of the total acreage, meets the criteria for farmland of statewide importance. Most of this acreage is used to produce grain, pasture, hay, orchard crops, or grapes.

The map units in the survey area that are considered farmland of statewide importance are listed in table 7. This list does not constitute a recommendation for a particular land use. On some soils included in the list, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures.

The extent of the map units that are considered prime farmland or farmland of statewide importance is shown in table 4. The location is shown on the detailed soil maps. The soil qualities that affect use and management are described under the heading "Detailed Soil Map Units."

Storie Index

Prepared by Anthony "Toby" O'Geen, Ph.D., Soils Extension Specialist, University of California, Davis, and Susan Southard, Soil Scientist, Natural Resources Conservation Service.

The Storie index is a widely known and accepted method of rating soils for land use and productivity in California (Storie, 1978). Ratings are generated from a broad range of soil profile and landscape characteristics. The Storie index of the soils in this survey area is shown in table 8 and in the descriptions of the detailed soil map units. Historically, Storie index ratings have been "hand generated" by soil survey staff and collaborators. These ratings can be highly subjective because no single person has generated them for the entire State and because there are inherent biases associated with the classification system. To reduce this subjectivity, a revised Storie index is used in the National Soils Information System (NASIS) to compute the ratings.

The model uses combinations of discrete and fuzzy logic functions (Cox, 1999) to obtain scores for the factors associated with the Storie index. If the modeled criteria in NASIS are used, subjectivity can be minimized and ratings can be generated in a timely and consistent manner.

The Storie index assesses the productivity of a soil on the basis of four factors. These are factor A, the degree of soil profile development; factor B, texture of the surface horizon; factor C, slope; and factor X, manageable features, including drainage, microrelief, fertility, acidity, erosion, and salt content. A score ranging from 0 to 100 percent is determined for each factor, and the scores are then multiplied together to derive an index rating (Storie, 1933, 1978). For map units with more than

one major component, the Storie index can be a weighted average based on the percentages of the soil components in the unit, the rating can be based solely on the major soil component, or it can be the best rating in the map unit.

For *factor A*, the degree of soil development is used to assess potential productivity. For alluvial soils, the score is progressively decreased with increasing degree of soil development and/or the presence of root-restrictive layers. Deep, well drained alluvial soils would be rated 100, whereas a similar soil with a restrictive horizon, such as a claypan or hardpan, would be rated much lower. For soils that formed in material weathered from bedrock, scoring is based on depth to lithic or paralithic contact.

Two main data sets in NASIS are used to model factor A, soil taxonomy and landform. Interpretive criteria implied in the Storie Profile Group (factor A) relied on the current taxonomic placement (Soil Survey Staff, 1999) of the soil in NASIS. In all situations, the upper limit of the scoring range was used for each soil profile group. For example, an Entisol that formed on the valley floor would be rated 100, whereas a Durixeralf that is on an old terrace and is less than 1 foot deep to a pan would receive a rating of 80. For depth to a restrictive layer, the fuzzy logic rule “more is better” was used to revise the upper limit of the score.

Factor B is based on texture of the surface horizon. Loamy soils receive the highest ratings, and clay-rich and sandy soils receive lower ratings. The scores are modified by the content of rock fragments. They range from 100 to 10 percent.

Crisp values were assigned for surface horizon textural classes according to Storie (1978). The following textures were not listed in the original Storie index publication and were added and assigned ratings by the authors: silty clay, clay, coarse sand, very fine sandy loam, sandy clay, loamy coarse sand, loamy fine sand, loamy very fine sand, and silt. At the present time, the NASIS Storie model does not rate in-lieu-of-textures because they were not addressed in the original Storie index. The content of rock fragments modified textural class ratings according to the fuzzy logic rule “less is better.” The fuzzy score for content of rock fragments was used to weight the surface soil textural class score for factor B. For example, a silt loam with 0 percent rock fragments received a score of 100, while a very gravelly silt loam with 45 percent rock fragments received a score weighted proportionally to the content of rock fragments.

Factor C is based on steepness of slope. Scores are 100 to 85 percent if slopes are nearly level or gently sloping (0 to 8 percent), 95 to 70 percent if slopes are moderately sloping or strongly sloping (9 to 30 percent), and 50 to 5 percent if slopes are steep (more than 30 percent).

When slope classes stored in NASIS were scored, the fuzzy logic rule “less is better” was used. This function reduced the subjectivity associated with choosing a score from the range of scores within each factor. For example, the original Storie factor C (slope) has slope categories with scores that range from 100 for nearly level to 5 for very steep (Storie, 1978).

Factor X focuses on soil and landscape characteristics, exclusive of the soil profile, that require special management. The characteristics considered are fertility, drainage, erosion, acidity, salt content, and microrelief.

Data elements stored in NASIS, such as drainage class, erosion class, microrelief, flooding, and ponding, were used to model the hydrologic and physical properties associated with the X factor. Toxic thresholds were established for electrical conductivity, sodium adsorption ratio, and pH to define adverse chemical properties used for the X factor. Optimum soil pH was used to characterize fertility. Fuzzy rule sets were implemented in NASIS to model chemical and fertility attributes associated with the X factor. A “less is better” curve was used to score erosion and salt content. Crisp values were assigned to hydrologic properties.

Named components in map units are assigned grades according to their suitability for general intensive agriculture as shown by their Storie index ratings. The six grades and their range in index ratings are:

- Grade 1—80 to 100
- Grade 2—60 to 79
- Grade 3—40 to 59
- Grade 4—20 to 39
- Grade 5—10 to 19
- Grade 6—less than 10

Grade 1 soils are well suited to intensively grown irrigated crops that are climatically adapted to the region.

Grade 2 soils are good agricultural soils, although they are not so desirable as soils in grade 1 because of a less permeable subsoil, deep cemented layers (e.g., duripans), a gravelly or moderately fine textured surface layer, moderate or strong slopes, restricted drainage, a low available water capacity, lower soil fertility, or a slight or moderate hazard of flooding.

Grade 3 soils are only fairly well suited to agriculture because of moderate soil depth; moderate to steep slopes; restricted permeability in the subsoil; a clayey, sandy, or gravelly surface layer; somewhat restricted drainage; acidity; low fertility; or a hazard of flooding.

Grade 4 soils are poorly suited. They are more limited in their agricultural potential than the soils in grade 3 because of such restrictions as a shallower depth; steeper slopes; poorer drainage; a less permeable subsoil; a gravelly, sandy, or clayey surface layer; channeled or hummocky microrelief; or acidity.

Grade 5 soils are very poorly suited to agriculture and are seldom cultivated. They are more commonly used as pasture, rangeland, or woodland.

Grade 6 soils and miscellaneous areas are not suited to agriculture because of very severe or extreme limitations. They are better suited to limited use as rangeland, protective habitat, woodland, or watershed.

Important note: This interpretation was not designed to be used in a regulatory manner.

Hydric Soils

Table 9 lists the map unit components that are rated as hydric soils in the survey area. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 2002).

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2003) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and others, 2002).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The criteria for hydric soils are represented by codes in the table (for example, 2B3). Definitions for the codes are as follows:

1. All Histels except for Folistels, and Histosols except for Folists.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
 - A. are somewhat poorly drained and have a water table at the surface (0.0 feet) during the growing season, or
 - B. are poorly drained or very poorly drained and have either:
 - 1) a water table at the surface (0.0 feet) during the growing season if textures are coarse sand, sand, or fine sand in all layers within a depth of 20 inches, or
 - 2) a water table at a depth of 0.5 foot or less during the growing season if permeability is equal to or greater than 6.0 in/hr in all layers within a depth of 20 inches, or
 - 3) a water table at a depth of 1.0 foot or less during the growing season if permeability is less than 6.0 in/hr in any layer within a depth of 20 inches.
3. Soils that are frequently ponded for long or very long duration during the growing season.
4. Soils that are frequently flooded for long or very long duration during the growing season.

Forestland Productivity and Management

The tables described in this section can help forest owners or managers plan the use of soils for wood crops. They show the potential productivity of the soils for wood crops and rate the soils according to the limitations that affect various aspects of

forestland management. Only the soils that have the potential to produce wood crops are listed.

Forestland Productivity

In table 10, the *potential productivity* of merchantable or *common trees* on a soil is expressed as a site index and as a volume number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that forest managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. *Site index base*, given as a number, refers to the site index curve used to determine the productivity. The site index bases used are from the National Register of Site Index Curves. They are as follows: 30—Schumacher, 1926; 50—Schumacher, 1928; 600—Meyer, 1938; 605—Dunning, 1942; and 790—McArdle, Meyer, and Bruce, 1961. More detailed information about site index and site index bases is available in the “National Forestry Manual,” which is available in local offices of the Natural Resources Conservation Service or on the Internet.

The *annual production*, a number, is the yield likely to be produced by the most important tree species. This number, expressed as cubic feet per acre per year and calculated at the age of culmination of the mean annual increment (CMAI), indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

Trees to manage are those that are preferred for planting, seeding, or natural regeneration and those that remain in the stand after thinning or partial harvest.

Forestland Management

In the tables described in this section, interpretive ratings are given for various aspects of forestland management. The ratings are both verbal and numerical.

Some rating class terms indicate the degree to which the soils are suited to a specified aspect of forestland management. *Well suited* indicates that the soil has features that are favorable for the specified management aspect and has no limitations. Good performance can be expected, and little or no maintenance is needed. *Moderately suited* indicates that the soil has features that are moderately favorable for the specified management aspect. One or more soil properties are less than desirable, and fair performance can be expected. Some maintenance is needed. *Poorly suited* indicates that the soil has one or more properties that are unfavorable for the specified management aspect. Overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration. *Unsuited* indicates that the expected performance of the soil is unacceptable for the specified management aspect or that extreme measures are needed to overcome the undesirable soil properties.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the specified aspect of forestland management (1.00) and the point at which the soil feature is not a limitation (0.00).

Rating class terms for fire damage and seedling mortality are expressed as *low*, *moderate*, and *high*. Where these terms are used, the numerical ratings indicate gradations between the point at which the potential for fire damage or seedling mortality is highest (1.00) and the point at which the potential is lowest (0.00).

The paragraphs that follow indicate the soil properties considered in rating the soils. More detailed information about the criteria used in the ratings is available in the

“National Forestry Manual,” which is available in local offices of the Natural Resources Conservation Service or on the Internet.

Table 11a

Ratings in the column *potential for damage to soil by fire* are based on texture of the surface layer, content of rock fragments and organic matter in the surface layer, thickness of the surface layer, and slope. The soils are described as having a low, moderate, or high potential for this kind of damage. The ratings indicate an evaluation of the potential impact of prescribed fires or wildfires that are intense enough to remove the duff layer and consume organic matter in the surface layer.

Ratings in the column *potential for seedling mortality* are based on flooding, ponding, depth to a water table, content of lime, reaction, salinity, available water capacity, soil moisture regime, soil temperature regime, aspect, and slope. The soils are described as having a low, moderate, or high potential for seedling mortality.

Table 11b

Ratings in the columns *suitability for hand planting* and *suitability for mechanical planting* are based on slope, depth to a restrictive layer, content of sand, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, moderately suited, poorly suited, or unsuited to these methods of planting. It is assumed that necessary site preparation is completed before seedlings are planted.

Ratings in the column *suitability for use of harvesting equipment* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, and ponding. The soils are described as well suited, moderately suited, or poorly suited to this use.

Table 11c

Ratings in the column *suitability for mechanical site preparation (surface)* are based on slope, depth to a restrictive layer, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 1 foot is considered in the ratings.

Ratings in the column *suitability for mechanical site preparation (deep)* are based on slope, depth to a restrictive layer, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 3 feet is considered in the ratings.

Table 11d

Ratings in the column *hazard of off-road or off-trail erosion* are based on slope and on soil erodibility factor K. The soil loss is caused by sheet or rill erosion in off-road or off-trail areas where 50 to 75 percent of the surface has been exposed by logging, grazing, mining, or other kinds of disturbance. The hazard is described as slight, moderate, severe, or very severe. A rating of *slight* indicates that erosion is unlikely under ordinary climatic conditions; *moderate* indicates that some erosion is likely and that erosion-control measures may be needed; *severe* indicates that erosion is very likely and that erosion-control measures, including revegetation of bare areas, are advised; and *very severe* indicates that significant erosion is expected, loss of soil productivity and off-site damage are likely, and erosion-control measures are costly and generally impractical.

Ratings in the column *hazard of erosion on roads and trails* are based on the soil erodibility factor K, slope, and content of rock fragments. The ratings apply to unsurfaced roads and trails. The hazard is described as slight, moderate, or severe. A

rating of *slight* indicates that little or no erosion is likely; *moderate* indicates that some erosion is likely, that the roads or trails may require occasional maintenance, and that simple erosion-control measures are needed; and *severe* indicates that significant erosion is expected, that the roads or trails require frequent maintenance, and that costly erosion-control measures are needed.

Ratings in the column *suitability for roads (natural surface)* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage. The ratings indicate the suitability for using the natural surface of the soil for roads. The soils are described as well suited, moderately suited, or poorly suited to this use.

Characteristic Vegetation

In areas that have similar climate and topography, differences in the kind and amount of forestland vegetation are closely related to the kind of soil. Effective management is based on the relationships among soils, vegetation, and climate.

Management of vegetation requires knowledge of the kinds of soils and the potential natural plant communities on those soils. It also requires an evaluation of the present and desired condition trends for a given management area. The quantity and quality of understory vegetation in forests vary with the kind of soil, the age and kind of trees in the canopy, the density of the canopy, and the thickness and stage of decomposition of the litter. The density of the canopy determines the amount of light that understory plants receive.

Table 12 shows, for each soil that supports vegetation suitable for cropland, wildlife habitat, livestock grazing, or timber management, the commonly observed characteristic overstory and understory vegetation. Relative abundance as percent cover is shown for soils that are managed for timber production. The table provides information about vegetative relationships for specific soils. Data were collected following standard methods for areas that are managed for timber production. For all other areas, data are given for the commonly observed plants only.

Overstory vegetation more than 15 feet in height refers to the trees and shrubs that make up the canopy cover portion of the observed natural plant community on each soil. The common name and plant symbol are listed. The *percent cover by species* is the abundance, as a representative percentage of the total canopy cover, for each species that makes up the overstory portion of the characteristic vegetation. In agricultural areas, only the commonly occurring species are shown.

Understory vegetation less than 15 feet in height refers to the grasses, forbs, shrubs, and seedling trees that make up the understory portion of the observed natural plant community. The common name and plant symbol are listed. The *percent cover by species* is the abundance, as a representative percentage of the total understory, for each species that makes up the understory portion of the characteristic vegetation. If there is no associated canopy cover, the commonly observed plants are listed in the understory vegetation column.

Table 13 provides an index of the characteristic vegetation (common plant name, scientific plant name, and plant symbol) arranged in order by common plant name. Table 14 provides the same information arranged in order by plant symbol.

Wildlife Habitat

Prepared by Joseph G. Silveira, Wildlife Biologist, U.S. Fish and Wildlife Service, Sacramento National Wildlife Refuge Complex, Willows, California.

This survey area is characterized by a diversity of landforms, geology, soils, topography, hydrology, and climates, which result in various forms of vegetation (in areas of grassland, woodland, scrubland, chaparral, and mixed hardwood and

coniferous forests) and a rich diversity of natural plant communities and wildlife habitats. The flood plains along the Sacramento and Feather Rivers, Butte Basin, alluvial fans and terraces in the northern Sacramento Valley, and the Southern Cascade and Northern Sierra Nevada foothills and mountains are covered with a rich mosaic of vegetation and are dissected by streams, which provide water, food, cover, and breeding, migration, and wintering habitats for native fish, amphibians, reptiles, birds, and mammals.

Wildlife habitat is related to the soil landscape. The traditional definition of wildlife focused on birds (particularly waterfowl) and big game and fur-bearing animals, largely ignoring other vertebrate animals (fish, amphibians, reptiles, songbirds, and small mammals). Wildlife habitat was viewed in the context of wetlands, uplands, rangelands, and forests. The term “wildlife,” however, implies all free-living organisms (Robinson and Bolen, 1989), including vertebrate and invertebrate fauna (animals) and flora (plants) living in both natural and managed wild lands.

The term “biodiversity” refers to living organisms (biota), their populations and assemblages (communities), while “natural diversity” refers to indigenous biota and the biological and geophysical processes (ecosystem) that sustain them. California wildlife habitats are described by specific vegetation or plant communities in the Wildlife Habitat Relationship Program (Mayer and Laudenslayer, 1988). Other classification systems are used specifically for vegetation, such as the current manual (Sawyer and Keeler-Wolf, 1995), which is under revision, and the former system (Holland, 1986), which is highly useful for describing valley and foothill habitats and understanding geophysical process, which affect vegetation patterns on the land. Other sources describe California vegetation in greater detail (Major and Barbour, 1988); exemplify its spectacular diversity (Faber, 1997); explore human impacts on the vegetation, landscape, and wildlife (Barbour and others, 1993; Thlander, 1994); and describe threats to, and opportunities for sustaining, California’s biodiversity (California Department of Fish and Game, 2003). In a simplified, compact handbook, Storer and Usinger (1963) illustrate and describe a surprising amount of the biodiversity in Butte County.

Soil science is a key component of landscape ecology and must be considered for wildlife habitat restoration and management where the goal is to increase and sustain biodiversity. Landscape ecology is a sub-discipline of ecology that focuses on spatial and temporal variation through study of the relationships of physical elements and processes to patterns of energy flow, wildlife, and plant populations and communities (Forman and Gordon, 1986). This emerging science integrates climatology, hydrology, geology, geomorphology, soil science, vegetation and wildlife science, economics, sociology, law, engineering, and land use planning to conserve, enhance, restore, and protect the ecosystems on the land. Landscape ecology encompasses natural and human-influenced physical and biological features (patterns) and processes that shape the environment (U.S. Fish and Wildlife Service, 2005).

Over time (millions of years), the natural patterns of climate, hydrology, geology, soils, vegetation, and wildlife resulted in a rich natural diversity. Human cultural practices associated with modern civilization have drastically reduced the wildlife population and the extent of wildlife habitat and have greatly altered natural ecosystem processes, resulting in declining biodiversity. Presently, habitat loss (through agricultural and urban land use conversions) and invasive species continue to decrease the quantity and quality of wildlife habitat. Wildlife habitat restoration and management aim to restore and sustain certain levels of biodiversity.

Conservation and management of natural biodiversity involve maintaining environmental health and ecosystem stability. They increase the extent of native species (especially those indigenous to a particular site), endemic species (those that are known to occur only on a particular site), and rare, threatened, and endangered

species. Also, they decrease the extent of invasive species, which are a threat to natural diversity.

Use of local ecotypes for projects that enhance and restore wildlife habitat helps to maintain or increase natural diversity at a genetic level and helps to ensure restoration success because local ecotypes are adapted to local geophysical conditions. An ecotype is a population or group of populations of a particular species that is distinguished by unique morphological and/or physiological characteristics, infertile with other ecotypes and usually prevented from interbreeding with other ecotypes by ecological barriers (Barbour and others, 1987).

Rare species and species listed by the Federal Government and California as threatened and endangered occur throughout Butte County. State and federal laws pertain to certain land use practices that may impact endangered species. Migratory birds, such as waterfowl, shore birds, sandhill cranes, raptors, doves, and songbirds, and anadromous fish, such as sturgeon, Chinook salmon, and steelhead, move across State and national boundaries and are protected by Federal laws and policies enforced by the U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration. Resident species, such as quail, grouse, pheasant, wild turkey, rabbits, squirrels, black bear, mountain lion, wild pig, and deer, are protected by State laws and policies enforced by the California Department of Fish and Game. Lists of the wildlife in Butte County, including rare, threatened, and endangered species, are available from the California Department of Fish and Game and the U.S. Fish and Wildlife Service. Rare plants and plant conservation issues in California are well documented through a database-driven program (California Native Plant Society, 2001).

Social values affecting the conservation and management of natural diversity include recreation and education, which involve access to public lands and/or private clubs. Recreation involves wildlife-dependent activities, such as wildlife observation and photography, environmental education and interpretation, hunting and fishing, and hiking and camping (U.S. Fish and Wildlife Service, 2005). Butte County has many areas that offer opportunities for wildlife-dependent recreation and preservation of wildlife, including the Sacramento River National Wildlife Refuge, the Sacramento River Wildlife Area, Bidwell-Sacramento River State Park, the North Central Valley Wildlife Management Area (Llano Seco Unit), the Upper Butte Basin Wildlife Area, the Grey Lodge Wildlife Area, the Feather River Wildlife Area, the North Table Mountain Wildlife Area, the Coon Hollow Wildlife Area, the Big Chico Creek Ecological Preserve, the Butte Creek Canyon Ecological Preserve, the Butte Creek House Ecological Preserve, the Bechtel Stone Ridge Ranch Ecological Preserve, the Arroyo Chico Bidwell Ranch Preserve, Bidwell Park, Oroville Dam, the Plumas National Forest, and the Lassen National Forest. Increasing the quality and quantity of wildlife habitat can increase the opportunities for recreation and education and improve outdoor experiences related to public and private wildlife use.

Elements of wildlife habitat include water, food, and cover for rest, thermal regulation, and reproduction. Wildlife cover occurs in open environments, such as wetlands and grasslands and savannas (rangelands). It also occurs in open- to closed-canopy riparian and oak woodlands, hardwood-conifer and mixed conifer forests, and areas of chaparral. Food sources provide high-energy seeds and fruits and protein-rich grasses, legumes, herbaceous forbs, and leaves from woody plants. Wildlife species are selective throughout the year, reflecting their annual behavioral and physiological-energetic cycle (Raveling, 1979; Silveira, 1998; Taber and Dasmann, 1958). Herbaceous annual and perennial grasses and forbs, such as soft chess, annual ryegrass, wild oats, filaree, asters, mustards, lupines, and clovers (legumes), provide seeds for food and foliage for food and cover. Domestic crop grains, such as rice and wheat, also provide seeds and foliage for food and cover. Irrigated and dry pasture provides grasses and legumes. Trees and shrubs provide bark, branches, twigs, and foliage for food and cover and fruits, such as berries, acorns, and catkins,

for food. Coniferous plants provide cones for food and woody and green structure for cover. Soil properties affect plant growth and vigor and the distribution and patterns of vegetation; therefore, soils influence the nutritional and structural value of wildlife habitat.

Wetlands increase the diversity of wildlife habitat. They occur throughout Butte County as major riparian, marsh, and meadow habitat types or as spatial and/or temporal inclusions in the larger areas of other habitat types. There are a great variety of types of natural wetlands and species of wetland plants. Wetland plants are completely aquatic (submerged), partially aquatic (emergent, shoreline), or completely terrestrial. Wetlands consist of riparian (stream-side) flood plains, saturated meadows, shallow water intermittent pools and streams, and relatively permanent lakes. Intermittent wetlands form with cool-season rains in the valley and foothills and with rain and snowmelt in the mountains. Intermittent wetlands, such as vernal pools, are extremely productive and important for migratory birds and endangered species (Silveira, 1998). Besides wildlife habitat, wetlands provide temporary flood storage and improve water quality by filtering sediments. Wetland impoundments are constructed when depressions and channels are cut and levees, dams, and canals are built to hold and convey the water necessary to restore and manage habitat for waterfowl and other wildlife. Federal and State laws and policies apply to wetland construction and drainage. The U.S. Army Corp of Engineers and the California Department of Water Resources are enforcement agencies.

Soils are of fundamental importance to the conservation and management of wildlife habitat and must be considered before habitat restoration projects are implemented (Silveira and others, 2003). Riparian forests, freshwater wetlands, grasslands, woodlands, and forests occur in patterns that reflect geophysical features, such as geology, landforms, soils, topography, slope, surface and subsurface hydrology, and climate, as influenced by latitude and elevation. Soil properties, such as texture, depth to bedrock, a duripan, or gravel (restrictive layers), and chemistry, along with the landscape features (topography and slope), affect the growth and vigor of the plant species used by wildlife. Soils also affect the potential for habitat restoration and management.

Plant-soil relationships determine which species are adapted to specific site characteristics and conditions, ultimately determining vegetation and wildlife use (Silveira and others, 2003). It is important to restore and manage desirable wildlife habitat plants on suitable sites, that is, the sites to which the species are adapted. Invasive plant species, which decrease the quality and quantity of habitat, become extremely prolific and vigorous (weedy) in areas of highly productive, deep, well drained soils and less weedy in areas of saline-sodic, alkaline-acidic, and shallow soils. Therefore, soil properties affect the intensity of the vegetation management necessary to enhance and maintain wildlife habitat. Vegetation management, which includes grazing, burning, mowing, disking, applications of herbicide, and removal of invasive nonnative trees and shrubs, enhances and maintains wildlife habitat by directing plant succession to earlier, vigorous stages; improving the structure of wildlife cover; increasing plant digestibility and nutritional values; and decreasing the extent of undesirable weeds and invasive plants (Marty, 2005; Silveira, 1998).

Federal and State grants for wildlife habitat restoration projects on private and public lands are available through the U.S. Department of Agriculture, the U.S. Fish and Wildlife Service, the U.S. Bureau of Reclamation, the National Oceanic and Atmospheric Administration, the California Wildlife Conservation Board, and private organizations and foundations.

The relationship of landforms and soils to vegetation and wildlife habitat appears complex, but it can be comprehended with relative ease in obvious landscape patterns. Comparing the soil groups in this survey with those identified on the map in the "Reconnaissance Soil Survey of the Sacramento Valley, California" (USDA, 1915)

illustrates the enduring nature of these patterns. Soils develop in patterns across landforms (Smith and Verrill, 1998); plants grow in patterns strongly linked with soil groups and map units.

Plant-soil relationships affect the distribution and patterns of vegetation (Holland and Dains, 1990). Soil texture and profile development as they relate to the root zone of plants, depth to restrictive layers as it relates to root penetration and growth, the availability of water, and chemistry (salinity and sodicity and alkalinity and acidity) affect plant germination, plant growth and vigor, and ultimately the species that can survive in these edaphic (soil) conditions. The root zone is affected by the water-holding capacity, wetness, and permeability of the soils. Geology, landforms, soils, topographic features (such as depressions, swales, and slope), hydrology, and climate, as influenced by latitude, elevation, and slope aspect (which affects precipitation, minimum and maximum temperatures, cumulative heat days, frost days, and the snow line) affect the distribution of plant species, giving rise to various plant assemblages (plant communities), which are characterized by their plant species composition, frequency, density, and cover. The Butte County flora consists of more than 125 families, 676 genera, 1,890 species, and 133 varieties and subspecies, for a total of 2,023 plant taxa, which includes 458 non-natives and 77 plants listed by the California Native Plant Society as rare, threatened, or endangered in California and elsewhere (Oswald and Ahart, 1994). This flora occurs in 15 vegetation types described as California wildlife habitats (Mayer and Laudenslayer, 1988).

Charts A, B, and C and appendices A and B illustrate the relationship between the soils and wildlife habitats in the survey area. Following is a description of wildlife habitats (including selected wildlife species) within the context of soil-landscape groups from the survey. Refer to Major and Barbour (1988) for detailed descriptions of the vegetation.

Flood Plains Along the Sacramento and Feather Rivers

Valley and Foothill Riparian, Freshwater Marsh, Valley Oak Woodland, Annual Grassland, and walnut and almond orchards characterize the flood plains along the rivers in Butte County. In the Sacramento River meander belt portion of the flood plain, soils are young, coarse textured, very deep, and freely drained. In the meander belt, plant germination and growth and vegetation patterns are strongly affected by frequent overbank flooding, which results in scouring, erosion, and deposition. The flooding creates azonal layers of periodically reworked gravel, sand, and silt (mixed alluvium). While this portion of the flood plain is used for orchards, fragments of Valley Riparian Forest remain. This forest once dominated the area. River meander does not rework the stable portion of the flood plain, where the soils are older, medium textured, very deep, and well drained. This portion of the flood plain is affected by occasional flooding and is used for orchards, but it was historically dominated by Valley Oak Woodland. Germination patterns reflect ponding patterns, while seedling survival is dependent on depth to root-restricting gravel and the water table. Successful flood-plain and riparian habitat restoration must include detailed soil mapping to determine depth to the water table, which especially affects woody species survival and selection, and the presence of gravel, which limits root growth in woody species (Silveira and others, 2003).

Riparian and flood-plain wildlife habitats are characterized by a rich mosaic of vegetation, which forms closed- to open-canopy forests, woodlands, scrublands, and areas dominated by a variety of perennial and annual herbaceous plants. Forest and woodland understories range from relatively open areas of forbs, grasses, and sedges to impenetrable thickets of shrubs, blackberries, and vines.

Chart A.—Valley and Terrace Wildlife Habitats in Butte Area Soil Groups

General soil map unit	Kind of wildlife habitat						
	Valley & Foothill Riparian	Valley Oak Woodland	Fresh Emergent Wetland	Annual Grassland	Pasture	Cropland	Orchard-Vineyard
1. Parrot-Gianella-Farwell	X	X	X			X	X
2. Xerorthents, Tailings-Gianella	X	X	X				X
3. Lofgren-Blavo			X		X	X	
4. Esquon-Neerdobe			X			X	
5. Bosquejo-Galt						X	
6. Gridley Taxadjunct-Subaco Taxadjunct			X		X	X	
7. Olashes						X	X
8. Conejo-Almendra-Vina	Y	X			X		X
9. Haploxerolls-Durixerolls	Z				X	X	X
10. Redsluff-Redtough-Redswale				X			
11. Liveoak-Boga-Loemstone		Y			X		X
12. Eastbiggs-Duric Xerarents-Kimball		Y		X			X
13. Thompsonflat-Oroville-Vistarobles				X			

X indicates widespread distribution and/or dominant cover.
 Y indicates savanna or shrubland (widely spaced trees and shrubs).
 Z indicates limited distribution because of soil type or fire.

Chart B.—Foothill Wildlife Habitats in Butte Area Soil Groups

General soil map unit	Kind of wildlife habitat						
	Valley & Foothill Riparian	Annual Grassland	Blue Oak Woodland	Blue Oak-Foothill Pine	Chamise-Redshank Chaparral	Mixed Chaparral	Mixed Chaparral & Annual Grassland Montane Hardwood-Conifer
14. Palexerults-Rock Outcrop, Basalt-Coalcanyon		X	X				
15. Tuscan-Clearhayes-Typic Xerofluvents	X	X					
16. Lucksev-Butteside-Carhart		X	X				
17. Doemill-Jokerst		X	Y				
18. Xerorthents, Shallow-Typic Haploxeralfs-Doemill		X	Y	X	Z	X	
19. Dunstone-Loafercreek-Argonaut Taxadjunct		X	X				
20. Dunstone-Loafercreek-Oroshore		X		X		X	
21. Mounthope-Hartsmill				X		X	
22. Ultic Haploxeralfs, Thermic, High Terrace....		X	Y				
23. Flantly-Swedeflat-Parkshill			X	X		X	
24. Crystalhill-Oregongulch-Craigsaddle						X	
25. Rockstripe-Ultic Haploxeralfs, Mesic-Ultic Halpoxeralfs							X
26. Bigridge-Minniecreek						X	X

X indicates widespread distribution and/or dominant cover.

Y indicates savanna or shrubland (widely spaced trees and shrubs).

Z indicates limited distribution because of soil type or fire.

Chart C.—Mountain Wildlife Habitats in Butte Area Soil Groups

General soil map unit	Kind of wildlife habitat					
	Ponderosa Pine	Sierran Mixed Conifer	Ultramafic Vegetation	Montane Chaparral	Montane Riparian	Wet Meadow
27. Paradiso-Schlott-Tuscoll	X	X				
28. Mountyana-Beecee-Lydon		X				
29. Redbone		X				
30. Surnuf-Griffgulch-Typic Haploxeralfs, Magnesic	X	X	X			
31. Toadtown-Powellton-Rogerville		X				
32. Obstruction-Obstel-Bottlehill		X				
33. Islandbar-Featherfalls-Chawanakee		X				
34. Bonneyridge-Chawanakee-Lewisflat	Y	Z			Z	Z
35. Mudwash-Shakeridge-Timberisland		X				
36. Bolepile		X				
37. Powderhouse-McNair-Greenwell		X				
38. Dejonah-Stagpoint		X				Z
39. Haploxerands, Volcanic Till- Haploxerands, Granitic Till		X		Z		Z

X indicates widespread distribution and/or dominant cover.

Z indicates limited distribution because of soil type or fire.

Riparian and flood-plain trees include:

- arroyo willow
- boxelder
- California button-bush
- Fremont's cottonwood
- Goodding's black willow
- Northern California black walnut (feral hybrids with commercial English walnut)
- Oregon ash
- sandbar willow
- valley oak
- western sycamore
- white alder

Flood-plain shrubs include:

- blue elderberry
- California blackberry
- California manroot
- California pipevine
- California rose
- California wild grape
- coyote-brush
- Himalayan blackberry (invasive)
- hoary creek nettle
- mugwort
- mule's fat
- Oregon golden aster
- rose mallow
- virgin's bower
- western goldenrod

Herbaceous flood-plain plants include:

- alkali ryegrass (creeping wildrye)
- American black nightshade
- broad-leaved pepper-weed (invasive)
- clustered field sedge
- Johnson-grass (invasive)
- ripgut brome
- Santa Barbara sedge
- sharp-leaved fluellin (invasive)
- showy milkweed
- Sonoma hedge-nettle
- telegraph weed
- thorn-apple
- yellow star-thistle (invasive)
- yellow water-weed (invasive)

Cut banks, sandbars, gravel bars, and gravel beds are used by wildlife for nesting and spawning. Cut banks along the Sacramento River support the largest bank swallow colonies in California.

Animals use riparian habitats as breeding and wintering areas and as migration corridors, where the wildlife moves among various valley, foothill, and mountain habitats, depending on the season and the annual behavioral and physiological-energetic cycle of the animals.

Fishes include:

- American shad
- California roach
- Chinook salmon (winter run, spring run, fall and late fall run)
- green sturgeon
- hardhead
- hitch
- Pacific lamprey
- prickly sculpin
- riffle sculpin
- river lamprey
- Sacramento splittail
- Sacramento sucker
- Sacramento whitefish
- speckled dace
- steelhead
- striped bass
- threadfin shad
- western brook lamprey
- white sturgeon

Amphibians and reptiles include:

- bullfrog
- common garter snake
- gopher snake
- Pacific tree frog
- slider
- southern alligator lizard
- western fence lizard
- western pond turtle
- western rattlesnake

Birds include:

- acorn woodpecker
- American goldfinch
- American kestrel
- American white pelican
- Anna's hummingbird
- ash-throated flycatcher
- bald eagle
- bank swallow
- barn owl
- belted kingfisher
- Bewick's wren
- black-chinned hummingbird
- black-headed grosbeak
- black phoebe
- blue grosbeak
- brown creeper
- brown-headed cowbird
- Bullock's oriole
- bushtit
- California quail
- California towhee

Canada goose
Caspian tern
common goldeneye
common merganser
common moorhen
Cooper's hawk
double-crested cormorant
fox sparrow
great blue heron
great egret
great horned owl
hermit thrush
killdeer
lark sparrow
lazuli bunting
lesser goldfinch
lesser nighthawk
mallard
Nuttall's woodpecker
oak titmouse
orange-crowned warble
osprey
Pacific-slope flycatcher
purple finch
red-shouldered hawk
red-tailed hawk
ruby-crowned kinglet
song sparrow
spotted sandpiper
spotted towhee
Swainson's hawk
Swainson's thrush
tree swallow
turkey vulture
warbling vireo
western wood pewee
western yellow-billed cuckoo
white-breasted nuthatch
wild turkey
willow flycatcher
wood duck
yellow-breasted chat
yellow-rumped warbler
yellow warbler

Mammals include:

beaver
big free-tailed bat
black-tailed deer
bobacat
California myotis
California vole
coyote
Mexican free-tailed bat

- mountain lion
- pallid bat
- porcupine
- raccoon
- red bat
- ringtail
- river otter
- western gray squirrel
- wild pig

Northeast Sacramento Valley Flood Basins

Annual Grassland, Freshwater Marsh, and rice paddies characterize these flood basins. Hydric soils dominate the basins. They are distinguished by saturation and anaerobic conditions, ponding, a high shrink-swell potential, deep cracking, and a high content of clay. Plant growth and survival are limited to species adapted to wetland conditions. Few soil-related limitations affect the creation of ponds on this landscape.

Flood-basin wildlife habitats occur as areas of open water, emergent marshes, grasslands, and rice fields. They are dissected by willow-lined creeks, sloughs, and canals. Flood-basin plants and waste grains from rice harvests provide vital wildlife food and cover.

Flood-basin wetland plants include:

- arrowheads
- bulrushes
- burhead
- cattails
- hard-stemmed tule
- Goodding's black willow
- pale spike-rush
- pondweeds
- pricklegrass
- sedges
- smartweeds
- smooth spike-primrose
- square-stemmed spike-rush
- swamp timothy
- toad rush
- water-grass
- water-plantain

Goodding's black willow is adapted to and occurs in areas of clays and clay loams, typically adjacent to creeks, sloughs, canals, and ponds.

Flood-basin grassland plants include:

- alkali-mallow
- alkali ryegrass
- annual ryegrass (dominant)
- annual salt marsh aster
- bindweed (invasive)
- black mustard
- blue wild-rye
- broad-leaved pepper-weed (invasive)
- California aster
- clovers

common fiddleneck
 common spikeweed
 curly dock
 double-horned downingia
 dwarf pepper-grass
 Ferris' milk-vetch (rare)
 Johnson-grass (invasive)
 lupines
 meadow barley
 milk-thistle
 narrow-leaved milk-weed
 red-flowered vetch
 Scribner's grass
 valley gumplant
 water pygmyweed
 yellow-rayed goldfields
 wild radish

Mudflats form from drained marshes and rice fields. They provide vitally important feeding habitat for spring-staging shore birds.

Butte Basin and northeast Sacramento Valley wetlands provide vital winter and migration stopover habitats supporting some of the most abundant assemblages of migratory waterfowl in the valley. Peak populations reach 1.4 million ducks, geese, and swans, shore birds, and sandhill cranes. Canada goose, mallard, cinnamon teal, American bittern, white-faced ibis, red-tailed hawk, and northern harrier breed in flood-basin habitats.

Amphibians and reptiles include:

bullfrog
 common garter snake
 giant garter snake
 gopher snake
 western aquatic garter snake
 western pond turtle
 western yellow-bellied racer

Birds include:

American avocet
 American bittern
 American coot
 American goldfinch
 American pipit
 American wigeon
 bald eagle
 black-bellied plover
 black-crowned night heron
 black-neck stilt
 black tern
 Brewer's blackbird
 bufflehead
 cackling goose
 Canada goose
 cinnamon teal
 Clark's grebe
 common yellowthroat

dowitchers
dunlin
eared-grebe
gadwall
grasshopper sparrow
great blue heron
great egret
great horned owl
greater yellowlegs
green bittern
green-winged teal
herring gull
killdeer
lark sparrow
least bittern
lesser goldfinch
Lincoln's sparrow
loggerhead shrike
long-billed curlew
mallard
marsh wren
northern harrier
northern pintail
northern shoveler
Pacific white-fronted goose
peregrine falcon
pied-billed grebe
redhead
red-tailed hawk
red-winged blackbird
ring-billed gull
ring-necked duck
ring-necked pheasant
Ross' goose
ruddy duck
sandhill cranes
sandpipers
savanna sparrow
semipalmated plover
sharp-shinned hawk
snow goose
snowy egret
song sparrow
sora
tricolored blackbird
tundra swan
Virginia rail
western grebe
western meadowlark
whimbrel
white-crowned sparrow
white-faced ibis
white-tailed kite
Wilson's phalarope

wood duck
 yellow-headed blackbird
 yellow-rumped warbler

Mammals include:

beaver
 black-tailed jackrabbit
 coyote
 desert cottontail
 muskrat
 Norway rat

Northeast Sacramento Valley Alluvial Fans

Valley Oak Woodland and walnut and almond orchards distinguish the northeast Sacramento Valley alluvial fans. Valley Riparian Forest also provides wetland wildlife habitat. The soils are highly productive, deep, and well drained and have few limitations.

The valley alluvial fans are characterized by urban areas, almond and walnut orchards, and remnant stands of valley oak trees. Historically, Valley Oak Woodland dominated the alluvial fans, forming expansive closed-canopy woodlands to open savannas (with varying degrees of widely spaced oaks on the grassland). A large valley oak woodland remains in Chico.

Valley oak is the dominant tree. Common shrubs include:

blue elderberry
 California blackberry
 California wild rose
 poison oak

Common herbaceous plants include:

annual ryegrass
 black mustard
 clovers
 common fiddleneck
 filarees
 foxtail fescue
 lupines
 miner's lettuce
 soft chess
 wild radish
 yellow star-thistle (invasive)

Animal species overlap with those on similar adjacent habitats on flood plains, terraces, and foothills.

Fishes include:

California roach
 Chinook salmon (spring run)
 hardhead
 hitch
 Pacific lamprey
 prickly sculpin
 rainbow trout
 riffle sculpin

Sacramento sucker
Sacramento whitefish
speckled dace
steelhead

Amphibians and reptiles include:

common garter snake
gopher snake
western fence lizard
western skink
western toad

Birds include:

acorn woodpecker
American crow
American robin
barn owl
Bewick's wren
black-headed grosbeak
brown creeper
bushtit
California quail
Cooper's hawk
dark-eyed junco
European starling
fox sparrow
golden-crowned kinglet
great-horned owl
house finch
house sparrow
lark sparrow
mourning dove
northern mockingbird
oak titmouse
red-shouldered hawk
red-tailed hawk
ruby-crowned kinglet
sharp-shinned hawk
western kingbird
western screech-owl
western scrub jay
white-breasted nuthatch
white-crowned sparrow
yellow-billed magpie

Mammals include:

Botta's pocket gopher
black rat
California ground squirrel
coyote
deer mouse
feral house cat
gray fox
harvest mouse

house mouse
 opossum
 raccoon
 striped skunk
 Townsend mole
 vagrant shrew
 western gray squirrel

Southern Cascade and Northern Sierra Nevada Fan Terraces

Annual Grassland dominates this landscape, which also includes small areas of rice and almond and citrus orchards. The Southern Cascade Terrace gradually slopes from the foothills to the valley, while the Northern Sierra Nevada Fan Terraces form a rolling terrain. Mound-swale microtopography and ephemeral drainages occur throughout this landscape. The soils are very shallow to moderately deep, are underlain by a duripan, are seasonally saturated in winter by a high water table perched on the duripan, and are very dry in summer. These conditions limit plants to annual grasses and forbs and result in the extreme, alternating lush and harsh character of this landscape. Livestock grazing, particularly by cattle, plays a major role in the structure of grassland vegetation and may be used to improve native wildflower (forb) diversity and abundance and the quality and capacity of the wildlife habitat (Marty, 2005; Silveira, 1998). Prescribed fire can reduce the extent of medusa-head grass and improve the quality of livestock forage, native plant abundance, and wildlife habitat (Griggs, 2000).

Annual grasslands with vernal pools characterize the fan terraces. Vernal pools support a highly endemic flora and unique vegetation (Barbour and others, 2003; Holland and Dains, 1990). The plants in the vernal pools are considered wetland species and are specially adapted to survive the extreme conditions of the wet-dry cycle.

Vernal-pool plants include:

annual hairgrass
 Butte County meadowfoam (rare)
 cleistogamous spike-primrose
 coyote-thistle
 Douglas' pogogyne
 dwarf wooly-marbles
 folded downingia
 Fremont's goldfields
 Green's tuctoria (rare)
 Oregon wooly-marbles
 popcorn flowers
 rosy meadowfoam
 Sacramento Valley pogogyne
 smooth goldfields
 toothed downingia
 tricolored monkey flower
 valley vernal pool foxtail
 water buttercup
 white-flowered navarretia
 white meadowfoam
 white-tipped clover
 wooly meadowfoam
 yellow carpet

Grassland plants include:

- annual ryegrass
- bicolored lupine
- bluedicks
- Butte County golden clover (rare)
- butter and eggs
- field owl-clover
- filarees
- Fitch's spike-weed
- Fremont's tidy tips
- foxtail fescue
- hayfield tarweed
- lowland shooting-star
- Menzies' fiddleneck
- shining pepper-grass
- soft chess
- sticky tarweed
- Tehama navarretia
- veiny monardella (rare)
- wild oats
- yellow star-thistle (invasive)

Vernal pools are extremely productive wetlands that support an abundance of native invertebrates during wet, late winter and early spring periods. In fact, California vernal pools support the greatest diversity of fairy shrimp species per area on earth (Eriksen and Belk, 1999). Invertebrates and grasses are high-protein food sources for migratory waterfowl, shore birds, and sandhill cranes (Silveira, 1998).

Amphibians and reptiles include:

- gopher snake
- striped racer
- western rattlesnake
- western spadefoot

Birds include:

- American kestrel
- American pipit
- American wigeon
- burrowing owl
- cackling goose
- California horned lark
- Canada goose
- cliff swallow
- golden eagle
- greater yellowlegs
- green-winged teal
- killdeer
- loggerhead shrike
- long-billed curlew
- mallard
- mourning dove
- northern pintail
- prairie falcon
- red-tailed hawk

sandhill cranes
 savanna sparrow
 short-eared owl
 western bluebird
 western meadowlark

Mammals include:

black-tailed jackrabbit
 Botta's pocket gopher
 California ground squirrel
 coyote

Feather River Terraces

Valley Oak Woodland and fruit orchards characterize this landscape. Valley oak occurs in deep, well drained alluvial soils. The soils are productive, deep, and well drained and have few limitations.

Fruit, nut, and citrus orchards and scattered remnant stands of valley oak dominate the Feather River Terrace. Valley Oak Woodland, which formed closed-canopy stands to open savanna, historically dominated this landscape.

Common herbaceous plants include:

common fiddleneck
 fillarees
 foxtail fescue
 miner's lettuce
 soft chess
 wild oats

Cut banks along the Feather River support limited colonies of bank swallows.

Animal species overlap with those on similar adjacent habitats on flood plains and alluvial fans.

Amphibians and reptiles include:

common snake
 gopher snake
 western toad

Birds include:

American crow
 American goldfinch
 American kestrel
 American robin
 Bullock's oriole
 mourning dove
 northern flicker
 northern mockingbird
 red-tailed hawk
 white-crowned sparrow
 yellow-billed magpie

Mammals include:

Botta's pocket gopher
 California ground squirrel

coyote
townsend mole

Northern Sierra Nevada and Southern Cascade Foothills

Blue Oak Woodland, Blue Oak-Foothill Pine, Montane Hardwood Forest, and Mixed Chaparral dominate this landscape. Annual Grassland is limited to the lower elevations in blue oak savannas, and Chamise-Redshank Chaparral is limited to the Cohasset Ridge. Foothill Riparian Forest provides vital wetland wildlife habitat. Important soil characteristics, which affect plant growth and vigor and vegetation patterns, include depth to bedrock, content of rock fragments, available water capacity, slope, and parent material. The periodicity of wildfire plays a major role in plant succession and vegetation patch age and structure. Prescribed fire may be used to improve wildlife habitat (Taber and Dasmann, 1958) and provide protection from wildfire. Grazing to increase grassland diversity and the quality of wildlife habitat is a management consideration in Annual Grassland and Blue Oak Woodland habitats. Water developments for wildlife are limited by soil depth, slope, and the availability of water (seeps and springs) on upland sites.

An extremely rich and diverse mosaic of trees and shrubs characterizes foothill habitat, which forms open savannas to closed-canopy woodlands and open scrubland to interlocking shrub stands (chaparral). Woodland understory commonly forms dense, impenetrable thickets.

Foothill trees include:

bigleaf maple
blue oak (dominant)
California black oak
California buckeye
California laurel
canyon live oak (dominant)
Douglas-fir (higher elevations)
foothill pine (dominant)
incense cedar
interior live oak (dominant)
McNab cypress (ultramafic soils)
Oregon oak (limited)
Pacific madrone
ponderosa pine
redbud
valley oak (deeper soils)

Foothill shrubs include:

birch-leaved mountain-mahogany
buckbrush
bush monkey flower
California coffeeberry
California yerba santa
chamise
common manzanita
deerbrush
Fremont's silk-tassel
holly-leaf cherry
holly-leaf redberry
leather oak

Lemmon's ceanothus
 poison oak
 scrub oak
 toyon
 western spice bush
 whiteleaf manzanita

Herbaceous annuals on foothills are similar to those on the Southern Cascade and Northern Sierra Nevada fan terraces. At the lower western margins, they also include:

bird's eye gilia
 bitter-root
 California goldfields
 canyon dudleya
 Douglas' violet
 dwarf-stonecrop
 foothill gumplant
 foothill poppy
 Indian paintbrush
 Ithurriel's spear
 jewel-flower
 Kellogg's monkey-flower
 lace-pod
 Mariposa lily
 Menzies' fiddleneck
 mustang-mint
 naked buckwheat
 purple owl-clover
 royal larkspur
 seep monkey-flower
 serpentine phacelia
 Shasta meadowfoam
 sky lupine
 sticky navarretia
 Table Mountain meadowfoam
 tansy phacelia
 white meadowfoam
 wild onion
 woodlandstar

Dazzling spring wildflower displays may occur on Table Mountain in years with germinating fall rains, mild winters, and above-average rainfall in late winter and early spring.

Outcrops of lava flows, volcanic mudflows, basalt and metavolcanic rock outcrops, and diorite, gabbro, and quartz rocks provide cover and sites for perching, basking, nesting.

Foothill habitats provide vital breeding, winter, and migration corridor-stopover habitats, which support the most diverse assemblage of abundant resident and migratory animals in Butte County. The combination of dense and/or multilayered vegetation with open vegetation provides the highest quality wildlife habitat in the foothills, a result of diverse structure and edge effect (the contact zone of two or more habitats). The best example is general soil map unit 25, where large stands of Mixed Chaparral interlace with patches of Annual Grassland on shallow soils. General soil map unit 18 has patterns of an annual grassland matrix with small groves and widely spaced or individual blue oaks (a savanna form of Blue Oak Woodland) and has

discrete stands of foothill pine, hardwood trees, and shrubs, which may also be widely spaced (Blue Oak-Foothill Pine).

Resident species move among the various kinds of wildlife habitat in the foothills and among the habitats in the adjacent valley and mountains.

Fishes include:

- California roach
- Chinook salmon (spring run)
- hardhead
- hitch
- Pacific lamprey
- prickly sculpin
- rainbow trout
- rifle sculpin
- Sacramento sucker
- Sacramento whitefish
- speckled dace
- steelhead

Amphibians and reptiles include:

- California newt
- California slender salamander
- California whipsnake
- coast horned-lizard
- common garter snake
- common kingsnake
- ensatina
- foothill yellow-legged frog
- gopher snake
- night snake
- Pacific tree frog
- red-legged frog
- ringneck snake
- rubber boa
- sharp-tailed snake
- southern alligator lizard
- western fence lizard
- western pond turtle
- western rattlesnake
- western skink
- western spadefoot
- western terrestrial garter snake
- western whiptail
- western yellow-bellied racer

Birds include:

- American goldfinch
- American kestrel
- Anna's hummingbird
- ash-throated flycatcher
- band-tailed pigeon
- black-chinned hummingbird

black-throated gray warbler
blue-gray gnatcatcher
bushtit
California quail
California thrasher
canyon wren
Cassin's vireo
cedar waxwing
chipping sparrow
common raven
downy woodpecker
dusky flycatcher
fox sparrow
golden eagle
lesser goldfinch
MacGillivray's warbler
mourning dove
Nashville warbler
Nuttall's woodpecker
oak titmouse
orange-crowned warbler
Pacific-slope flycatcher
phainopepla
prairie falcon
red-tailed hawk
savanna sparrow
Say's phoebe
turkey vulture
warbling vireo
western bluebird
western screech-owl
western scrub jay
western wood-pewee
white-breasted nuthatch
wild turkey

Mammals include:

black bear
black-tailed deer
bobcat
Botta's pocket gopher
California ground squirrel
California kangaroo rat
California myotis and other bats
coyote
deer mouse
gray fox
long-tailed weasel
mink
mountain lion
striped skunk
wild pig

Southern Cascade and Northern Sierra Nevada Mountains

Sierran Mixed Conifer forests dominate the Butte County mountain landscape as a multilayered, closed-canopy forest. Ponderosa Pine, Montane-Hardwood Conifer forests, and limited Montane Chaparral also occur on this landscape. Montane Riparian and Wet Meadow provide vital wetland wildlife habitat. Soils that formed in material weathered from serpentine and granite support unique stands of vegetation and many endemic plants (Faber, 1997). Depth to bedrock, texture, slope, and parent material affect plant growth and vigor and the distribution of vegetation. The periodicity of wildfire and commercial forestry practices affect forest stand age, structure, and succession. Water developments for wildlife are limited by soil depth, slope, and the availability of water (seeps and springs) on upland sites.

Dominant trees of coniferous forests include:

- Douglas-fir
- incense cedar
- ponderosa pine
- sugar pine
- white fir

Ponderosa pine is abundant at the lower elevations and on south-facing slopes. Jeffery pine replaces ponderosa pine at the higher elevations and in ultramafic soils. Red fir occurs at the higher elevations, mixing with sugar pine and white fir.

Other forest trees include a mixture of (Hanson, 2003 and 2004):

- bigleaf maple
- California bay
- California black oak
- California hazelnut
- California nutmeg
- canyon live oak
- Pacific madrone
- mountain alder
- mountain dogwood
- tanoak
- western yew
- white alder

Understory forest shrubs include (Hanson, 2003 and 2004):

- bald-hip rose
- bitter cherry
- deerbrush
- greenleaf manzanita
- mountain misery
- mountain pink currant
- oceanspray or creambush
- pinemat ceanothus
- pinemat manzanita
- prostrate ceanothus
- Sierra chinquapin
- Sierra gooseberry
- tan oak
- True's manzanita
- whitethorn ceanothus

Montane chaparral is limited by fire; shrubs include (Hanson, 2003 and 2004):

- bitter cherry
- creeping snowberry
- greenleaf manzanita
- huckleberry oak
- Sierra chinquapin
- wedgeleaf ceanothus

At the lower elevations, herbaceous forest plants include (Hanson, 2003 and 2004):

- California puccoon
- chaparral honeysuckle
- cut-leaf butterweed
- dogbane
- Eastwood's fritillary
- fawn lily
- frosted Indian paintbrush
- gold back fern
- Hartweg's iris
- Hartweg's wild ginger
- Jepson's onion
- lobed violet
- maidenhair fern
- Mosquin's clarkia
- mustang-mint
- Pacific bleedinghearts
- Pacific hound's tongue
- Pacific starflower
- redribbons
- scarlet fritillary
- shining white-stemmed swertia
- slender bird's beak
- small flowered woodlandstar
- sticky bird's beak
- sword fern
- tall horkelia
- wavy-leaved paintbrush
- white-stemmed clarkia
- woodland strawberry

At the higher elevations, herbaceous forest plants include (Hanson, 2003 and 2004):

- bracken fern
- closed-lipped penstemon
- clustered lady's slipper
- creeping snowberry
- little prince's pine
- Lobb's nama
- Mildred's clarkia
- pipsisewa
- rattlesnake plantain
- Sierra laurel
- Sierra stickseed
- Washington lily
- western false Solomon's seal
- white-veined wintergreen

Outcrops of metavolcanic, ultramafic, and quartz diorite, lava flows, and andesitic mudflows provide cover and sites for perching, basking, and nesting.

Mountain wildlife habitat supports a variety of resident and migratory animals, which move across and use various adjacent mountain and foothill habitats.

Fishes include:

- brown trout
- Chinook salmon (spring run)
- hardhead
- rainbow trout
- Sacramento sucker
- speckled dace
- steelhead

Amphibians and reptiles include:

- California mountain kingsnake
- common garter snake
- gopher snake
- mountain yellow-legged frog
- western aquatic garter snake
- western rattlesnake
- western terrestrial garter snake

Birds include:

- American dipper
- American robin
- band-tailed pigeon
- blue grouse
- brown creeper
- calliope hummingbird
- Cassin's finch
- Cassin's vireo
- common raven
- dark-eyed junco
- dusky flycatcher
- evening grosbeak
- goshawk
- Hammond's flycatcher
- hermit warbler
- hermit thrush
- MacGillivray's warbler
- mountain bluebird
- mountain chickadee
- mountain quail
- Nashville warbler
- northern pygmy-owl
- northern saw-whet owl
- olive-sided flycatcher
- Pacific-slope flycatcher
- red-breasted nuthatch
- red crossbill
- spotted owl
- Steller's jay
- Swainson's thrush

varied thrush
 western tanager
 white-breasted nuthatch
 white-headed woodpecker
 Wilson's warbler

Mammals include:

black bear
 black-tailed deer
 California myotis and other bats
 chipmunks
 coyote
 Douglas squirrel
 dusky-footed woodrat
 fisher
 gray fox
 long-tailed weasel
 marten
 mink
 mountain lion
 northern flying squirrel
 Pacific shrew
 porcupine
 Sierra Nevada red fox
 spotted skunk
 vagrant shrew

Recreation

The soils of the survey area are rated in tables 15a and 15b according to limitations that affect their suitability for recreation. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses. *No limitations* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Limitations* with a value of more than 0.00 but less than 1.00 can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Limitations* with a value of 1.00 indicate that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00). Ratings of 0.00 are not displayed in the tables.

The ratings in the tables are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season

when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

The information in tables 15a and 15b can be supplemented by other information in this survey, for example, interpretations for building site development, construction materials, sanitary facilities, and water management.

Table 15a

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to bedrock or a cemented pan are the main concerns affecting the development of camp areas. The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

The management considerations for camp areas are as follows:

Bedrock depth.—Shallow depth to bedrock limits site preparation activities, such as shaping and leveling; may affect plant growth; and restricts the ability of the soil to support multiple-use recreational activities.

Depth to pan.—Depth to a cemented pan limits site preparation activities, such as shaping and leveling; may affect plant growth; and restricts the ability of the soil to support multiple-use recreational activities.

Dusty or very dusty.—Soils that have a silty surface layer and a xeric moisture regime are dusty when dry. Soils derived from volcanic ash also are dusty when dry.

Flooding.—In areas where the soils are subject to flooding, the development and performance of camp areas may be limited. Flooding also affects trafficability.

Fragments (less than 3").—Gravel (rock fragments less than 3 inches in diameter) in the surface layer is a concern. Development and maintenance of camp areas may be limited, and trafficability may be affected.

Fragments (greater than 3").—An excessive amount of rock fragments more than 3 inches in diameter in the surface layer is a concern. Development and maintenance of camp areas may be limited, and trafficability may be affected.

Fragments (greater than 10").—An excessive amount of stones and boulders (rock fragments more than 10 inches in diameter) on the soil surface may impede development and maintenance of camp areas.

Organic surface layer.—Soils in Unified class PT have a high content of organic matter and low strength. Trafficability is affected.

Permeability (Ksat).—The soil horizon with the minimum Ksat governs the rate of water movement through the whole soil. If this rate is low, the transmission of fluids into the soil (infiltration) and through the soil (percolation) is impeded. Water may be ponded for extended periods of time. Trafficability and plant growth are affected.

Ponding.—Ponding is the condition where standing water is on the soil surface for any period of time. Soils that are subject to ponding have restrictions that limit the installation and functioning of most land use applications. Trafficability may be affected.

Saturation.—In areas of soils that have a water table at a shallow depth, trafficability may be affected. Such areas are slow to drain and can become waterlogged and boggy during periods of heavy precipitation.

Slope.—Steep slopes impede trafficability of heavy machinery and limit the development of camp areas.

Surface clay.—Soils that have a clayey surface layer have a slow rate of water infiltration, are slippery and sticky when wet, and are slow to dry. Trafficability is affected, and compaction may inhibit the growth of common plants.

Surface EC.—Soils with high salinity have a reduced available water capacity and may have salinity toxicity, which restricts vigorous plant growth and hinders the reestablishment of vegetation in disturbed areas.

Surface sand fractions.—Soils that have a sandy surface layer are subject to blowing sand, are difficult to revegetate, are soft and loose, and are droughty. Trafficability is affected, and the ability of the soil to support multiple-use recreational activities is limited.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The ratings are based on the soil properties that affect the ease of developing picnic areas and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of picnic areas. For good trafficability, the surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

The management considerations for picnic areas are as follows:

Bedrock depth.—Shallow depth to bedrock limits site preparation activities, such as shaping and leveling; affects plant growth; and restricts the soil's ability to support multiple-use recreational activities.

Depth to pan.—Depth to a cemented pan limits site preparation activities, such as shaping and leveling; affects plant growth; and restricts the soil's ability to support multiple-use recreational activities.

Dusty or very dusty.—Soils that have a silty surface layer and a xeric moisture regime are dusty when dry. Soils derived from volcanic ash also are dusty.

Fragments (less than 3").—Gravel (rock fragments less than 3 inches in diameter) in the surface layer is a concern. Development and maintenance of picnic areas may be limited, and trafficability may be affected.

Fragments (greater than 3").—An excessive amount of rock fragments more than 3 inches in diameter in the surface layer is a concern. Development and maintenance of picnic areas may be limited, and trafficability may be affected.

Fragments (greater than 10").—An excessive amount of stones and boulders (rock fragments more than 10 inches in diameter) on the soil surface may impede development and maintenance of picnic areas.

Frequent flooding.—Flooding limits the use and management of the soils as recreational areas. Trafficability is affected.

Organic surface layer.—Soils in Unified class PT have a high content of organic matter and low strength. Trafficability is affected.

Permeability (Ksat).—The soil horizon with the minimum Ksat governs the rate of water movement through the whole soil. If this rate is low, the transmission of fluids into the soil (infiltration) and through the soil (percolation) is impeded. Water may be ponded for extended periods of time. Trafficability and plant growth are affected.

Ponding.—Ponding is the condition where standing water is on the soil surface for any period of time. Soils that are subject to ponding have restrictions that limit the installation and functioning of most land use applications. Trafficability may be affected.

Saturation.—In areas of soils that have a water table at a shallow depth, trafficability may be affected. Such areas are slow to drain and can become waterlogged and boggy during periods of heavy precipitation.

Slope.—Steep slopes impede trafficability of heavy machinery and limit the development of picnic areas.

Surface clay.—Soils that have a clayey surface layer have a slow rate of water infiltration, are slippery and sticky when wet, and are slow to dry. Trafficability may be affected, and compaction may hinder the growth of common plants.

Surface EC.—Soils with high salinity have a reduced available water capacity and may have salinity toxicity, which restricts vigorous plant growth and hinders the reestablishment of vegetation in disturbed areas.

Surface sand fractions.—Soils that have a sandy surface layer are subject to blowing sand, are difficult to revegetate, are soft and loose, and are droughty. Trafficability is affected, and the ability of the soil to support multiple-use recreational activities is limited.

Surface SAR.—In areas where the soils have a high sodium adsorption ratio, plant growth may be restricted. The reestablishment of vegetation is limited in disturbed areas.

Playgrounds require soils that are nearly level, are free of stones, and can withstand intensive foot traffic. The ratings are based on the soil properties that affect the ease of developing playgrounds and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of playgrounds. For good trafficability, the surface of the playgrounds should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

The management considerations for playgrounds are as follows:

Bedrock depth.—Shallow depth to bedrock limits site preparation activities, such as shaping and leveling; affects plant growth; and restricts the soil's ability to support multiple-use recreational activities.

Depth to pan.—Depth to a cemented pan limits site preparation activities, such as shaping and leveling; affects plant growth; and restricts the soil's ability to support multiple-use recreational activities.

Dusty or very dusty.—Soils that have a silty surface layer and a xeric moisture regime are dusty when dry. Soils derived from volcanic ash also are dusty.

Fragments (greater than 3").—An excessive amount of rock fragments more than 3 inches in diameter in the surface layer is a concern. Development and maintenance of playgrounds may be limited, and trafficability may be affected.

Fragments (greater than 10").—An excessive amount of stones and boulders (rock fragments more than 10 inches in diameter) on the soil surface may impede development and maintenance of playgrounds.

Occasional flooding.—Flooding limits the use and management of the soils as recreational areas. Trafficability is affected.

Organic surface layer.—Soils in Unified class PT have a high content of organic matter and low strength. Trafficability is affected.

Permeability (Ksat).—The soil horizon with the minimum Ksat governs the rate of water movement through the whole soil. If this rate is low, the transmission of fluids into the soil (infiltration) and through the soil (percolation) is impeded. Water may be ponded for extended periods of time. Trafficability and plant growth are affected.

Ponding.—Ponding is the condition where standing water is on the soil surface for any period of time. Soils that are subject to ponding have restrictions that limit the installation and functioning of most land use applications. Trafficability may be affected.

Saturation.—In areas of soils that have a water table at a shallow depth, trafficability may be affected. Such areas are slow to drain and can become waterlogged and boggy during periods of heavy precipitation.

Slope.—Steep slopes impede site preparation activities, such as shaping and leveling, and restrict the ability of the soil to support multiple-use recreational activities.

Surface clay.—Soils that have a clayey surface layer have a slow rate of water infiltration, are slippery and sticky when wet, and are slow to dry. Trafficability may be affected, and compaction may hinder the growth of common plants.

Surface EC.—Soils with high salinity have a reduced available water capacity and may have salinity toxicity, which restricts vigorous plant growth and hinders the reestablishment of vegetation in disturbed areas.

Surface fragments (less than 3").—Gravel (rock fragments less than 3 inches in diameter) in the surface layer is a concern. Development and maintenance of playgrounds may be limited, and trafficability may be affected.

Surface sand fractions.—Soils that have a sandy surface layer are subject to blowing sand, are difficult to revegetate, are soft and loose, and are droughty. Trafficability is affected, and the ability of the soil to support multiple-use recreational activities is limited.

Surface SAR.—In areas where the soils have a high sodium adsorption ratio, plant growth may be restricted. The reestablishment of vegetation is limited in disturbed areas.

Table 15b

Paths and trails for hiking and horseback riding should require little or no slope modification through cutting and filling. The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

The management considerations for paths and trails are as follows:

Dusty or very dusty.—Soils that have a silty surface layer and a xeric moisture regime are dusty when dry. Soils derived from volcanic ash also are dusty.

Fragments (greater than 3").—An excessive amount of rock fragments more than 3 inches in diameter in the surface layer is a concern. Development and maintenance of paths and trails may be limited, and trafficability may be affected.

Fragments (greater than 10").—An excessive amount of stones and boulders (rock fragments more than 10 inches in diameter) on the soil surface may impede development and maintenance of paths and trails.

Frequent flooding.—Flooding limits the use and management of the soils as recreational areas. Trafficability is affected.

K factor and slopes.—Soils with a high K factor and steep slopes are susceptible to erosion in areas used for paths and trails. Practices that help to control water erosion may be needed.

Organic surface layer.—Soils in Unified class PT have a high content of organic matter and low strength. Trafficability is affected.

Ponding.—Ponding is the condition where standing water is on the soil surface for any period of time. Soils that are subject to ponding have restrictions that limit the installation and functioning of most land use applications. Trafficability may be affected.

Saturation.—In areas of soils that have a water table at a shallow depth, trafficability may be affected. Such areas are slow to drain and can become waterlogged and boggy during periods of heavy precipitation.

Slope.—Steep slopes impede site preparation activities, such as shaping and leveling, and restrict the ability of the soil to support multiple-use recreational activities.

Surface clay.—Soils that have a clayey surface layer have a slow rate of water infiltration, are slippery and sticky when wet, and are slow to dry. Trafficability may be affected, and compaction may hinder the growth of common plants.

Surface fragments (less than 3").—Gravel (rock fragments less than 3 inches in diameter) in the surface layer is a concern. Development and maintenance of paths and trails may be limited, and trafficability may be affected.

Surface sand fractions.—Soils that have a sandy surface layer are subject to blowing sand, are difficult to revegetate, are soft and loose, and are droughty. Trafficability is affected, and the ability of the soil to support multiple-use recreational activities is limited.

Off-road motorcycle trails require little or no site preparation. They are not covered with surfacing material or vegetation. Considerable compaction of the soil material is likely. The ratings are based on the soil properties that influence erodibility, trafficability, dustiness, and the ease of revegetation. These properties are stoniness, slope, depth to a water table, ponding, flooding, and texture of the surface layer.

The management considerations for off-road motorcycle trails are as follows:

Dusty or very dusty.—Soils that have a silty surface layer and a xeric moisture regime are dusty when dry. Soils derived from volcanic ash also are dusty.

Frequent flooding.—Flooding limits the use and management of the soils as recreational areas. Trafficability is affected.

Organic surface layer.—Soils in Unified class PT have a high content of organic matter and low strength. Trafficability is affected.

Ponding.—Ponding is the condition where standing water is on the soil surface for any period of time. Soils that are subject to ponding have restrictions that limit the installation and functioning of most land use applications. Trafficability may be affected.

Saturation.—In areas of soils that have a water table at a shallow depth, trafficability may be affected. Such areas are slow to drain and can become waterlogged and boggy during periods of heavy precipitation.

Slope.—Steep slopes impede site preparation activities, such as shaping and leveling, and restrict the ability of the soil to support multiple-use recreational activities.

Surface clay.—Soils that have a clayey surface layer have a slow rate of water infiltration, are slippery and sticky when wet, and are slow to dry. Trafficability may be affected, and compaction may hinder the growth of common plants.

Surface fragments (less than 3").—Gravel (rock fragments less than 3 inches in diameter) in the surface layer is a concern. Development and maintenance of off-road motorcycle trails may be limited, and trafficability may be affected.

Surface fragments (greater than 3").—An excessive amount of rock fragments more than 3 inches in diameter in the surface layer is a concern. Development and maintenance of off-road motorcycle trails may be limited, and trafficability may be affected.

Surface fragments (greater than 10").—An excessive amount of stones and boulders (rock fragments more than 10 inches in diameter) on the soil surface may impede development and maintenance of off-road motorcycle trails.

Surface sand fractions.—Soils that have a sandy surface layer are subject to blowing sand, are difficult to revegetate, are soft and loose, and are droughty. Trafficability is affected, and the ability of the soil to support multiple-use recreational activities is limited.

Areas used for *lawns, landscaping, and golf fairways* require soils on which turf and ornamental trees and shrubs can be established and maintained. Such areas are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer. The suitability of the soil for traps, tees, roughs, and greens is not considered in the ratings.

The management considerations for lawns, landscaping, and golf fairways are as follows:

AWC.—Soils with a low available water capacity are droughty. This condition restricts plant growth and the establishment of grasses, shrubs, and trees.

Bedrock depth.—Shallow depth to bedrock limits the volume of soil that can be occupied by plant roots and may restrict plant growth.

Clay in surface.—Soils that have a clayey surface layer have a slow rate of water infiltration and are subject to compaction. The growth of grass and ornamental plantings may be limited. Trafficability may also be affected.

Depth to pan.—Shallow soils have a reduced water-holding capacity and restricted percolation rates. Plant growth may be affected.

Flooding.—In areas that are subject to more than rare flooding, trafficability may be affected.

Fragments (greater than 3").—An excessive amount of rock fragments more than 3 inches in diameter in the surface layer is a concern. Development and maintenance may be limited, and trafficability may be affected.

Fragments (gravel size).—Gravel (rock fragments less than 3 inches in diameter) in the surface layer is a concern. Maintenance and trafficability may be affected.

Loamy coarse sand surface.—Soils that have a sandy surface layer are subject to blowing sand, are difficult to revegetate, are soft and loose, and are droughty. Trafficability is affected, and the ability of the soil to support multiple-use recreational activities is limited.

Organic surface layer.—Soils in which the surface layer has a high content of organic matter have low strength. Trafficability is affected.

Ponding.—Ponding is the condition where standing water is on the soil surface for any period of time. Soils that are subject to ponding have restrictions that limit the installation and functioning of most land use applications. Trafficability may be affected.

Saturation.—In areas of soils that have a water table at a shallow depth, plant growth and trafficability may be affected. Such areas are slow to drain and can become waterlogged and boggy during periods of heavy precipitation.

Slope.—Steep slopes impede the use of heavy machinery.

Surface EC.—Soils with high salinity have a reduced available water capacity and may have salinity toxicity, which restricts vigorous plant growth.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the data in the tables described under the heading "Soil Properties."

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section.

Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about particle-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 7 feet of the surface, soil wetness, depth to a water table, ponding, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, reclamation material, roadfill, and topsoil; plan structures for water management; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Tables 16a and 16b show the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, and shallow excavations.

The ratings in the tables are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *No limitations* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Limitations* with a value of more than 0.00 but less than 1.00 can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Limitations* with a value of 1.00 indicate that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00). Ratings of 0.00 are not displayed in the tables.

Table 16a

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost

penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table (saturation), ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table (saturation), ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

The management considerations for dwellings without basements are as follows:

Bedrock (hard).—Shallow depth to hard bedrock limits site preparation activities, such as shaping and leveling, and affects the ease and depth of excavation.

Bedrock (soft).—Shallow depth to soft bedrock limits site preparation activities, such as shaping and leveling, and affects the ease and depth of excavation.

Flooding.—In areas that are subject to flooding, the construction and functioning of buildings is limited.

Fragments (greater than 3").—Rock fragments more than 3 inches in diameter impede the workability of the soil and restrict the use of heavy machinery.

Organic matter.—Soils in Unified class PT, OL, or OH have a high content of organic matter and low strength and are hard to compact.

Pan (thick).—Depth to a thick cemented pan limits site preparation activities, such as shaping and leveling, and affects the ease and depth of excavation.

Ponding.—Ponding is the condition where standing water is on the soil surface for any period of time. Ponding restricts the installation and functioning of most land use applications.

Saturation.—In areas of soils that have a water table at a shallow depth, the ability of the soil to support a load may be affected. Such areas are slow to drain and can become waterlogged and boggy during periods of heavy precipitation.

Shrink-swell (LEP).—Excessive shrinking and swelling in the thickest layer between depths of 25 and 100 centimeters can result in shifting of building foundations, cracking of flooring slabs, and buckling of roadways.

Slope.—Steep slopes impede the use of heavy machinery and affect the ease and amount of excavation.

Thin pan.—Depth to a thin cemented pan limits site preparation activities, such as shaping and leveling, and affects the ease and depth of excavation.

The management considerations for dwellings with basements are as follows:

Bedrock (hard).—Shallow depth to hard bedrock limits site preparation activities, such as shaping and leveling, and affects the ease and depth of excavation.

Bedrock (soft).—Shallow depth to soft bedrock limits site preparation activities, such as shaping and leveling, and affects the ease and depth of excavation.

Fragments (greater than 3").—Rock fragments more than 3 inches in diameter impede the workability of the soil and restrict the use of heavy machinery.

Frequent or occasional flooding.—In areas that are subject to flooding, the construction and functioning of buildings is limited.

Organic matter.—Soils in Unified class PT, OL, or OH have a high content of organic matter and low strength and are hard to compact.

Pan (thick).—Depth to a thick cemented pan limits site preparation activities, such as shaping and leveling, and affects the ease and depth of excavation.

Pan (thin).—Depth to a thin cemented pan limits site preparation activities, such as shaping and leveling, and affects the ease and depth of excavation.

Ponding.—Ponding is the condition where standing water is on the soil surface for

any period of time. Ponding restricts the installation and functioning of most land use applications.

Saturation.—In areas of soils that have a water table at a shallow depth, the ability of the soil to support a load may be affected. Such areas are slow to drain and can become waterlogged and boggy during periods of heavy precipitation.

Shrink-swell (LEP).—Excessive shrinking and swelling in the thickest layer between depths of 25 and 150 centimeters can result in shifting of building foundations and cracking of basements.

Slope.—Steep slopes impede the use of heavy machinery and affect the ease and amount of excavation.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table (saturation), ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table (saturation), ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

The management considerations for small commercial buildings are as follows:

Bedrock (hard).—Shallow depth to hard bedrock limits site preparation activities, such as shaping and leveling, and affects the ease and depth of excavation.

Bedrock (soft).—Shallow depth to soft bedrock limits site preparation activities, such as shaping and leveling, and affects the ease and depth of excavation.

Flooding.—In areas that are subject to flooding, the construction and functioning of buildings is limited. Flooding also affects the amount and ease of excavation.

Fragments (greater than 3").—Rock fragments more than 3 inches in diameter impede the workability of the soil and restrict the use of heavy machinery.

Organic matter.—Soils in Unified class PT, OL, or OH have a high content of organic matter and low strength and are hard to compact.

Pan (thick).—Depth to a thick cemented pan limits site preparation activities, such as shaping and leveling, and affects the ease and depth of excavation.

Ponding.—Ponding is the condition where standing water is on the soil surface for any period of time. Ponding restricts the installation and functioning of most land use applications.

Saturation.—In areas of soils that have a water table at a shallow depth, the ability of the soil to support a load may be affected. Such areas are slow to drain and can become waterlogged and boggy during periods of heavy precipitation.

Shrink-swell (LEP).—Excessive shrinking and swelling in the thickest layer between depths of 25 and 100 centimeters can result in shifting of building foundations, cracking of flooring slabs, and buckling of roadways.

Slope.—Steep slopes impede the use of heavy machinery and affect the ease and amount of excavation.

Thin pan.—Depth to a thin cemented pan limits site preparation activities, such as shaping and leveling, and affects the ease and depth of excavation.

Table 16b

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are

based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table (saturation), ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table (saturation), and ponding.

The management considerations for local roads and streets are as follows:

AASHTO GI (soil strength).—Soils with a high AASHTO group index number (GIN) have low strength, which affects the traffic-supporting capacity of the soil. This condition is only partially restrictive if the clay mineralogy is kaolinitic.

Bedrock (hard).—Shallow depth to hard bedrock limits site preparation activities, such as shaping and leveling, and affects the ease of excavation and grading for the construction of roads and streets.

Bedrock (soft).—Shallow depth to soft bedrock limits site preparation activities, such as shaping and leveling, and affects the ease of excavation and grading for the construction of roads and streets.

Flooding.—Flooding can damage roads and streets.

Fragments (greater than 3").—Rock fragments more than 3 inches in diameter impede the workability of the soil and restrict the use of heavy machinery.

Pan (thick).—Depth to a thick cemented pan limits site preparation activities, such as shaping and leveling, and affects the ease and depth of excavation.

Saturation.—In areas of soils that have a water table at a shallow depth, the ability of the soil to support a load may be affected. The ease of excavation and grading may also be affected. Such areas can become waterlogged and boggy during periods of heavy precipitation and are slow to drain.

Shrink-swell (LEP).—Excessive shrinking and swelling in the thickest layer between depths of 25 and 100 centimeters can result in the buckling of roadways.

Slope.—Steep slopes impede the use of heavy machinery and affect the ease of excavation and grading.

Thin pan.—Depth to a thin cemented pan limits site preparation activities, such as shaping and leveling, and affects the ease and depth of excavation.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the potential for the caving of cutbanks. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table (saturation), flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the potential for the caving of cutbanks.

The management considerations for shallow excavations are as follows:

Caving potential.—Because of the texture of the soil, the potential for the caving of cutbanks is high. Extreme caution should be exercised around cutbanks to prevent injury resulting from cave-ins.

Bedrock (hard).—Shallow depth to hard bedrock limits site preparation and affects the ease of digging, filling, and compacting.

Bedrock (soft).—Shallow depth to soft bedrock limits site preparation and affects the ease of digging, filling, and compacting.

Fragments (greater than 3").—Rock fragments more than 3 inches in diameter impede the workability of the soil; affect the ease of digging, filling, and compacting; and restrict the use of heavy machinery.

Frequent or occasional flooding.—Flooding may restrict the periods when excavations can be made.

Organic matter (PT, OH, OL) below 20".—Soils in Unified class PT, OH, or OL have a high content of organic matter and low strength, which may influence the potential for the caving of cutbanks.

Pan (thick).—Depth to a thick cemented pan affects the ease of digging, filling, and compacting.

Pan (thin).—Depth to a thin cemented pan affects the ease of digging, filling, and compacting.

Ponding.—Ponding is the condition where standing water is on the soil surface for any period of time. Ponding restricts the installation and functioning of most land use applications and may limit the period when excavations can be made.

Saturation.—In areas of soils that have a water table at a shallow depth, the period when excavations can be made may be restricted. Such areas can become waterlogged and boggy during periods of heavy precipitation and are slow to drain.

Slope.—Steep slopes restrict the use of heavy machinery.

Sanitary Facilities

Tables 17a and 17b show the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, sanitary landfills, and daily cover for landfill. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *No limitations* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Limitations* with a value of more than 0.00 but less than 1.00 can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Limitations* with a value of 1.00 indicate that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00). Ratings of 0.00 are not displayed in the tables.

Table 17a

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability (Ksat), depth to a water table (saturation), ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

The management considerations for septic tank absorption fields are as follows:

Depth to bedrock.—The depth to bedrock affects the construction, installation, and functioning of septic tank absorption fields and affects other site applications. Shallow

soils have a limited absorption capacity and have biologically active zones through which waste materials can percolate. If these soils are used as filter fields, environmental and health risks should be considered.

Depth to pan.—Depth to a cemented pan affects the construction, installation, and functioning of septic tank adsorption fields and other site applications. Shallow soils have a limited absorption capacity and have biologically active zones through which waste materials can percolate. If these soils are used as filter fields, environmental and health risks should be considered.

Flooding, rare flooding, or very rare flooding.—Flooding can transport waste offsite and pollute surface waters. Flooding limits the use and management of the soil for sanitary facilities.

Fragments (greater than 3").—Rock fragments larger than 3 inches in diameter impede the workability of the soil and restrict the use of heavy machinery during construction of absorption fields.

Permeability greater than 6"/hr.—The soil horizon with the maximum Ksat governs the leaching and seepage potential of the soil. If this rate is high, the transmission of fluids through the soil is unimpeded and leaching and seepage may affect environmental, health, and performance considerations.

Permeability less than 0.6"/hr; permeability from 0.6 to 2"/hr.—The soil horizon with the minimum Ksat governs the rate of water movement through the whole soil. If this rate is low, the transmission of fluids into and through the soil is impeded and runoff, infiltration, and percolation of pollutants may affect environmental, health, and performance considerations.

Ponding.—Ponding is the condition where standing water is on the soil surface for any period of time. Ponding limits the installation and functioning of most land use applications.

Saturation.—Soils that have a water table at a shallow depth may become waterlogged during periods of heavy precipitation and are slow to drain. The contamination of ground water is a concern in areas of these soils.

Seepage in bottom layer.—The Ksat in the bottom layer of the soil governs the leaching and seepage potential of the soil. If this rate is high, the transmission of fluids through the soil and underlying materials is unimpeded. As a result, leaching and seepage may affect environmental, health, and performance considerations.

Slope.—Steep slopes affect the transmission of fluids through the soil. As a result, piping or seepage may affect environmental, health, and performance considerations.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, rock fragments larger than 3 inches in diameter, and content of organic matter.

Soil permeability (Ksat) is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a permeability rate of more than 2 inches per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and

the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

The management considerations for sewage lagoons are as follows:

Bedrock (hard).—Shallow depth to hard bedrock affects the construction, installation, and functioning of sewage lagoons.

Bedrock (soft).—Shallow depth to soft bedrock affects the construction, installation, and functioning of sewage lagoons.

Depth to pan.—Depth to a cemented pan affects the construction, installation, and functioning of sewage lagoons.

Flooding.—Flooding can transport waste offsite and pollute surface waters. Flooding limits the use and management of the soil for sanitary facilities.

Fragments (greater than 3").—Rock fragments larger than 3 inches in diameter impede the workability of the soil and restrict the use of heavy machinery.

Permeability greater than 2"/hr; permeability 0.6 to 2"/hr.—The soil horizon with the maximum Ksat governs the leaching and seepage potential of the soil. If this rate is high, the transmission of fluids through the soil is unimpeded and leaching and seepage may affect environmental, health, and performance considerations.

Ponding.—Ponding is the condition where standing water is on the soil surface for any period of time. Ponding limits the installation and functioning of most land use applications.

Saturation.—Soils that have a water table at a shallow depth may become waterlogged during periods of heavy precipitation and are slow to drain. The contamination of ground water is a concern in areas of these soils.

Slope.—Steep slopes impede site preparation and construction and restrict the size and shape of the lagoon.

Table 17b

A trench sanitary landfill is an area where solid waste is placed in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil excavated at the site. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. The ratings in the table are based on the soil properties that affect the risk of pollution, the ease of excavation, trafficability, and revegetation. These properties include permeability, depth to bedrock or a cemented pan, depth to a water table, ponding, slope, flooding, texture, stones and cobbles, highly organic layers, soil reaction, and content of salts and sodium. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, onsite investigation may be needed.

Hard, nonrippable bedrock, fractured bedrock, or highly permeable strata in or directly below the proposed trench bottom can affect the ease of excavation and the hazard of ground-water pollution. Slope affects construction of the trenches and the movement of surface water around the landfill. It also affects the construction and performance of roads in areas of the landfill.

Soil texture and consistence affect the ease with which the trench is dug and the ease with which the soil can be used as daily or final cover. They determine the workability of the soil when dry and when wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and are difficult to place as a uniformly thick cover over a layer of refuse.

The soil material used as the final cover for a trench landfill should be suitable for plants. It should not have excess sodium or salts and should not be too acid. The surface layer generally has the best workability, the highest content of organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

The management considerations for trench sanitary landfills are as follows:

Clay or silty clay; clay loam, silty clay, silty clay loam.—Clayey soils may become sticky when wet and are difficult to spread and compact. This condition is only partially restrictive if the clay mineralogy is kaolinitic.

Depth to thin cemented pan.—Depth to a cemented pan may limit the construction of the landfill and can affect environmental and health considerations.

Flooding.—Flooding can transport agricultural waste offsite and pollute surface waters. Flooding limits the use and management of the soil for sanitary facilities.

Fragments (3-10").—Cobbles (rock fragments 3 to 10 inches in diameter) impede the workability of the soil and restrict the use of heavy machinery. They also affect site reclamation.

Lithic or paralithic bedrock.—Shallow soils have a limited absorption capacity and have biologically active zones through which waste materials can percolate. If these soils are used as sites for trench sanitary landfills, environmental and health risks should be considered.

Organic matter.—Soils in Unified class PT, OH, or OL have a high content of organic matter and low strength, which may affect the use of heavy machinery.

Ponding.—Ponding is the condition where standing water is on the soil surface for any period of time. Ponding limits the installation and functioning of most land use applications.

Sandy textures.—Sandy soils are subject to caving and are droughty. The establishment of vegetative cover is difficult in areas of these soils.

Saturation.—Soils that have a water table at a shallow depth may become waterlogged during periods of heavy precipitation and are slow to drain. The contamination of ground water is a concern in areas of these soils.

Seepage in bottom layer.—The Ksat in the bottom layer of the soil governs the leaching and seepage potential of the soil. If this rate is high, the transmission of fluids through the soil and underlying materials is unimpeded. As a result, leaching and seepage may affect environmental, health, and performance considerations.

Slope.—Steep slopes affect the transmission of fluids through the soil. As a result, piping or seepage may affect environmental, health, and performance considerations.

In an *area sanitary landfill*, solid waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site. A final cover of soil material at least 2 feet thick is placed over the completed landfill. The ratings in the table are based on the soil properties that affect trafficability and the risk of pollution. These properties include flooding, permeability (Ksat), depth to a water table (saturation), ponding, slope, and depth to bedrock or a cemented pan.

Flooding is a serious problem because it can result in pollution in areas downstream from the landfill. If permeability is too rapid or if fractured bedrock, a fractured cemented pan, or the water table is close to the surface, the leachate can contaminate the water supply. Slope is a consideration because of the extra grading required to maintain roads in the steeper areas of the landfill. Also, leachate may flow along the surface of the soils in the steeper areas and cause difficult seepage problems.

The management considerations for area sanitary landfills are as follows:

Bedrock depth.—Shallow depth to bedrock may restrict the construction and installation of the landfill and can result in environmental and health risks.

Depth to pan.—Depth to a cemented pan may restrict the construction and installation of the landfill and can result in environmental and health risks.

Ponding.—Ponding is the condition where standing water is on the soil surface for any period of time. Ponding limits the installation and functioning of most land use applications.

Saturation.—Soils that have a water table at a shallow depth may become waterlogged during periods of heavy precipitation and are slow to drain. The contamination of ground water is a concern in areas of these soils.

Seepage.—The soil horizon with the maximum Ksat governs the leaching and seepage potential of the soil. If this rate is high, the transmission of fluids into and through the soil is unimpeded. As a result, leaching and seepage may affect environmental, health, and performance considerations.

Slope.—Steep slopes impede the use of heavy machinery and can limit the reclamation of borrow sites.

Very rare flooding, rare flooding, occasional flooding, frequent flooding.—Flooding can transport waste offsite and pollute surface waters. Flooding limits the use and management of the soil for sanitary facilities.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste. The ratings in the table also apply to the final cover for a landfill. They are based on the soil properties that affect workability, the ease of digging, and the ease of moving and spreading the material over the refuse daily during wet and dry periods. These properties include soil texture, depth to a water table, ponding, rock fragments, slope, depth to bedrock or a cemented pan, reaction, and content of salts, sodium, or lime.

Loamy or silty soils that are free of large stones and excess gravel are the best cover for a landfill. Clayey soils may be sticky and difficult to spread; sandy soils are subject to wind erosion.

Slope affects the ease of excavation and of moving the cover material. Also, it can influence runoff, erosion, and reclamation of the borrow area.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. It should not have excess sodium, salts, or lime and should not be too acid.

The management considerations affecting daily cover for landfill are as follows:

Depth to bedrock.—The depth to bedrock limits the volume of material suitable for use as landfill cover. Reclamation and revegetation also are difficult in areas of shallow soils.

Depth to pan.—Depth to a cemented pan limits the volume of material suitable for use as landfill cover. Reclamation and revegetation also are difficult in areas of shallow soils.

Fragments (greater than 3").—Rock fragments larger than 3 inches in diameter impede the workability of the soil and restrict the use of heavy machinery. They also affect site reclamation.

Fragments (less than 75 mm).—A high content of gravel (rock fragments less than 75 mm in diameter) may impede the workability of the soil and restrict the use of heavy machinery. It can also affect site reclamation.

Organic matter.—Soils in Unified class PT have a high content of organic matter and low strength and are hard to reclaim.

Packing.—Soils in Unified classes MH, OL, OH, or CH are hard to pack. This condition is only partially restrictive if the clay mineralogy is kaolinitic.

Permeability (Ksat).—A high Ksat results in unimpeded water movement through the soil. As a result, seepage and/or leaching may be a concern.

Ponding.—Ponding is the condition where standing water is on the soil surface for any period of time. Ponding limits the installation and functioning of most land use applications.

Sandy textures.—Sandy soils may be subject to soil blowing and are droughty. The establishment of vegetative cover is difficult in areas of these soils.

Saturation.—Shallow depth to a water table limits the volume of material suitable for use as landfill cover. Reclamation and revegetation also are difficult in areas of shallow soils, and contamination from leaching may be a concern.

Silty clay or clay; silt or clay textures; clay loam, silty clay, silty clay loam.—Soils that have a high content of silt or clay may become sticky when wet and are difficult to spread and compact.

Slope.—Steep slopes impede the use of heavy machinery and can limit the reclamation of borrow sites.

Construction Materials

Tables 18a and 18b give information about the soils as potential sources of gravel, sand, topsoil, reclamation material, and roadfill. Normal compaction, minor processing, and other standard construction practices are assumed.

Table 18a

Gravel and *sand* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In table 18a, only the likelihood of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the bottom layer of the soil contains sand or gravel, the soil is considered a likely source regardless of thickness. The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum thickness.

The soils are rated *good*, *fair*, or *poor* as potential sources of sand and gravel. A rating of *good* or *fair* means that the source material is likely to be in or below the soil. The bottom layer and the thickest layer of the soils are assigned numerical ratings. These ratings indicate the likelihood that the layer is a source of sand or gravel. The numbers 0.00 to 0.07 indicate that the layer is a poor source. The numbers 0.75 to 1.00 indicate that the layer is a good source.

The soils are rated *good*, *fair*, or *poor* as potential sources of topsoil. The features that limit the soils as sources of this material are specified in the tables. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as a source of topsoil. The lower the number, the greater the limitation.

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or a cemented pan, and toxic material.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Management considerations that affect the potential of the soils as a source of topsoil are as follows:

Clay.—Clayey soils become sticky when wet and have poor tilth. If these soils are used as a source of topsoil, controlling compaction, proper seedbed preparation, and establishing new growth are difficult.

Depth to bedrock.—The depth to bedrock limits the volume of material suitable for use as topsoil or for reclamation.

Depth to pan.—Depth to a cemented pan limits the volume of material suitable for use as topsoil or for reclamation.

EC (electrical conductivity).—In soils with high salinity, plant growth may be restricted and reestablishing vegetation is difficult.

Hard to reclaim.—Because of shallow depth to layers with high bulk density, revegetation and reclamation are difficult. These layers have a low available water capacity and restricted percolation rates. Also, soils that have rock fragments are hard to reclaim. The rock fragments interfere with grading, seeding, germination, and plant growth.

OM.—Soils that have a high content of organic matter have low strength and are difficult to reclaim.

pH.—In soils that have low pH, plant growth is restricted and reestablishing vegetation is difficult.

Rock fragment content.—Rock fragments in the soil interfere with grading, seeding, germination, and plant growth.

Sand fractions.—In soils that have a thick sandy layer with a low content of clay, revegetation is difficult. Also, wind erosion is a hazard in areas of these soils.

SAR.—In soils with a high sodium adsorption ratio, plant growth is restricted and reestablishing vegetation is difficult.

Saturation; no saturated zone.—Shallow depth to a water table can limit the volume of material suitable for use as topsoil. Reclamation and revegetation may be difficult. The soils are slow to drain and can become waterlogged and boggy during periods of heavy precipitation.

Slope.—Steep slopes restrict the use of heavy machinery and affect the reclamation of borrow sites.

Table 18b

The soils are rated *good, fair, or poor* as potential sources of reclamation material and roadfill. The features that limit the soils as sources of these materials are specified in the tables. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of reclamation material or roadfill. The lower the number, the greater the limitation.

Reclamation material is used in areas that have been drastically disturbed by surface mining or similar activities. When these areas are reclaimed, layers of soil material or unconsolidated geological material, or both, are replaced in a vertical sequence. The reconstructed soil favors plant growth. The ratings in the table do not apply to quarries and other mined areas that require an offsite source of reconstruction material. The ratings are based on the soil properties that affect erosion and stability of the surface and the productive potential of the reconstructed soil. These properties include the content of sodium, salts, and calcium carbonate; reaction; available water capacity; erodibility; texture; content of rock fragments; and content of organic matter and other features that affect fertility.

Management considerations that affect the potential of the soils as a source of reclamation material are as follows:

AWC.—The available water capacity affects plant growth and the establishment of grasses, shrubs, and trees.

Calcium carbonates.—A high content of calcium carbonate may limit the growth of some plant species.

Clay.—Clayey soils may become sticky when wet and are difficult to spread and compact.

Depth to pan.—Depth to a cemented pan limits the volume of material suitable for reclamation.

Fragments 3-10".—An excessive content of cobbles (rock fragments 3 to 10 inches in diameter) in the upper 72 inches (180 cm) of the soil can interfere with the use of construction equipment.

Fragments greater than 10".—An excessive content of stones or boulders (rock fragments more than 10 inches in diameter) in the upper 72 inches (180 cm) of the soil can interfere with the use of construction equipment.

K factor.—Soils that have a high K factor are subject to water erosion if they are used as a source of reclamation material. Measures that help to control water erosion are needed.

Maximum pH greater than 8.5.—In soils with high pH, plant growth is restricted and reestablishing vegetation is difficult.

OM.—Soils that have a low content of organic matter have poor tilth and inherent fertility problems. Additions of organic material may be needed.

pH is between 4 and 6.5 above 40".—In soils that have low pH, plant growth is restricted and reestablishing vegetation is difficult.

Sand fractions.—In soils that have a thick sandy layer with a low content of clay, revegetation is difficult. Also, wind erosion is a hazard in areas of these soils.

SAR.—In soils with a high sodium adsorption ratio, plant growth is restricted and reestablishing vegetation is difficult in disturbed areas.

WEG.—Soils in wind erodibility groups 1 through 3 are susceptible to wind erosion. Measures that help to control wind erosion are needed.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

Management considerations that affect the potential of the soils as a source of roadfill are as follows:

AASHTO GIN.—Soils with a high AASHTO group index number have low strength, which affects the traffic-supporting capacity of the soil and reduces the potential of the soil as a source of roadfill. This condition is only partially restrictive if the clay mineralogy is kaolinitic.

Depth to bedrock.—The depth to bedrock limits the volume of material suitable for use as roadfill.

Depth to pan.—Depth to a cemented pan limits the volume of material suitable for use as roadfill.

Fragments greater than 3".—Rock fragments more than 3 inches in diameter can interfere with the use of construction equipment and can hinder grade stabilization.

LEP (shrink-swell).—Excessive shrinking and swelling can result in the shifting of roads and the cracking of pavement.

Saturation; no saturated zone.—Shallow depth to a water table can limit the volume of material suitable for use as roadfill. Reclamation and revegetation may be difficult. The soils are slow to drain and can become waterlogged and boggy during periods of heavy precipitation.

Slope.—Steep slopes restrict the use of heavy machinery and affect the reclamation of borrow sites.

Water Management

Table 19a, 19b, and 19c provide information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and five irrigation design systems. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *No limitations* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Limitations* with values between 0.00 and 1.00 can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Limitations* with a value of 1.00 indicate that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Table 19a

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Management considerations affecting pond reservoir areas are as follows.

Depth to bedrock.—Shallow depth to bedrock limits site preparation, the depth of the reservoir, and pond maintenance.

Depth to pan.—Shallow depth to a cemented pan limits site preparation, the depth of the reservoir, and pond maintenance.

Permeability (Ksat).—The soil horizon with the maximum Ksat governs the seepage potential of the soil. If this rate is high, the transmission of fluids into and through the soil is unimpeded and seepage may be a concern.

Slope.—Steep slopes impede site preparation and construction and restrict the size and shape of the reservoir.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. Embankments that have zoned construction (core and shell) are not considered. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Management considerations affecting embankments, dikes, and levees are as follows.

Fragments (greater than 3").—Rock fragments more than 3 inches in diameter impede the workability of the soil, restrict the use of heavy machinery, and affect site reclamation. A high content of rock fragments may also unfavorably affect efforts to compact the soil.

Organic matter.—Soils in Unified class PT, OL, or OH have a high content of organic matter and low strength and are hard to reclaim.

Piping potential.—Fine textured soils that have a high content of sodium and gypsum and low cohesion and liquid limit are subject to piping.

Ponding.—Ponding is the condition where standing water is on the soil surface for any period of time. Ponding limits the timing of installation of embankments, dikes, or levees.

Saturation.—Shallow depth to a water table limits the reclamation and revegetation of the soils. The soils are slow to drain and can become waterlogged and boggy during periods of heavy precipitation.

Seepage.—Soils that have gravel or sand in the bottom layer or thickest layer are subject to seepage.

Shrink-swell; MH or CH Unified.—Fine textured soils with a high plasticity index and liquid limit are difficult to compact. Soils that have a high shrink-swell potential tend to crack as they dry.

Thin layer.—Shallow depth to a cemented restrictive layer limits the amount of source material available for constructing dikes, levees, or water-retention embankments.

Table 19b

Basin or paddy irrigation systems are generally used for paddy irrigation for rice. They require considerable land preparation. Soil properties affecting the performance of these systems are similar to those listed for graded border systems. Where rice is grown, however, slow water movement, ponding, and clayey textures are not limitations.

Graded border irrigation systems are methods of surface irrigation best adapted to grain and forage crops. Borders are divided by levees running down the slope at uniform spacings. Soil properties affecting the performance of graded border irrigations systems include sandy textures, slope, rock fragments on the surface, slow water movement, and a shallow depth to a cemented pan or bedrock.

Table 19c

Sprinkler irrigation systems vary in shape, size, and design, depending on crop needs and soil type. These systems can perform over a wider range of soils than border irrigation systems. Most systems can perform on slopes up to about 15 percent. Ponding, erodibility of the surface layer, and depth to a cemented pan or bedrock are typical factors affecting design and performance of the system.

Drip or trickle irrigation systems are very efficient and are most economical for widely spaced crops, such as trees and vines. Slope is generally not a limitation, and the movement of water through the soil can be controlled by application rates. Soil texture, water movement through the soil, rock fragments on the surface, and available water-holding capacity are less limiting for these systems than for other systems.

Furrow irrigation systems are among the oldest irrigation methods. They require efficient management. A furrow is a small, shallow channel installed down or across the slope of the field. The furrow length should be determined by soil type and slope. Furrows running downslope contribute to soil erosion. Soil texture, erodibility, and depth to a cemented pan or bedrock are typical factors affecting performance and maintenance of the system.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey.

Soil properties are ascertained by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine particle-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties are shown in tables. They include engineering index properties, physical and chemical properties, and pertinent soil and water features.

Engineering Index Properties

Table 20 gives the engineering classifications and the range of index properties for the layers of each soil in the survey area.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly." Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group

index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an oven-dry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of particle-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is generally omitted in the table.

No estimates are made for liquid limit, plasticity index, and Unified and AASHTO classifications for soils with medial or ashy texture modifiers because there is no ASTM procedure for soils with andic soil properties. The USDA texture is the apparent field texture.

Physical Properties

Tables 21 and 22 show estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Table 21

Depth to the upper and lower boundaries of each layer is indicated.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In the table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Saturated hydraulic conductivity refers to the ability of a soil to transmit water or air. The term "permeability," as used in soil surveys, indicates saturated hydraulic conductivity (K_{sat}). The estimates in the table indicate the rate of water movement, in micrometers per second (um/sec), when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic

matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at $1/3$ - or $1/10$ -bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In the table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Table 22

Depth to the upper and lower boundaries of each layer is indicated.

Erosion factors are shown in table 22 as the K factor (K and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the "National Soil Survey Handbook" (USDA/NRCS).

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Chemical Properties

Table 23 shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area.

The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In the table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Cation-exchange capacity is the total amount of extractable bases that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Effective cation-exchange capacity refers to the sum of extractable bases plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

Soil reaction is a measure of acidity or alkalinity. The pH of each soil horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil. Incorporating nitrogen fertilizer into calcareous soils helps to prevent nitrite accumulation and ammonium-N volatilization.

Gypsum is expressed as a percent, by weight, of hydrated calcium sulfates in the fraction of the soil less than 20 millimeters in size. Gypsum is partially soluble in water. Soils that have a high content of gypsum may collapse if the gypsum is removed by percolating water.

Salinity is a measure of soluble salts in the soil at saturation. It is expressed as the electrical conductivity of the saturation extract, in millimhos per centimeter at 25 degrees C. Estimates are based on field and laboratory measurements at representative sites of nonirrigated soils. The salinity of irrigated soils is affected by the quality of the irrigation water and by the frequency of water application. Hence, the salinity of soils in individual fields can differ greatly from the value given in the table. Salinity affects the suitability of a soil for crop production, the stability of soil if used as construction material, and the potential of the soil to corrode metal and concrete.

Sodium adsorption ratio (SAR) is a measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration. Soils that have SAR values of 13 or more may be characterized by an increased dispersion of organic matter and clay particles, reduced permeability and aeration, and a general degradation of soil structure.

Physical and Chemical Analyses of Selected Soils

The results of physical and chemical analyses of several typical pedons in the survey area are available on the Internet (<http://ssldata.nrcs.usda.gov/querypage.asp>). The data are for soils sampled at carefully selected sites. Unless otherwise indicated, the pedons are typical of the series. The following is a list of soil samples analyzed by the National Soil Survey Laboratory in Lincoln, Nebraska.

Correlated soil name: Almendra

Pedon number: 95P0513

Site ID: 95CA612004

Latitude: 39-40-25.00N

Longitude: 121-48-40.00W

Datum: NAD27

Location notes: Approximately 2,300 feet north and 2,100 feet west of the southeast corner of sec. 13, T. 21 N., R. 1 E.; about 2.0 miles north of Durham; Chico, California, Quad.

Correlated soil name: Beecee

Pedon number: 96P0141

Site ID: 615-H

Latitude: 39-57-44.82N

Longitude: 121-31-5.65W

Datum: NAD27

Location notes: Approximately 1,500 feet north and 850 feet east of the southwest corner of sec. 3, T. 24 N., R. 4 E.; about 2.2 miles southeast of Inskip; Stirling City, California, Quad.

Correlated soil name: Bigridge

Pedon number: 01N0268

Site ID: 716-L

Latitude: 39-36-41.47N

Longitude: 121-24-51.65W

Datum: NAD83

Location notes: Approximately 1,300 feet west and 750 feet south of the northeast corner of sec. 9, T. 20 N., R. 5 E.; about 6.25 miles northeast of Oroville Dam; Oroville Dam, California, Quad.

Correlated soil name: Bonepile

Pedon number: 97P0308

Site ID: 670-I

Latitude: 40-1-57.00N

Longitude: 121-31-35.30W

Datum: NAD83

Location notes: Approximately 600 feet north and 1,200 feet west of the southeast corner of sec. 9, T. 25 N., R. 4 E.; Butte Meadows, California, Quad.

Correlated soil name: Bonneyridge

Pedon number: 96P0134

Site ID: 823-Y

Latitude: 39-38-50.0N

Longitude: 121-10-49.0W

Datum: NAD27

Location notes: Approximately 2,600 feet east and 1,800 feet north of the southwest corner of sec. 27, T. 21 N., R. 7 E.; Cascade California, Quad.

Correlated soil name: Bonneyridge

Pedon number: 97P0311

Site ID: 709-K

Latitude: 39-40-26.80N

Longitude: 121-8-0.20W

Datum: NAD83

Location notes: Approximately 1,100 feet north and 650 feet east of the southwest corner of sec. 18, T. 21 N., R. 8 E.; about 3 miles southeast of Cascade; Cascade, California, Quad.

Correlated soil name: Bottlehill

Pedon number: 97P0307

Site ID: 674-I

Latitude: 40-1-18.00N

Longitude: 121-32-9.50W

Datum: NAD83

Location notes: Approximately 1,850 feet north and 1,350 feet east of the southwest corner of sec. 16, T. 25 N., R. 4 E.; Butte Meadows, California, Quad.

Correlated soil name: Busacca

Pedon number: 89P0067

Site ID: 127-56-2

Latitude: 39-47-47.00N

Longitude: 121-58-27.00W

Datum: NAD27

Location notes: Nord, California, Quad.

Correlated soil name: Cerpone

Pedon number: 98P0294

Site ID: 6251

Latitude: 39-49-23.54N

Longitude: 121-32-29.94W

Datum: NAD83

Location notes: Approximately 2,150 feet south and 250 feet east of the northwest corner of sec. 28, T. 23 N., R. 4 E.; about 1.2 miles northeast of Sawmill Peak; Paradise East, California, Quad.

Correlated soil name: Cherotable

Pedon number: 01N0260

Site ID: 551X

Latitude: 39-35-54.71N

Longitude: 121-32-29.4W

Datum: NAD83

Location notes: Approximately 660 feet west and 140 feet north of the southeast corner of sec. 8, T. 20 N., R. 4 E.; about 5 miles north of Oroville; Oroville, California, Quad.

Correlated soil name: Chico

Pedon number: 95P0515

Site ID: 95CA612018

Latitude: 39-42-2.00N

Longitude: 121-49-27.00W

Datum: NAD27

Location notes: Approximately 1,500 feet north and 125 feet east of the southeast corner of sec. 2, T. 21 N., R. 1 E.; about 1 mile south of Chico; 200 feet northeast of modal site; Chico, California, Quad.

Correlated soil name: Coonhollow

Pedon number: 01N0261

Site ID: 552W

Latitude: 39-35-17.55N

Longitude: 121-34-15.48W

Datum: NAD83

Location notes: Approximately 1,750 feet east and 1,800 feet north of the southwest corner of sec. 18, T. 20 N., R. 4 E.; about 5.1 miles north of downtown Oroville; Oroville, California, Quad.

Correlated soil name: Craigsaddle

Pedon number: 01N0269

Site ID: 715-Q

Latitude: 39-32-49.30N

Longitude: 121-22-58.50W

Datum: NAD83

Location notes: Approximately 2,150 feet east and 2,000 feet north of the southwest corner of sec. 35, T. 20 N., R. 5 E.; about 2.5 miles east of Bidwell Bar Bridge; Oroville Dam, California, Quad.

Correlated soil name: Dixmine*Pedon number:* 98P0292*Site ID:* 690J*Latitude:* 39-57-49.77N*Longitude:* 121-37-52.52W*Datum:* NAD83*Location notes:* Approximately 1,500 feet north and 1,500 feet east of the southwest corner of sec. 3, T. 24 N., R. 3 E.; Cohasset, California, Quad.*Correlated soil name:* Doemill*Pedon number:* 01N0255*Site ID:* 614-J*Latitude:* 39-51-3.57N*Longitude:* 121-51-54.65W*Datum:* NAD83*Location notes:* Approximately 1,600 feet south and 750 feet west of the northeast corner of sec. 16, T. 23 N., R. 1 E.; about 0.7 mile north of Rock Creek Road and about 2.8 miles east of Meridian Road; Richardson Springs, California, Quad.*Correlated soil name:* Esquon*Pedon number:* 95P0511*Site ID:* 95CA612002*Latitude:* 39-29-36.00N*Longitude:* 121-43-4.00W*Datum:* NAD27*Location notes:* Approximately 2,150 feet east and 100 feet south of the northwest corner of sec. 23, T. 19 N., R. 2 E.; Biggs, California, Quad.*Correlated soil name:* Farwell*Pedon number:* 89P0068*Site ID:* 127-56-9*Latitude:* 39-47-39.00N*Longitude:* 121-58-56.00W*Datum:* NAD27*Location notes:* Unsectionized; about 1.9 miles northwest of Nord; Nord, California, Quad.*Correlated soil name:* Gianella*Pedon number:* 89P0070*Site ID:* 439-24-9*Latitude:* 39-48-13.00N*Longitude:* 122-3-19.00W*Datum:* NAD27*Location notes:* About 5.7 miles northwest of Nord, on Snaden Island; approximately 2,700 feet west and 400 feet south of the west end of Bennett Road; unsectionized; Foster Island, California, Quad.*Correlated soil name:* Griffgulch*Pedon number:* 98P0291*Site ID:* 625K*Latitude:* 39-47-27.10N*Longitude:* 121-33-3.10W*Datum:* NAD83*Location notes:* Approximately 2,150 feet north and 2,050 feet west of the southeast corner of sec. 5, T. 22 N., R. 4 E.; Paradise East, California, Quad.*Correlated soil name:* Jocal taxadjunct*Pedon number:* 96P0133*Site ID:* 821-Q

Latitude: 39-37-50.50N

Longitude: 121-10-38.00W

Datum: NAD27

Location notes: SW¹/₄SE¹/₄ sec. 34, T. 21 N., R. 7 E.; Cascade, California, Quad.

Correlated soil name: Jokerst

Pedon number: 01N0256

Site ID: 615-J

Latitude: 39-51-3.18N

Longitude: 121-51-54.71W

Datum: NAD83

Location notes: Approximately 1,625 feet south and 775 feet west of the northeast corner of sec. 16, T. 23 N., R. 1 E.; about 0.7 mile north of Rock Creek Road and about 2.8 miles east of Meridian Road; Richardson Springs, California, Quad.

Correlated soil name: Lavatop

Pedon number: 96P0135

Site ID: 821-H

Latitude: 39-37-45.80N

Longitude: 121-8-54.00W

Datum: NAD27

Location notes: Approximately 1,250 feet east and 250 feet north of the southwest corner of sec. 36, T. 21 N., R. 7 E.; about 6.1 miles east of Camp Eighteen; Cascade, California, Quad.

Correlated soil name: Lewisflat

Pedon number: 96P0142

Site ID: 706-A

Latitude: 39-34-47.50N

Longitude: 121-6-37.50W

Datum: NAD83

Location notes: Approximately 1,400 feet east and 2,000 feet south of the northwest corner of sec. 20, T. 20 N., R. 8 E.; about 1.1 miles north of Strawberry Valley; Strawberry Valley, California, Quad.

Correlated soil name: Llanoseco

Pedon number: 95P0517

Site ID: 95CA612020

Latitude: 39-35-30.00N

Longitude: 121-56-46.00W

Datum: NAD27

Location notes: Unsectionized; 20,370 feet north and 700 feet east of the northwest corner at modal site, sec. 2, T. 19 N., R. 1 W., Llanoseco Sanctuary #1, Field T1; Llano Seco, California, Quad.

Correlated soil name: Loafercreek

Pedon number: 01N0266

Site ID: 716Q

Latitude: 39-31-8.28N

Longitude: 121-26-28.49W

Datum: NAD83

Location notes: Approximately 427 meters east and 747 meters south of the northwest corner of sec. 8, T. 19 N., R. 5 E.; Oroville State Recreation Area, Loafercreek, about 7,200 meters northeast of Wyandotte; Oroville Dam, California, Quad.

Correlated soil name: Loafercreek

Pedon number: 01N0263

Site ID: 300J

Latitude: 39-26-41.87N

Longitude: 121-26-12.47W

Datum: NAD83

Location notes: Approximately 2,350 feet east and 2,100 feet north of the southwest corner of sec. 5, T. 18 N., R. 5 E.; about 3.3 miles southeast of Wyandotte; Bangor, California, Quad.

Correlated soil name: Loemstone

Pedon number: 95P0514

Site ID: 95CA612005

Latitude: 39-20-2.00N

Longitude: 121-40-0.00W

Datum: NAD27

Location notes: About 2 miles southeast of Gridley, approximately 475 feet east and 220 feet south of the intersection of Evans Reimer Road and Cowee Avenue; in an unsectionized area in the Boga Land Grant; Gridley, California, Quad.

Correlated soil name: Lofgren

Pedon number: 95P0510

Site ID: 95CA612001

Latitude: 39-28-2.00N

Longitude: 121-49-4.00W

Datum: NAD27

Location notes: Approximately 200 feet east and 1,000 feet north of the southwest corner of sec. 25, T. 19 N., R. 1 E.; about 4.2 miles southwest of Richvale; West of Biggs, California, Quad.

Correlated soil name: Lydon

Pedon number: 96P0137

Site ID: 611H

Latitude: 39-58-30.30N

Longitude: 121-36-30.40W

Datum: NAD27

Location notes: About 0.6 mile southeast of Ewalt Camp, approximately 2,100 feet east and 350 feet north of the northwest corner of sec. 2, T. 24 N., R. 3 E.; in an unsectionized area; Stirling City, California, Quad.

Correlated soil name: Mounthope

Pedon number: 01N0267

Site ID: 720-F

Latitude: 39-36-34.15N

Longitude: 121-27-33.20W

Datum: NAD83

Location notes: Approximately 1,600 feet east and 1,050 feet south of the northwest corner of sec. 7, T. 20 N., R. 5 E.; about 5.1 miles northeast of Oroville Dam; Oroville Dam, California, Quad.

Correlated soil name: Mountyana

Pedon number: 96P0136

Site ID: 610-H

Latitude: 39-58-26.40N

Longitude: 121-36-7.20W

Datum: NAD27

Location notes: Approximately 100 feet south and 1,500 feet west of the northeast corner of sec. 2, T. 24 N., R. 3 E.; about 1 mile east-southeast of Ewalt Camp; Stirling City, California, Quad.

Correlated soil name: Mudwash

Pedon number: 98P0288

Site ID: 713-O

Latitude: 39-41-9.30N

Longitude: 121-9-21.90W

Datum: NAD83

Location notes: Approximately 450 feet west and 500 feet south of the northeast corner of sec. 14, T. 21 N., R. 7 E.; about 1.6 miles southeast of Cascade; Cascade, California, Quad.

Correlated soil name: Neerdobe

Pedon number: 95P0512

Site ID: 95CA612003

Latitude: 39-30-48.00N

Longitude: 121-47-30.00W

Datum: NAD27

Location notes: Approximately 800 feet south of the center of sec. 7, modal site, T. 19 N., R. 2 E.; Nelson, California, Quad.

Correlated soil name: Obstruction

Pedon number: 96P0140

Site ID: 614-H

Latitude: 39-57-43.20N

Longitude: 121-32-37.00W

Datum: NAD27

Location notes: Approximately 1,350 feet north and 1,100 feet west of the southeast corner of sec. 5, T. 24 N., R. 4 E.; about 1 mile south-southwest of Inskip Cemetery; Stirling City, California, Quad.

Correlated soil name: Paradiso

Pedon number: 97P0306

Site ID: 616-I

Latitude: 39-47-13.60N

Longitude: 121-35-24.20W

Datum: NAD83

Location notes: SW¹/₄SE¹/₄SW¹/₄ sec. 1, T. 22 N., R. 3 E.; about 150 feet northwest of CDF office, 20 feet south of fence and park; Paradise East, California, Quad.

Correlated soil name: Parrott

Pedon number: 89P0069

Site ID: 439-24-17

Latitude: 39-48-13.00N

Longitude: 122-1-23.00W

Datum: NAD27

Location notes: Approximately 2,200 feet north and 1,700 feet east of the intersection of T. 22 N. and 23 N. and R. 1 W. and 2 W.; about 3.8 miles northeast of Nord; Foster Island, California, Quad.

Correlated soil name: Powderhouse

Pedon number: 97P0309

Site ID: 709-H

Latitude: 39-41-23.90N

Longitude: 121-6-25.30W

Datum: NAD83

Location notes: Approximately 1,900 feet west and 1,850 feet north of the southeast corner of sec. 8, T. 21 N., R. 8 E.; about 2 miles south of Camel Peak Lookout; American House, California, Quad.

Correlated soil name: Powellton

Pedon number: 96P0144

Site ID: 704-R

Latitude: 39-33-43.00N

Longitude: 121-9-15.00W

Datum: NAD27

Location notes: Approximately 2,000 feet west and 3,000 feet south of the northeast corner of sec. 26, T. 20 N., R. 7 E.; about 1.9 miles north of Clipper Mills; Clipper Mills, California, Quad.

Correlated soil name: Powellton

Pedon number: 96P0138

Site ID: 612-H

Latitude: 39-54-59.70N

Longitude: 121-34-34.70W

Datum: NAD27

Location notes: Approximately 800 feet south and 400 feet east of the northwest corner of sec. 31, T. 24 N., R. 4 E.; about 0.5 mile north of Lovelock; Stirling City, California, Quad.

Correlated soil name: Redbone

Pedon number: 98P0293

Site ID: 679J

Latitude: 40-2-20.64N

Longitude: 121-35-1.02W

Datum: NAD83

Location notes: About 1,600 feet west and 2,400 feet north of the southwest corner of sec. 7, T. 25 N., R. 3 E. (unsectionized); Mt. Diablo meridian; Butte Meadows, California, Quad.

Correlated soil name: Rogerville

Pedon number: 96P0132

Site ID: 825-P

Latitude: 39-37-46.00N

Longitude: 121-11-6.00W

Datum: NAD27

Location notes: Approximately 1,400 feet east and 100 feet north of the southwest corner of sec. 34, T. 21 N., R. 7 E.; about 4.2 miles northeast of Featherfalls; Cascade, California, Quad.

Correlated soil name: Series not designated

Pedon number: 01N0262

Site ID: 300W

Latitude: 39-28-20.92N

Longitude: 121-26-20.58W

Datum: NAD27

Location notes: Approximately 594 meters east and 625 meters north of the southwest corner of sec. 29, T. 19 N., R. 5 E.; Gilbert Ranch; about 213 meters from the trail crossing North Huncut Creek, heading in a southeasterly direction, and about 61 meters northeast of the trail.; Bangor, California, Quad.

Correlated soil name: Series not designated

Pedon number: 98P0286

Site ID: 712-L

Latitude: 39-43-29.10N

Longitude: 121-3-41.60W

Datum: NAD83

Location notes: Approximately 750 feet east and 2,000 feet south of the northwest corner of sec. 35, T. 22 N., R. 8 E.; about 2.2 miles northeast of Camel Peak Lookout; American House, California, Quad.

Correlated soil name: Series not designated

Pedon number: 01N0264

Site ID: 303F

Latitude: 39-24-1.18N

Longitude: 121-21-46.71W

Datum: NAD83

Location notes: Approximately 1,400 feet north and 3,200 feet west of the southeast corner of sec. 24, T. 18 N., R. 5 E.; about 4.9 miles northeast of Bangor; Rackerby, California, Quad.

Correlated soil name: Series not designated

Pedon number: 01N0265

Site ID: 301P

Latitude: 39-29-4.43N

Longitude: 121-23-41.42W

Datum: NAD83

Location notes: Approximately 457 meters west and 152 meters north of the southeast corner of sec. 22, T. 19 N., R. 5 E.; about 1,128 meters west and 122 meters south of the Hurleton-Swedens Flat and Phoenix Mine Road intersection; Bangor, California, Quad.

Correlated soil name: Series not designated

Pedon number: 98P0290

Site ID: 712-V

Latitude: 39-44-6.00N

Longitude: 121-6-48.00W

Datum: NAD83

Location notes: Approximately 1,200 feet east and 1,950 feet north of the southwest corner of sec. 29, T. 22 N., R. 8 E.; about 1.2 miles northwest of Camel Peak Lookout; American House, California, Quad.

Correlated soil name: Series not designated

Pedon number: 01N0269

Site ID: 712-Q

Latitude: 39-41-55.20N

Longitude: 121-4-47.30W

Datum: NAD83

Location notes: Approximately 700 feet east and 900 feet south of the northwest corner of sec. 10, T. 21 N., R. 8 E.; about 1.9 miles southeast of Camel Peak Lookout; American House, California, Quad.

Correlated soil name: Series not designated

Pedon number: 96P0143

Site ID: 706-F

Latitude: 39-32-17.50N

Longitude: 121-12-52.00W

Datum: NAD27

Location notes: Clipper Mills, California, Quad.

Correlated soil name: Shakeridge

Pedon number: 97P0310

Site ID: 708-K

Latitude: 39-40-29.70N

Longitude: 121-8-57.50W

Datum: NAD83

Location notes: Approximately 1,250 feet north and 1,200 feet east of the southwest corner of sec. 13, T. 21 N., R. 7 E.; about 2.3 miles southeast of Cascade; Cascade, California, Quad.

Correlated soil name: Stagpoint

Pedon number: 98P0287

Site ID: 712-K

Latitude: 39-43-22.50N

Longitude: 121-3-55.80W

Datum: NAD83

Location notes: Approximately 300 feet west and 2,550 feet south of the northeast corner of sec. 34, T. 22 N., R. 8 E.; about 2 miles east of Camel Peak Lookout; American House, California, Quad.

Correlated soil name: Subaco taxadjunct

Pedon number: 89P0071

Site ID: 127-33-9A

Latitude: 39-18-26.00N

Longitude: 121-47-52.00W

Datum: NAD27

Approximately 1,200 feet north and 200 feet west of the southeast corner of sec. 24, T. 17 N., R. 1 E.; about 1.1 miles northwest of Pennington; Pennington, California, Quad.

Correlated soil name: Toadtown

Pedon number: 96P0130

Site ID: 826-W

Latitude: 39-36-15.00N

Longitude: 121-14-13.00W

Datum: NAD27

Location notes: SW¹/₄SW¹/₄ sec. 7, T. 20 N., R. 7 E.; Clipper Mills, California, Quad.

Correlated soil name: Toadtown

Pedon number: 96P0131

Site ID: 825-N

Latitude: 39-36-50.80N

Longitude: 121-11-44.10W

Datum: NAD27

Location notes: SE¹/₄SW¹/₄ sec. 4, T. 20 N., R. 7 E.; Clipper Mills, California, Quad.

Correlated soil name: Toadtown

Pedon number: 96P0139

Site ID: 613-H

Latitude: 39-55-0.70N

Longitude: 121-34-57.98W

Datum: NAD27

Location notes: Approximately 600 feet north and 1,500 feet west of the southeast corner of sec. 24, T. 24 N., R. 3 E.; about 1 mile southwest of Powellton; Stirling City, California, Quad.

Correlated soil name: Ultic Haploxerafs, thermic

Pedon number: 01N0257

Site ID: 622N

Latitude: 39-41-59.87N

Longitude: 121-41-4.94W

Datum: NAD83

Location notes: Approximately 1,700 feet south and 200 feet west of the center of sec. 6, T. 21 N., R. 3E.; about 0.75 mile west of Elliot Spring House and 0.2 mile south of Neal Road; Hamlin Canyon, California, Quad.

Correlated soil name: Ultic Haploxerafs, thermic

Pedon number: 01N0258

Site ID: 678L

Latitude: 39-46-39.06N

Longitude: 121-43-57.69W

Datum: NAD83

Location notes: Approximately 2,400 feet east and 150 feet north of the center of sec. 10, T. 22 N., R. 2 E.; about 1.05 miles north of the intersection of the upper end of Humbolt Road and Highway 32 and 200 feet west of Highway 32; Paradise West, California, Quad.

Correlated soil name: Ultic Haploxeralfs, mesic

Pedon number: 01N0259

Site ID: 676M

Latitude: 39-48-15.06N

Longitude: 121-40-28.56W

Datum: NAD83

Location notes: Approximately 1,850 feet north and 300 feet east of the southwest corner of sec. 32, T. 23 N., R. 3 E.; about 850 feet north-northwest of Doe Mill Point; Paradise West, California, Quad.

Correlated soil name: Whitecabin

Pedon number: 95P0516

Site ID: 723R

Latitude: 39-35-57N

Longitude: 121-56-48W

Datum: NAD27

Location notes: About 1.7 miles southeast of Rancho Llano Seco headquarters, approximately 8,500 feet west of the Mt. Diablo meridian and 14,500 feet south of the boundary between T. 20 N. and 21 N.; in an unsectionized area in the Llano Seco Land Grant; Llano Seco, California, Quad.

Most determinations, except those for grain-size analysis and bulk density, were made on soil material smaller than 2 millimeters in diameter. Measurements reported as percent or quantity of unit weight were calculated on an oven-dry basis. The methods used in obtaining the data are indicated in the list that follows. The codes in parentheses refer to published methods (USDA, 2004).

Coarse materials—(2-75 mm fraction) weight estimates of the percentages of all material less than 75 mm (3B1).

Coarse materials—(2-250 mm fraction) volume estimates of the percentages of all material greater than 2 mm (3B2).

Sand—(0.05-2.0 mm fraction) weight percentages of material less than 2 mm (3A1).

Silt—(0.002-0.05 mm fraction) pipette extraction, weight percentages of all material less than 2 mm (3A1).

Clay—(fraction less than 0.002 mm) pipette extraction, weight percentages of material less than 2 mm (3A1).

Carbonate clay—(fraction less than 0.002 mm) pipette extraction, weight percentages of material less than 2 mm (3A1d).

Water retained—pressure extraction, percentage of oven-dry weight of less than 2 mm material; $\frac{1}{3}$ or $\frac{1}{10}$ bar (4B1), 15 bars (4B2).

Water-retention difference—between $\frac{1}{3}$ bar and 15 bars for whole soil (4C1).

Water-retention difference—between $\frac{1}{10}$ bar and 15 bars for whole soil (4C2).

Bulk density—of less than 2 mm material, saran-coated clods field moist (4A1a), $\frac{1}{3}$ bar (4A1d), oven-dry (4A1h).

Moist bulk density—of less than 2 mm material, cores (4A3).

Moist bulk density—of less than 2 mm material, compliant cavity (4A5).

Linear extensibility—change in clod dimension based on whole soil (4D).

Organic carbon—wet combustion. Walkley-Black modified acid-dichromate, ferric sulfate titration (6A1c).

Organic carbon—dry combustion (6A2d).

Total nitrogen—Kjeldahl (6B3).

Extractable cations—ammonium acetate pH 7.0, ICP; calcium (6N2i), magnesium (6O2h), sodium (6P2f), potassium (6Q2f).

Extractable cations—ammonium acetate pH 7.0, EDTA-alcohol separation; calcium (6N2a), magnesium (6O2a); flame photometry; sodium (6P2a), potassium (6Q2a).

Extractable acidity—barium chloride-triethanolamine IV (6H5a).

Cation-exchange capacity—ammonium acetate, pH 7.0, steam distillation (5A8b).

Cation-exchange capacity—sum of cations (5A3a).

Effective cation-exchange capacity—sum of extractable cations plus aluminum (5A3b).

Base saturation—ammonium acetate, pH 7.0 (5C1).

Base saturation—sum of cations, TEA, pH 8.2 (5C3).

Reaction (pH)—1:1 water dilution (8C1f).

Reaction (pH)—saturated paste (8C1b).

Reaction (pH)—potassium chloride (8C1g).

Reaction (pH)—sodium fluoride (8C1d).

Reaction (pH)—calcium chloride (8C1f).

Aluminum—potassium chloride extraction (6G9c).

Aluminum—acid oxalate extraction (6G12b).

Iron—acid oxalate extraction (6C9b).

Silica—acid oxalate extraction (6V2b).

Sesquioxides—dithionate-citrate extract; iron (6C2h), aluminum (6G7b), manganese (6D2g).

Soil resistivity—saturated paste (8E1).

Total soluble salts—estimate from resistivity (8A2).

Total soluble salts—estimate from conductivity (8D5).

Carbonate as calcium carbonate—(fraction less than 2 mm [80 mesh]) manometric (6E1h).

Carbonate as calcium carbonate—(fraction less than 20 mm) manometric (6E4).

Gypsum—precipitation in acetone (6F1a).

Soluble ions—acid titration, saturated paste; carbonate (6I1b), bicarbonate (6J1b).

Soluble ions—anion chromatograph, saturated paste; chloride (6K1f), sulfate (6L1f), nitrate (6M1f); fluoride (6U1d); nitrite (6W1d).

Electrical conductivity—saturation extract (8A3a).

Sodium adsorption ratio (5E).

Extractable phosphorus—Bray P-1 (6S3).

Available phosphorus—(method of reporting laboratory).

Water Features

Table 24 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

The *months* in the table indicate the portion of the year in which the feature is most likely to be a concern.

Water table refers to a saturated zone in the soil. Table 24 indicates, by month, depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. Table 24 indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Soil Features

Table 25 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness and thickness of the restrictive layer, both of which significantly affect the ease of excavation. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low*, *moderate*, or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low*, *moderate*, or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1999 and 2003). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 26 shows the classification of the soils in the survey area, and table 27 arranges the taxonomic units by order, suborder, great group, and subgroup. The categories are defined in the following paragraphs.

ORDER. Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Alfisol.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Xeralf (*Xer*, meaning dry, plus *alf*, from Alfisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Durixeralfs (*Duri*, meaning hard, plus *xeralf*, the suborder of the Alfisols that has a xeric moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic subgroup is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Durixeralfs.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineralogy class, cation-exchange activity class, soil temperature regime, soil depth, and reaction class. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is loamy-skeletal, mixed, superactive, thermic, shallow Typic Durixeralfs.

SERIES. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. An example is the Redswale series.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. Characteristics of the soil and the material in which it formed are identified for each series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the "Soil Survey Manual" (Soil Survey Division Staff, 1993) and in the "Field Book for Describing and Sampling Soils" (Schoeneberger and others, 2002). Many of the technical terms used in the descriptions are defined in "Soil Taxonomy" (Soil Survey Staff, 1999) and in "Keys to Soil Taxonomy" (Soil Survey Staff, 2003). Unless otherwise indicated, colors in the descriptions are for dry soil. Following the pedon description is the range of important characteristics of the soils in the series.

Almendra Series

The Almendra series consists of very deep, well drained soils that formed in alluvium derived from mixed rock sources. These soils are on alluvial fans. Slopes are 0 to 1 percent. The mean annual precipitation is about 23 inches (584 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Pachic Haploxerolls

Typical Pedon

Almendra loam, on a southwest-facing slope of 1 percent, in a leveled fallow field, under a cover of annual grasses, at an elevation of 180 feet (55 m). When described on 5/8/1995, the soil was slightly moist throughout. (Colors are for dry soil unless otherwise noted.)

- Ap1—0 to 4 inches (0 to 10 cm); brown (10YR 5/3) loam, very dark grayish brown (10YR 3/2) moist; 23 percent clay; moderate medium subangular blocky structure parting to moderate very fine and fine granular; slightly hard, very friable, nonsticky, slightly plastic; few fine and medium and common very fine roots; few very fine to medium tubular pores; 3 percent gravel; moderately acid, pH 5.8 by pH meter 1:1 water; clear smooth boundary.
- Ap2—4 to 14 inches (10 to 36 cm); grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; 24 percent clay; moderate medium subangular blocky structure parting to moderate very fine and fine granular; slightly hard, very friable, nonsticky, slightly plastic; common very fine to medium roots; common fine and medium and many very fine tubular pores; fine spherical wormcasts throughout; 3 percent gravel; slightly acid, pH 6.3 by pH meter 1:1 water; clear smooth boundary.
- Bw1—14 to 29 inches (36 to 74 cm); brown (10YR 5/3) loam, very dark grayish brown (10YR 3/2) moist; 20 percent clay; moderate medium subangular blocky structure parting to moderate very fine and fine granular; slightly hard, very friable, nonsticky, slightly plastic; few fine and medium and common very fine roots; common fine and medium tubular, many very fine tubular, and common very fine to medium irregular pores; fine spherical wormcasts throughout; 5 percent gravel; neutral, pH 6.6 by pH meter 1:1 water; clear wavy boundary.
- Bw2—29 to 40 inches (74 to 102 cm); brown (10YR 5/3) loam, dark brown (7.5YR 3/2) moist; 17 percent clay; moderate medium subangular blocky structure parting to moderate very fine and fine granular; slightly hard, very friable, nonsticky, slightly plastic; few fine and medium and common very fine roots; many very fine to medium irregular and tubular pores; 35 percent fine irregular brown (7.5YR 4/4 moist) oxidized iron masses lining pores; fine spherical wormcasts throughout; 4 percent gravel; neutral, pH 7.2 by pH meter 1:1 water; clear wavy boundary.

- Bw3**—40 to 52 inches (102 to 132 cm); brown (10YR 5/3) loam, brown (7.5YR 4/2) moist; 16 percent clay; moderate medium subangular blocky structure parting to moderate very fine and fine subangular blocky; slightly hard, very friable, nonsticky, slightly plastic; few fine and medium and common very fine roots; many very fine to medium tubular and irregular pores; 5 percent fine irregular brown (7.5YR 4/4 moist) oxidized iron masses lining pores; 65 percent fine irregular dark gray (10YR 4/1 moist) iron depletions on faces of peds and lining pores; 3 percent gravel; neutral, pH 7.3 by pH meter 1:1 water; clear wavy boundary.
- Bw4**—52 to 74 inches (132 to 188 cm); light brown (7.5YR 6/4) very fine sandy loam, brown (7.5YR 4/3) moist; 15 percent clay; weak medium subangular blocky structure; soft, very friable, nonsticky, slightly plastic; common very fine to medium roots; many very fine to medium tubular and irregular pores; 35 percent fine and medium irregular light brownish gray (10YR 6/2 moist) iron depletions lining pores; 1 percent gravel; slightly alkaline, pH 7.4 by pH meter 1:1 water; clear smooth boundary.
- Bw5**—74 to 86 inches (188 to 218 cm); light brown (7.5YR 6/4) very fine sandy loam, brown (7.5YR 4/3) moist; 13 percent clay; weak medium subangular blocky structure; soft, very friable, nonsticky, slightly plastic; few very fine roots; many very fine to medium tubular and irregular pores; 2 percent fine irregular black (N 2/0 moist) manganese masses throughout; 10 percent fine irregular brown (7.5YR 5/2 moist) iron depletions lining pores; 1 percent gravel; slightly alkaline, pH 7.4 by pH meter 1:1 water.

Type location: Butte County, California; about 2.0 miles north of Durham, approximately 2,300 feet north and 2,100 feet west of the southeast corner of sec. 13, T. 21 N., R. 1 E.; 39 degrees, 40 minutes, 25 seconds north latitude and 121 degrees, 48 minutes, 40 seconds west longitude; NAD27; USGS Quad: Chico, California.

Range in Characteristics

The thickness of the solum is more than 72 inches (183 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry in all parts from about May to October (about 140 to 160 days). The particle-size control section averages 18 to 27 percent clay and 0 to 5 percent rock fragments, mostly fine gravel. Mineralogy is mixed. Redoximorphic features, such as oxidized iron masses, iron depletions, and manganese masses, occur below a depth of 29 inches (74 cm). The content of organic matter is 1.2 to 4.6 percent from 0 to 40 inches (0 to 102 cm) and 0.34 to 0.84 percent from 40 to 86 inches (102 to 218 cm). By ammonium acetate, base saturation ranges from 97 to 100 percent and CEC ranges from 19.3 to 28.

The Ap horizon has dry color of 10YR 5/2, 5/3, 4/2, or 4/3. Moist color is 10YR 3/2, 3/3, 2/1, or 2/2. Texture is loam or fine sandy loam. The content of clay ranges from 15 to 27 percent. The content of gravel is 0 to 5 percent. Reaction ranges from moderately acid to slightly alkaline.

The Bw1 and Bw2 horizons have dry color of 10YR 5/2 or 5/3. Moist color is 10YR 3/2, 3/3, 4/2, or 4/3 or 7.5YR 3/2. Texture is loam or fine sandy loam. The content of clay ranges from 17 to 27 percent. The content of gravel is 0 to 5 percent. Reaction ranges from slightly acid to slightly alkaline.

The Bw3 horizon has dry color of 10YR 5/2, 5/3, 5/4, or 6/3. Moist color is 10YR 4/2, 4/3, 4/4, or 5/2. Texture is loam or fine sandy loam. The content of clay ranges from 15 to 27 percent. The content of gravel is 0 to 5 percent. Reaction ranges from slightly acid to slightly alkaline.

The Bw4 and Bw5 horizons have dry color of 10YR 4/3, 6/3, or 6/4 or 7.5YR 6/3 or 6/4. Moist color is 7.5YR 4/3 or 4/4 or 10YR 4/2, 4/3, 4/4, or 5/2. Texture is loam, sandy loam, fine sandy loam, or very fine sandy loam. The content of clay ranges

from 12 to 25 percent. The content of gravel is 0 to 5 percent. Reaction ranges from slightly acid to slightly alkaline.

Anita Series

The Anita series consists of shallow, poorly drained soils that formed in alluvium derived from volcanic rocks. These soils are in swales, in basins, and along drainageways on strath terraces on Cascade foothills and fan terraces. Slopes range from 0 to 3 percent. The mean annual precipitation is about 23 inches (584 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Clayey, smectitic, thermic, shallow Xeric Duraquerts

Typical Pedon

Anita clay, on a slope of 1 percent, under a cover of annual grasses and forbs, at an elevation of 250 feet (76 m). (Colors are for dry soil unless otherwise noted.)

A1—0 to 1 inch (0 to 3 cm); dark gray (5YR 4/1) clay, very dark gray (5YR 3/1) moist; 48 percent clay; strong medium granular structure; extremely hard, very firm, very sticky, very plastic; many very fine roots; many fine pores; slightly acid, pH 6.3 by pH meter 1:1 water; abrupt wavy boundary.

A2—1 to 3 inches (3 to 8 cm); dark gray (5YR 4/1) clay, very dark gray (5YR 3/1) moist; 52 percent clay; strong medium angular blocky structure; extremely hard, very firm, very sticky, very plastic; many fine roots; many fine pores; moderately acid, pH 6.0 by pH meter 1:1 water; abrupt wavy boundary.

Bss1—3 to 10 inches (8 to 25 cm); dark gray (5YR 4/1) clay, very dark gray (5YR 3/1) moist; 53 percent clay; weak medium prismatic structure; extremely hard, very firm, very sticky, very plastic; many very fine roots; many fine pores; common slickensides; moderately acid, pH 6.0 by pH meter 1:1 water; clear wavy boundary.

Bss2—10 to 15 inches (25 to 38 cm); dark gray (5YR 4/1) clay, very dark gray (5YR 3/1) moist; 54 percent clay; massive when moist and strong coarse prismatic structure when dry; extremely hard, very firm, very sticky, very plastic; few very fine roots; few fine pores; common slickensides; slightly acid, pH 6.2 by pH meter 1:1 water; abrupt wavy boundary.

2Bkqm—15 to 20 inches (38 to 51 cm); brown (10YR 5/3) and very pale brown (10YR 7/4), indurated duripan; weak platy structure; interbedded with clay in the upper part; weakly calcareous; slightly alkaline, pH 7.5 by pH meter 1:1 water.

Type location: Tehama County, California; about 3.1 miles southeast of Vina, 1.5 miles north of the Butte County line, approximately 2,640 feet west and 1,320 feet north of southeast corner of sec. 29, T. 29 N., R. 1 E.; 39 degrees, 54 minutes, 7 seconds north latitude and 122 degrees, 0 minutes, 7 seconds west longitude; NAD27; USGS Quad: Vina, California.

Range in Characteristics

Depth to the duripan is 10 to 20 inches (25 to 51 cm). The duripan is underlain by volcanic sediments derived from tuffaceous rocks or volcanic sandstone. The mean annual soil temperature ranges from 63 to 66 degrees F (17 to 19 degrees C). The soils usually are dry by about June 15 and remain dry until September 15. The particle-size control section averages 45 to 55 percent clay and 0 to 25 percent rock fragments, mostly gravel and cobbles. Mineralogy is smectitic. Surface-initiated, reversible cracks $\frac{1}{4}$ inch to 2 inches (0.6 to 5 cm) wide extend from the surface to the duripan from July through October. The surface commonly has hoof prints up to 6 inches (15 cm) or more deep. A fluctuating water table can occur between the top of

the duripan and the surface of the soil from November through May. Rock fragments on the surface range from 15 to 25 percent rounded cobbles, 0 to 10 percent rounded gravel, and 0 to 2 percent stones. Some pedons are directly underlain by sandstone or volcanic sediments with a discontinuous silica-cemented capping.

The A horizon has dry color of 10YR 4/2 or 5/2; 7.5YR 3/1, 4/1, 4/2, 5/2, or 6/2; or 5YR 4/1. Moist color is 10YR 3/2 or 4/2; 7.5YR 3/1, 3/2, or 4/2; or 5YR 2/2 or 3/1. Texture is gravelly clay, cobbly clay, or clay. The content of clay ranges from 40 to 60 percent. The content of gravel is 0 to 20 percent. The content of cobbles also is 0 to 20 percent. The content of organic matter is 2 to 5 percent. Redoximorphic features range from 0 to 20 percent manganese masses and 0 to 5 percent oxidized iron masses. Reaction ranges from moderately acid to moderately alkaline.

The Bss horizon has dry color of 10YR 4/1 or 5/2, 7.5YR 4/2, or 5YR 4/1 or 5/1. Moist color is 10YR 3/2 or 4/1, 7.5YR 4/2 or 4/3, or 5YR 3/1 or 3/2. Texture is gravelly clay, cobbly clay, very cobbly clay, or clay. The content of clay ranges from 50 to 60 percent. The content of gravel is 0 to 35 percent, and the content of cobbles is 0 to 25 percent. The content of organic matter is 0.5 to 2 percent. The horizon has few or common slickensides and/or wedge-shaped aggregates. Redoximorphic features range from 0 to 20 percent manganese masses and from 0 to 5 percent oxidized iron masses. Reaction ranges from moderately acid to slightly alkaline.

The 2Bkqm horizon commonly has a manganese capping $\frac{1}{4}$ to $\frac{3}{8}$ inch (0.6 to 0.95 cm) thick. The content of gravel is 0 to 80 percent. The content of cobbles also is 0 to 80 percent.

Anita Taxadjunct

The Anita taxadjunct consists of shallow, poorly drained soils that formed in alluvium derived from volcanic rocks. These soils are in areas of small basins, drainageways, toeslopes, footslopes, and saddles on Cascade foothills. Slopes range from 0 to 12 percent. The mean annual precipitation is about 26 inches (660 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Clayey, smectitic, thermic, shallow Vertic Endoaquepts

Typical Pedon

Anita taxadjunct, on a northwest-facing slope of 1 percent, under a cover of ryegrass and vinegarweed, at an elevation of 235 feet (72 meters). When described on 4/16/2001, the soil was dry to a depth of 2 inches (5 cm) and slightly moist from 2 to 11 inches (5 to 28 cm). (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); brown (7.5YR 5/2) clay, brown (7.5YR 4/2) moist; 55 percent clay; strong medium and coarse subangular blocky structure; very rigid, friable, very sticky, very plastic; many very fine roots; few very fine tubular and common very fine to coarse irregular pores; 5 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

Bg—2 to 6 inches (5 to 15 cm); dark gray (5YR 4/1) clay, dark reddish gray (5YR 4/2) moist; 60 percent clay; moderate coarse prismatic structure parting to strong medium and coarse angular blocky; very rigid, friable, very sticky, very plastic; common very fine roots; few very fine tubular and common very fine to medium irregular pores; 5 percent gravel; neutral, pH 6.8 by Hellige-Truog; gradual smooth boundary.

Bssg—6 to 11 inches (15 to 28 cm); dark gray (5YR 4/1) clay, dark reddish gray (5YR 4/2) moist; 60 percent clay; moderate coarse prismatic structure parting to strong medium and coarse angular blocky; very rigid, friable, very sticky, very plastic; common very fine roots; few very fine tubular and common very fine to medium irregular pores; 25 percent slickensides and 20 percent wedge-shaped

aggregates; 5 percent gravel; neutral, pH 7.0 by Hellige-Truog; abrupt smooth boundary.

2Cr—11 inches (28 cm); very pale brown (10YR 8/3), moderately cemented volcanic sandstone bedrock, yellowish brown (10YR 5/4) moist; a manganese cap, 2 mm thick, on top of the horizon; slightly alkaline, pH 7.6 by Hellige-Truog.

Type location: Butte County, California; about 0.75 mile northeast of the intersection of Highways 99 and 149, approximately 50 feet south and 2,350 feet west of the northeast corner of sec. 6, T. 20 N., R. 3 E.; 39 degrees, 37 minutes, 29 seconds north latitude and 121 degrees, 40 minutes, 42 seconds west longitude; NAD83; USGS Quad: Shippee, California.

Range in Characteristics

The depth to paralithic bedrock is 10 to 20 inches (25 to 51 cm). The mean annual soil temperature is 60 to 68 degrees F (16 to 20 degrees C). The soil moisture control section is dry in all parts from about June through October (about 150 days). The particle-size control section averages 50 to 60 percent clay and 2 to 10 percent rock fragments, mostly gravel. Mineralogy is smectitic. Surface-initiated, reversible cracks 1 to 2 inches (2.5 to 5 cm) wide extend to a depth of 10 to 20 inches (25 to 51 cm) from April to November. A fluctuating water table can occur between the top of the bedrock and the surface of the soil from November through May. Redoximorphic features, such as iron concentrations, occur in the A horizon, and a manganese capping occurs on top of the 2Cr horizon. Rock fragments on the surface range from 0 to 5 percent gravel and 0 to 10 percent cobbles.

The A horizon has dry color of 10YR 4/1, 5/1, or 7/2 or 7.5YR 5/2. Moist color is 10YR 4/1 or 4/2 or 7.5YR 4/2. Texture is clay. The content of clay ranges from 40 to 60 percent. The content of gravel is 0 to 10 percent. Reaction ranges from slightly acid to moderately alkaline.

The Bg horizon has dry color of 10YR 4/1 or 4/2, 7.5YR 4/2, or 5YR 4/1. Moist color is 10YR 4/1 or 4/2, 7.5YR 4/1, or 5YR 4/2. Texture is clay. The content of clay ranges from 40 to 60 percent. The content of gravel is 0 to 10 percent. Reaction ranges from neutral to moderately alkaline.

The Bssg horizon has dry color of 10YR 4/1, 7.5YR 4/2, or 5YR 4/1. Moist color is 10YR 4/1, 7.5YR 4/1, or 5YR 4/2. Texture is clay. The content of clay ranges from 40 to 60 percent. The content of gravel is 0 to 10 percent. Reaction ranges from neutral to moderately alkaline.

The Anita taxadjunct is a taxadjunct because it is underlain by paralithic bedrock instead of a duripan. This difference does not significantly affect the use, management, or interpretations of the soils.

Aquic Xerofluvents

Aquic Xerofluvents consist of very deep, poorly drained soils that formed in alluvium derived from granitic and volcanic rocks. These soils are in meadows in Sierra Nevada mountain valleys. Slopes range from 0 to 8 percent. The mean annual precipitation is about 80 inches (2,030 mm), and the mean annual air temperature is about 49 degrees F (9 degrees C).

Taxonomic class: Coarse-loamy, mixed, active, nonacid Aquic Xerofluvents

Typical Pedon

Aquic Xerofluvents, on a south-southwest-facing slope of 4 percent, under a cover of *Carex*, *Juncus*, aster, corn lily, alder, and willow, at an elevation of 4,250 feet (1,295 m). When described on 9/16/1999, the soil was dry to a depth of 49 inches (124 cm) and slightly moist below that depth. (Colors are for dry soil unless otherwise noted.)

- A1—0 to 3 inches (0 to 8 cm); dark grayish brown (10YR 4/2) peaty very fine sandy loam, very dark brown (10YR 2/2) moist; 4 percent clay; massive; slightly hard, very friable, nonsticky, nonplastic; many very fine to medium roots; many very fine to medium irregular and tubular pores; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.
- A2—3 to 7 inches (8 to 18 cm); dark gray (10YR 4/1) mucky fine sandy loam, very dark gray (10YR 3/1) moist; 4 percent clay; weak fine and medium granular structure; slightly hard, very friable, nonsticky, nonplastic; many very fine to medium roots; many very fine to medium tubular and irregular pores; slightly acid, pH 6.3 by Hellige-Truog; abrupt smooth boundary.
- C—7 to 16 inches (18 to 41 cm); light gray (10YR 7/2) gravelly coarse sandy loam, grayish brown (10YR 5/2) moist; 4 percent clay; single grain; loose, nonsticky, nonplastic; many very fine to medium roots; many very fine to medium interstitial and tubular pores; 30 percent gravel; slightly acid, pH 6.4 by Hellige-Truog; abrupt smooth boundary.
- Ab—16 to 19 inches (41 to 48 cm); gray (10YR 5/1) mucky fine sandy loam, black (10YR 2/1) moist; 6 percent clay; massive; slightly hard, very friable, nonsticky, nonplastic; many very fine to medium roots; many very fine and fine and common medium tubular pores; 2 percent gravel; slightly acid, pH 6.3 by Hellige-Truog; clear smooth boundary.
- C′—19 to 23 inches (48 to 58 cm); light brownish gray (10YR 6/2) gravelly sandy loam, dark grayish brown (10YR 4/2) moist; 2 percent clay; single grain; loose, nonsticky, nonplastic; many very fine to medium roots; many very fine to medium interstitial and tubular pores; 15 percent gravel; slightly acid, pH 6.4 by Hellige-Truog; abrupt smooth boundary.
- A′b—23 to 35 inches (58 to 89 cm); dark gray (10YR 4/1) mucky very fine sandy loam, black (10YR 2/1) moist; 4 percent clay; massive; slightly hard, very friable, nonsticky, nonplastic; many very fine to medium roots; many very fine and fine tubular pores; slightly acid, pH 6.3 by Hellige-Truog; abrupt smooth boundary.
- C′′—35 to 49 inches (89 to 124 cm); very gravelly loamy coarse sand; 2 percent clay; single grain; loose, nonsticky, nonplastic; many very fine to medium roots; many very fine to medium interstitial and tubular pores; 40 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.
- A′′b—49 to 63 inches (124 to 160 cm); dark grayish brown (10YR 4/2) peaty fine sandy loam, very dark gray (10YR 3/1) moist; 4 percent clay; massive; slightly hard, very friable, nonsticky, nonplastic; many very fine to medium roots; many very fine and fine tubular pores; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.
- C′′′—63 to 71 inches (160 to 180 cm); gravelly loamy coarse sand; 2 percent clay; single grain; loose, nonsticky, nonplastic; many very fine to medium roots; many very fine to medium interstitial and tubular pores; 15 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.
- A′′′b—71 to 80 inches (180 to 203 cm); dark gray (10YR 4/1) mucky fine sandy loam, black (10YR 2/1) moist; 4 percent clay; massive; slightly hard, very friable, nonsticky, nonplastic; many very fine to medium roots; many very fine and fine tubular pores; 1 percent gravel; slightly acid, pH 6.5 by Hellige-Truog.

Type location: Plumas County, California; about 0.2 mile southeast of Campbell Cow Camp, approximately 1,200 feet south and 700 feet east of the center of sec. 14, T. 24 N., R. 5 E.; 39 degrees, 56 minutes, 1 second north latitude and 121 degrees, 22 minutes, 44 seconds west longitude; NAD27; USGS Quad: Kimshe Point, California.

Range in Characteristics

The depth to bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 40 to 47 degrees F (4 to 8 degrees C). The soil moisture control

section is dry in all parts from about August to October (about 90 days). The particle-size control section averages 2 to 6 percent clay and 2 to 25 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur from the surface of the soil to 43 inches (109 cm) below the surface from December through June and from 17 to 98 inches (43 to 250 cm) below the surface from July through November. Rock fragments on the surface range from 0 to 20 percent gravel.

The A horizon has dry color of 10YR 4/2 or 4/1. Moist color is 10YR 2/1 or 3/1. Texture is peaty very fine sandy loam, mucky very fine sandy loam, peaty fine sandy loam, or mucky fine sandy loam. The content of clay ranges from 2 to 6 percent. The content of gravel is 0 to 5 percent. Reaction is slightly acid.

The C horizon has dry color of 10YR 6/2 or the color of the fresh mineral grains. Moist color is 10YR 4/2 or the color of the fresh mineral grains. Texture is gravelly coarse sandy loam, gravelly sandy loam, very gravelly loamy coarse sand, or gravelly loamy coarse sand. The content of clay ranges from 2 to 6 percent. The content of gravel is 15 to 45 percent. Reaction is slightly acid.

The Ab horizon has dry color of 10YR 4/1, 4/2, or 5.1. Moist color is 10YR 2/1 or 3/1. Texture is mucky fine sandy loam, mucky very fine sandy loam, or fine sandy loam. The content of clay ranges from 2 to 6 percent. The content of gravel is 0 to 5 percent. Reaction is slightly acid.

Arbuckle Series

The Arbuckle series consists of very deep, well drained soils that formed in alluvium derived from mixed rock sources. These soils are on low terraces. Slopes range from 0 to 2 percent. The mean annual precipitation is about 19 inches (483 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Typic Haploxeralfs

Typical Pedon

Arbuckle gravelly loam, on a slope of 1 percent, under a cover of annual grasses, at an elevation of 110 feet (33 m). When described on 5/29/1997, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

- A1—0 to 4 inches (0 to 11 cm); brown (10YR 5/3) gravelly loam, brown (10YR 4/3) moist; 20 percent clay; strong fine and medium subangular blocky structure; hard, friable, nonsticky, slightly plastic; many very fine and fine and common medium roots; common very fine and fine tubular pores; 15 percent subrounded gravel; neutral, pH 7.0 by Hellige-Truog; abrupt wavy boundary.
- A2—4 to 9 inches (11 to 23 cm); light yellowish brown (10YR 6/4) gravelly loam, brown (10YR 4/3) moist; 23 percent clay; moderate medium subangular blocky structure; very hard, friable, nonsticky, slightly plastic; common very fine to medium roots; common fine and medium tubular pores; 2 percent patchy faint clay films in root channels and/or pores; 15 percent subrounded gravel; neutral, pH 7.0 by Hellige-Truog; gradual wavy boundary.
- Bt1—9 to 20 inches (23 to 51 cm); light yellowish brown (10YR 6/4) gravelly loam, dark grayish brown (10YR 4/2) moist; 24 percent clay; moderate medium and coarse subangular blocky structure; very hard, firm, slightly sticky, slightly plastic; common very fine to medium roots; common fine and medium tubular pores; 30 percent discontinuous distinct clay films throughout; 15 percent subrounded gravel; neutral, pH 7.0 by Hellige-Truog; gradual wavy boundary.
- Bt2—20 to 32 inches (51 to 81 cm); light yellowish brown (10YR 6/4) loam, dark grayish brown (10YR 4/2) moist; 24 percent clay; moderate medium and coarse subangular blocky structure; very hard, friable, slightly sticky, slightly plastic; few very fine and fine and common fine and medium roots; common fine and medium

tubular pores; 35 percent discontinuous distinct clay films throughout; 10 percent subrounded gravel; slightly alkaline, pH 7.5 by Hellige-Truog; gradual wavy boundary.

Bt3—32 to 49 inches (81 to 125 cm); yellowish brown (10YR 5/4) gravelly loam, brown (10YR 4/3) moist; 24 percent clay; moderate medium subangular blocky structure; very hard, friable, slightly sticky, slightly plastic; few very fine to medium roots; common fine tubular pores; 25 percent discontinuous distinct clay films throughout; 15 percent subrounded gravel; slightly alkaline, pH 7.5 by Hellige-Truog; clear wavy boundary.

2Bt4—49 to 68 inches (125 to 173 cm); brown (7.5YR 5/4) very gravelly sandy clay loam, brown (7.5YR 4/3) moist; 26 percent clay; moderate medium subangular blocky structure; extremely hard, firm, slightly sticky, slightly plastic; few very fine to medium roots; common fine tubular pores; 40 percent continuous prominent clay films throughout; 55 percent subrounded gravel; slightly alkaline, pH 7.5 by Hellige-Truog; gradual wavy boundary.

2Bt5—68 to 86 inches (173 to 219 cm); brown (7.5YR 5/4) very gravelly sandy clay loam, brown (7.5YR 4/3) moist; 21 percent clay; weak medium and coarse subangular blocky structure; hard, friable, slightly sticky, slightly plastic; few very fine to medium roots; few very fine tubular pores; 55 percent continuous prominent clay films throughout; 50 percent subrounded gravel; slightly alkaline, pH 7.5 by Hellige-Truog.

Type location: Butte County, California, United States Fish and Wildlife Service at Rancho Llano Seco, empty lot west of swallow barn; about 1.9 miles southeast of Rancho Llano Seco headquarters; approximately 7,400 feet west of 7 Mile Lane and 14,200 feet south of the line between T. 21 N. and T. 20 N.; in an unsectionized area in the Llano Seco Land Grant; 39 degrees, 35 minutes, 5 seconds north latitude and 121 degrees, 56 minutes, 8 seconds west longitude; NAD83; USGS Quad: Llano Seco, California.

Range in Characteristics

The thickness of the solum is more than 85 inches (216 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The particle-size control section averages 24 to 27 percent clay and 10 to 20 percent rock fragments, mostly gravel. Mineralogy is mixed. The estimated content of organic matter is 0.5 to 0.8 percent to a depth of 9 inches (23 cm) and less than 0.5 percent below that depth. By sum of cations, base saturation is assumed to be more than 75 percent throughout the profile. Rock fragments on the surface range from 0 to 20 percent gravel, mostly quartz and chert.

The A horizon has dry color of 10YR 5/3, 6/2, 6/3, or 6/4. Moist color is 10YR 2/2, 3/1, 4/2, or 4/3. Texture is gravelly loam. The content of clay ranges from 20 to 24 percent. The content of gravel, mostly quartz and chert, ranges from 15 to 30 percent. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 10YR 5/4, 6/4, or 7/4. Moist color is 10YR 4/2 or 4/3 or 7.5YR 4/3 or 5/4. Texture is gravelly loam, loam, or clay loam. The content of clay ranges from 24 to 35 percent. The content of gravel is 10 to 30 percent. Reaction ranges from slightly acid to slightly alkaline.

The 2Bt or BC horizon has dry color of 7.5YR 5/4 or 6/4. Moist color is 7.5YR 4/3 or 5/4. Texture is very gravelly or extremely gravelly sandy clay loam. The content of clay ranges from 21 to 26 percent. The content of gravel is 45 to 80 percent. Reaction is slightly alkaline.

Argonaut Taxadjunct

The Argonaut taxadjunct consists of moderately deep, well drained soils that formed in colluvium and residuum derived from mixed metavolcanic and metamorphosed intrusive igneous rocks. These soils are on metamorphic Sierra Nevada foothills. Slopes range from 2 to 30 percent. The mean annual precipitation is about 30 inches (762 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine, mixed, superactive, thermic Ultic Haploxeralfs

Typical Pedon

Argonaut loam, on a south-facing slope of 13 percent, under a cover of blue oak, foothill pine, wild oat, and annual ryegrass, at an elevation of 580 feet (177 m). When described on 5/22/2000, the soil was dry to a depth of 8 inches (20 cm) and moist from 8 to 30 inches (20 to 76 cm). (Colors are for dry soil unless otherwise noted.)

- A—0 to 2 inches (0 to 5 cm); brown (7.5YR 5/4) loam, dark brown (7.5YR 3/4) moist; 18 percent clay; moderate very fine and fine subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; many very fine roots throughout; many very fine and fine tubular pores; 10 percent fine spherical yellowish red (5YR 5/6 dry) oxidized iron masses throughout; 2 percent subangular quartz gravel and 8 percent subangular metavolcanic gravel; moderately acid, pH 6.0 by Hellige-Truog; clear smooth boundary.
- Bt1—2 to 8 inches (5 to 20 cm); brown (7.5YR 4/4) clay loam, dark reddish brown (5YR 3/4) moist; 29 percent clay; moderate very fine and fine subangular blocky structure; moderately hard, friable, moderately sticky, moderately plastic; many very fine roots throughout; many very fine and fine tubular pores; 15 percent discontinuous distinct clay films on faces of peds; 2 percent subangular quartz gravel and 8 percent subangular metavolcanic gravel; slightly acid, pH 6.3 by Hellige-Truog; clear wavy boundary.
- Bt2—8 to 14 inches (20 to 36 cm); brown (7.5YR 4/4) clay, dark reddish brown (5YR 3/4) moist; 43 percent clay; strong very fine and fine subangular blocky structure; very hard, firm, very sticky, very plastic; common fine, few coarse, and many very fine roots throughout; many very fine and fine and common medium tubular pores; 30 percent discontinuous distinct clay films on faces of peds; 2 percent subangular quartz gravel and 8 percent subangular metavolcanic gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt wavy boundary.
- Bt3—14 to 20 inches (36 to 51 cm); brown (7.5YR 4/4) clay, dark reddish brown (5YR 3/4) moist; 45 percent clay; strong fine and medium subangular blocky structure; very hard, very firm, very sticky, very plastic; few medium and many very fine roots throughout; many very fine and fine tubular pores; 40 percent discontinuous distinct clay films on faces of peds; 1 percent subangular quartz gravel and 4 percent subangular metavolcanic gravel; moderately acid, pH 6.0 by Hellige-Truog; clear smooth boundary.
- BCt1—20 to 26 inches (51 to 66 cm); strong brown (7.5YR 5/6) clay, yellowish red (5YR 4/6) moist; 40 percent clay; strong fine and medium subangular blocky structure; hard, firm, very sticky, very plastic; common fine, few medium, and few very fine roots throughout; common fine and many very fine tubular pores; 10 percent slickensides and 40 percent discontinuous prominent clay films on faces of peds; 1 percent subangular quartz gravel and 4 percent subangular metavolcanic gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.
- BCt2—26 to 30 inches (66 to 76 cm); yellowish brown (10YR 5/6) clay loam, strong brown (7.5YR 4/6) moist; 36 percent clay; moderate fine and medium subangular

blocky structure; moderately hard, firm, moderately sticky, moderately plastic; common very fine and fine and few medium roots throughout; many very fine tubular pores; 4 percent slickensides and 20 percent discontinuous distinct clay films on faces of peds; 1 percent subangular quartz gravel and 4 percent subangular metavolcanic gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual wavy boundary.

Cr—30 inches (76 cm); moderately cemented metamorphic bedrock; few fine and medium roots on top of the horizon.

Type location: Butte County, California; about 2.2 miles northwest of Bangor, approximately 400 feet north and 350 feet east of the southwest corner of sec. 20, T. 18 N., R. 5 E.; 39 degrees, 23 minutes, 49.88 seconds north latitude and 121 degrees, 26 minutes, 36.37 seconds west longitude; NAD83; USGS Quad: Bangor, California.

Range in Characteristics

The depth to paralithic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 59 to 65 degrees F (15 to 18 degrees C). The soil moisture control section is dry in all parts from about June 1 to October 15 (about 150 days). The particle-size control section averages 35 to 50 percent clay and 5 to 20 percent rock fragments, mostly gravel. Mineralogy is mixed. Rock fragments on the surface range from 0 to 5 percent gravel and 0 to 5 percent cobbles.

The A horizon has dry color of 7.5YR 4/4, 4/6, or 5/4 or 5YR 4/6. Moist color is 7.5YR 3/4 or 5YR 4/4. Texture is loam or clay loam. The content of clay ranges from 18 to 30 percent. The content of gravel is 5 to 10 percent. By sum of cations, base saturation ranges from 60 to 70 percent. The content of organic matter is 2 to 6 percent. Reaction ranges from moderately acid to neutral.

The upper part of the Bt horizon has dry color of 7.5YR 4/4, 4/6, or 5/6 or 5YR 4/6 or 5/6. Moist color is 5YR 3/4 or 4/4. Texture is clay loam. The content of clay ranges from 28 to 40 percent. The content of gravel is 5 to 12 percent. By sum of cations, base saturation ranges from 65 to 75 percent. The content of organic matter is 1 to 3 percent. Reaction ranges from moderately acid to neutral.

The lower part of the Bt horizon has dry color of 7.5YR 4/4, 4/6, or 5/6 or 5YR 4/6 or 5/6. Moist color is 5YR 3/4 or 4/4. Texture is clay or gravelly clay. The content of clay ranges from 40 to 50 percent. The content of gravel is 3 to 20 percent, the content of cobbles is 0 to 10 percent, and the content of stones is 0 to 10 percent. By sum of cations, base saturation ranges from 65 to 75 percent. The content of organic matter is 1 to 2 percent. Reaction ranges from moderately acid to neutral.

The BCt horizon has dry color of 10YR 5/6 or 7.5YR 5/4 or 5/6. Moist color is 7.5YR 4/6 or 5YR 3/4 or 4/6. Texture is clay loam or clay. The content of clay ranges from 35 to 45 percent. The content of gravel is 5 to 10 percent. By sum of cations, base saturation ranges from 75 to 85 percent. The content of organic matter is 0 to 1 percent. Reaction is slightly acid or neutral.

The Argonaut taxadjunct is a taxadjunct because base saturation is less than is defined as the range for the series. This difference does not significantly affect the use, management, or interpretations of the soils

Auburn Series

The Auburn series consists of shallow, well drained soils that formed in material weathered from basic metavolcanic rocks. These soils are on metamorphic Sierra Nevada foothills. Slopes range from 3 to 75 percent. The mean annual precipitation is about 28 inches (711 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Loamy, mixed, superactive, thermic Lithic Haploxerepts

Typical Pedon

Auburn loam, on a slope of 3 to 8 percent, at an elevation of 1,660 feet (503 m).
(Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); brown (7.5YR 5/4) loam, reddish brown (5YR 4/4) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; many very fine roots; many very fine and fine tubular pores; slightly acid; abrupt smooth boundary.

Bw1—2 to 10 inches (5 to 25 cm); reddish brown (5YR 5/4) loam, reddish brown (5YR 4/4) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; common very fine to medium roots; many fine and few very fine and medium tubular pores; slightly acid; abrupt irregular boundary.

Bw2—10 to 17 inches (25 to 43 cm); yellowish red (5YR 5/6) loam, reddish brown (5YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; common very fine to medium roots; many fine and few very fine and medium tubular pores; slightly acid; abrupt irregular boundary.

R—17 inches; indurated amphibolite schist bedrock.

Type location: Yuba County, California; about 3.6 miles northeast of Camp Far West Reservoir Dam, approximately 500 feet north and 500 feet east of the southwest corner of sec. 34, T. 15 N., R. 6 E.; 39 degrees, 6 minutes, 8 seconds north latitude and 121 degrees, 18 minutes, 3 seconds west longitude; NAD27; USGS Quad: Camp Far West, California.

Range in Characteristics

The depth to lithic contact ranges from 10 to 28 inches (25 to 71 cm) and is less than 20 inches (51 cm) in 50 percent or more of each pedon. The mean annual soil temperature is 59 to 64 degrees F (15 to 18 degrees C). The particle-size control section ranges from 12 to 25 percent clay. Mineralogy is mixed. By sum of cations, base saturation ranges from 60 to 85 percent. The content of organic matter is 1 to 2 percent to a depth of 17 inches (43 cm). The content of gravel is 2 to 15 percent, and the content of cobbles is 3 to 5 percent.

The A horizon has dry color of 7.5YR 5/4 or 4/4. Moist color is 7.5YR 4/4 or 3/4 or 5YR 4/4 or 3/4. Texture is loam or gravelly loam. The content of clay ranges from 12 to 25 percent. Reaction ranges from moderately acid to neutral.

The Bw horizon has dry color of 5YR 5/4 or 5/6. Moist color is 5YR 4/4 or 3/4. Texture is loam or gravelly loam. The content of clay ranges from 12 to 25 percent. Reaction ranges from moderately acid to neutral.

Beatsonhollow Series

The Beatsonhollow series consists of shallow, poorly drained soils that formed in residuum weathered from basalt. These soils are in swales on top of basalt plateaus on volcanic Sierra Nevada foothills. Slopes range from 2 to 5 percent. The mean annual precipitation is about 35 inches (889 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Loamy-skeletal, mixed, superactive, thermic Lithic Haplohumults

Typical Pedon

Beatsonhollow gravelly loam, on a north-facing slope of 3 percent, under a cover of

annual grasses and forbs, at an elevation of 1,325 feet (404 m). When described on 10/18/2000, the soil was moist from 0 to 10 inches (0 to 25 cm). (Colors are for dry soil unless otherwise noted.)

- A1—0 to 3 inches (0 to 8 cm); brown (10YR 5/3) gravelly loam, dark brown (7.5YR 3/2) moist; 18 percent clay; weak fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many fine roots throughout; many very fine irregular pores; 10 percent fine distinct irregular yellowish red (5YR 4/6 moist) oxidized iron masses in the matrix; 5 percent basalt cobbles and 15 percent basalt gravel; moderately acid, pH 6.0 by Hellige-Truog; clear smooth boundary.
- A2—3 to 10 inches (8 to 25 cm); brown (10YR 4/3) cobbly loam, dark brown (7.5YR 3/2) moist; 22 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common fine and medium roots throughout; common fine irregular pores; 10 percent basalt gravel and 20 percent basalt cobbles; strongly acid, pH 5.5 by Hellige-Truog; gradual smooth boundary.
- Bt—10 to 17 inches (25 to 43 cm); brown (10YR 4/3) very cobbly loam, dark brown (7.5YR 3/2) moist; 26 percent clay; moderate medium subangular blocky structure; slightly hard, friable, moderately sticky, slightly plastic; common fine and few medium roots throughout; common fine and few very fine tubular pores; 15 percent discontinuous faint clay films on surfaces along pores; 15 percent basalt gravel and 35 percent basalt cobbles; very strongly acid, pH 5.0 by Hellige-Truog; abrupt smooth boundary.
- R—17 inches (43 cm); indurated basalt bedrock.

Type location: Butte County, California; about 5.5 miles north of Oroville, approximately 1,000 feet west and 1,000 feet south of the northeast corner of sec. 17, T. 20 N., R. 4 E.; 39 degrees, 35 minutes, 42.22 seconds north latitude and 121 degrees, 32 minutes, 34.3 seconds west longitude; NAD83; USGS Quad: Oroville, California.

Range in Characteristics

The depth to lithic bedrock is 10 to 20 inches (25 to 51 cm). The mean annual soil temperature is 61 to 64 degrees F (16 to 18 degrees C). The soil moisture control section is dry in all parts from about May to November (about 150 to 200 days). The particle-size control section averages 22 to 29 percent clay and 35 to 65 percent rock fragments, mostly cobbles. Mineralogy is mixed. By sum of cations, base saturation ranges from 4 to 7 percent. A fluctuating water table can occur between the top of the bedrock and the surface of the soil from November through April. Rock fragments on the surface range from 10 to 20 percent gravel and 0 to 15 percent cobbles.

The A horizon has dry color of 7.5YR 3/4, 4/3, or 4/4 or 10YR 3/4, 4/3, 4/4, or 5/3. Moist color is 7.5YR 2/2, 3/2, or 3/3 or 10YR 2/2, 3/2, or 3/3. Texture is loam, gravelly loam, very gravelly loam, or cobbly loam. The content of clay ranges from 14 to 22 percent. The horizon has 10 to 25 percent gravel and 0 to 20 percent cobbles. The content of organic matter is 4 to 8 percent. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 7.5YR 4/3 or 4/4 or 10YR 4/3 or 4/4. Moist color is 7.5YR 3/2, 3/3, or 3/4 or 10YR 3/2, 3/3, or 3/4. Texture is gravelly loam, very gravelly loam, extremely cobbly loam, cobbly loam, very cobbly loam, very cobbly clay loam, or extremely cobbly clay loam. The content of clay ranges from 20 to 29 percent. The horizon has 10 to 30 percent gravel and 5 to 45 percent cobbles. The content of organic matter is 1.5 to 8 percent. Reaction is moderately acid or strongly acid.

Beatsonhollow Taxadjunct

The Beatsonhollow taxadjunct consists of shallow, somewhat poorly drained soils that formed in residuum derived from basalt. These soils are on mounds on top of basalt plateaus on Sierra Nevada foothills. Slopes range from 2 to 30 percent. The mean annual precipitation is about 25 inches (635 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Loamy, mixed, superactive, thermic Lithic Haplohumults

Typical Pedon

Beatsonhollow taxadjunct fine sandy loam, on a west-facing slope of 2 percent, under a cover of annual grasses and forbs, at an elevation of 500 feet (152 m). When described on 6/19/2001, the soil was dry to a depth of 10 inches (25 cm) and slightly moist from 10 to 18 inches (25 to 46 cm). (Colors are for dry soil unless otherwise noted.)

A—0 to 1 inch (0 to 3 cm); brown (7.5YR 5/4) fine sandy loam, brown (7.5YR 4/3) moist; 15 percent clay; strong thin platy structure; slightly hard, friable, nonsticky, nonplastic; many very fine roots; common very fine tubular pores; 20 percent very fine irregular oxidized iron masses; 10 percent subangular basalt gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.

Bt1—1 to 6 inches (3 to 15 cm); strong brown (7.5YR 5/6) gravelly loam, dark brown (7.5YR 3/4) moist; 18 percent clay; moderate fine subangular blocky structure; hard, friable, slightly sticky, slightly plastic; few very fine roots; few very fine tubular pores; 15 percent discontinuous distinct clay films on faces of peds; 20 percent subangular basalt gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

Bt2—6 to 10 inches (15 to 25 cm); strong brown (7.5YR 5/6) gravelly loam, dark brown (7.5YR 3/4) moist; 22 percent clay; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine roots; few very fine tubular pores; 20 percent discontinuous distinct clay films on faces of peds; 20 percent subangular basalt gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

Bt3—10 to 15 inches (25 to 38 cm); brown (7.5YR 5/4) gravelly loam, dark reddish brown (5YR 3/4) moist; 25 percent clay; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine roots; few fine and common very fine tubular pores; 25 percent discontinuous prominent clay films on faces of peds; 20 percent subangular basalt gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

Bt4—15 to 18 inches (38 to 46 cm); yellowish red (5YR 5/6) very gravelly loam, dark reddish brown (5YR 3/4) moist; 27 percent clay; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine roots; few fine and common very fine tubular pores; 25 percent discontinuous prominent clay films on faces of peds; 40 percent subangular basalt gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

R—18 inches (46 cm); indurated basalt bedrock.

Type location: Butte County, California; about 2.8 miles northwest of Oroville, on Sugarloaf Peak, approximately 200 feet west and 2,700 feet north of the southeast corner of sec. 3, T. 19 N., R. 3 E.; 39 degrees, 31 minutes, 54 seconds north latitude and 121 degrees, 36 minutes, 51 seconds west longitude; NAD83; USGS Quad: Oroville, California.

Range in Characteristics

The depth to lithic bedrock is 10 to 20 inches (25 to 51 cm). The mean annual soil temperature is 61 to 64 degrees F (16 to 18 degrees C). The particle-size control

section averages 18 to 27 percent clay and 20 to 30 percent rock fragments, mostly gravel. Mineralogy is mixed. By sum of cations, base saturation ranges from 4 to 7 percent. A fluctuating water table can occur between the top of the bedrock and a depth of 5 inches (13 cm) from November through April. Rock fragments on the surface range from 0 to 10 percent gravel, 0 to 15 percent cobbles, and 0 to 5 percent stones.

The A horizon has dry color of 7.5YR 5/4 or 10YR 4/3 or 5/3. Moist color is 7.5YR 3/2, 3/3, or 4/3. Texture is fine sandy loam or gravelly loam. The content of clay ranges from 15 to 18 percent. The content of gravel is 5 to 20 percent. The content of organic matter is 4 to 8 percent. Redoximorphic features range from 10 to 20 percent oxidized masses of iron. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 7.5YR 5/4 or 5/6, 10YR 5/3 or 5/4, or 5YR 5/6. Moist color is 7.5YR 3/2, 3/3, 3/4, or 4/3 or 5YR 3/4. Texture is gravelly loam, loam, or very gravelly loam. The content of clay ranges from 18 to 27 percent. The content of gravel is 5 to 40 percent. The content of organic matter is 1.5 to 5 percent. Redoximorphic features range from 0 to 10 percent oxidized masses of iron. Reaction ranges from strongly acid to slightly acid.

The Beatsonhollow taxadjunct in map unit 342 is a taxadjunct because the soil is on mounds, the particle-size control section is loamy, and the soil has an ochric epipedon. These differences do not significantly affect the use, management, or interpretations of the soil.

Beecee Series

The Beecee series consists of very deep, well drained soils that formed in tephra and colluvium derived from volcanic rocks over residuum derived from volcanic rocks. These soils are on side slopes on volcanic ridges in the Cascade Mountains. Slopes range from 30 to 70 percent. The mean annual precipitation is about 78 inches (1,981 mm), and the mean annual air temperature is about 50 degrees F (10 degrees C).

Taxonomic class: Medial-skeletal, mixed, mesic Typic Haploxerands

Typical Pedon

Beecee very gravelly medial loam, on an east-facing slope of 46 percent, under a cover of California black oak and scattered mixed conifers, at an elevation of 3,880 feet (1,183 m). When described on 11/30/1995, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 0.5 inch (0 to 1 cm); leaves, needles, and twigs.

Oe—0.5 to 1 inch (1 to 2 cm); partially decomposed leaves, needles, and twigs.

A—1 inch to 4 inches (2 to 9 cm); yellowish brown (10YR 5/4) very gravelly medial loam, dark brown (7.5YR 3/2) moist; 19 percent clay; weak fine and medium subangular blocky structure parting to weak fine granular; soft, very friable, nonsticky, nonplastic; many very fine and fine and common medium roots; many very fine and fine tubular and common medium and coarse irregular pores; 35 percent subangular gravel; moderately acid, pH 6.0 by pH meter 1:1 water; NaF pH 10.7; gradual smooth boundary.

Bt1—4 to 8 inches (9 to 20 cm); brown (7.5YR 5/4) very gravelly medial loam, dark brown (7.5YR 3/3) moist; 16 percent clay; weak fine subangular blocky structure parting to moderate very fine granular; soft, very friable, slightly sticky, nonplastic; many very fine to medium roots; many very fine and fine tubular and many medium irregular pores; few faint and distinct discontinuous clay films on faces of peds and in pores; 45 percent subangular gravel and 2 percent subangular cobbles; moderately acid, pH 5.6 by pH meter 1:1 water; NaF pH 10.7; gradual smooth boundary.

- Bt2—8 to 15 inches (20 to 37 cm); brown (7.5YR 5/4) very gravelly medial loam, dark brown (7.5YR 3/4) moist; 15 percent clay; weak medium subangular blocky structure parting to moderate fine granular; soft, very friable, slightly sticky, nonplastic; many very fine and fine, many medium, and common coarse roots; many very fine and fine tubular and many medium irregular pores; few faint discontinuous clay films on faces of peds and in pores; 55 percent subangular gravel and 3 percent subangular cobbles; strongly acid, pH 5.5 by pH meter 1:1 water; NaF pH 10.5; gradual smooth boundary.
- Bt3—15 to 22 inches (37 to 55 cm); strong brown (7.5YR 4/6) extremely gravelly medial loam, reddish brown (5YR 4/3) moist; 16 percent clay; weak fine and medium subangular blocky structure parting to weak fine granular; slightly sticky, nonplastic; many very fine to medium roots; many very fine and fine tubular and many medium irregular pores; few faint discontinuous clay films on faces of peds and in pores; 65 percent subangular gravel and 5 percent subangular cobbles; strongly acid, pH 5.5 by pH meter 1:1 water; NaF pH 10.4; gradual smooth boundary.
- Bt4—22 to 31 inches (55 to 78 cm); reddish yellow (7.5YR 6/6) extremely gravelly loam, reddish brown (5YR 4/3) moist; 17 percent clay; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky, nonplastic; many very fine to medium and common coarse roots; many very fine and fine tubular, common medium irregular, and common very coarse tubular pores; few faint discontinuous clay films on faces of peds and in pores; 65 percent subangular gravel and 3 percent subangular cobbles; strongly acid, pH 5.5 by meter 1:1 water; NaF pH 10.2; gradual smooth boundary.
- Bt5—31 to 44 inches (78 to 111 cm); brownish yellow (10YR 6/6) very gravelly loam, brown (7.5YR 4/4) moist; 19 percent clay; moderate very fine granular structure; soft, very friable, slightly sticky, nonplastic; many very fine, many fine, and common medium and coarse roots; many very fine and fine tubular and common medium and coarse irregular pores; few faint discontinuous clay films on faces of peds and in pores; 45 percent subangular gravel and 3 percent subangular cobbles; strongly acid, pH 5.5 by pH meter 1:1 water; NaF pH 10.0; clear smooth boundary.
- 2Bt6—44 to 59 inches (111 to 149 cm); yellowish brown (10YR 5/6) very gravelly loam, brown (7.5YR 4/4) moist; 24 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine and fine and common medium roots; many very fine and fine irregular and tubular and common medium irregular pores; many distinct discontinuous clay films on faces of peds and in pores; 45 percent subangular gravel, 5 percent subangular cobbles, and 5 percent subangular stones; strongly acid, pH 5.6 by pH meter 1:1 water; NaF pH 9.8; clear irregular boundary.
- 2Bt7—59 to 68 inches (149 to 172 cm); yellowish brown (10YR 5/8) very gravelly loam, brown (7.5YR 4/4) moist; 27 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine and fine roots; many very fine and fine tubular pores; many distinct continuous clay films on faces of peds and in pores; 30 percent subangular gravel, 10 percent subangular cobbles, and 10 percent subangular stones; moderately acid, pH 5.6 by pH meter 1:1 water; NaF pH 9.7; clear irregular boundary.
- 2Bt8—68 to 86 inches (172 to 218 cm); brownish yellow (10YR 6/6) very stony loam, brown (7.5YR 5/4) moist; 26 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine and fine roots; many very fine and fine tubular pores; many distinct continuous clay films on faces of peds and in pores; 20 percent subangular gravel, 20

percent subangular cobbles, and 20 percent subangular stones; moderately acid, pH 5.8 by pH meter 1:1 water; NaF pH 9.6.

Type location: Butte County, California; about 2.2 miles southeast of Inskip, approximately 1,500 feet north and 850 feet east of the southwest corner of sec. 3, T. 24 N., R. 4 E.; 39 degrees, 57 minutes, 44.82 seconds north latitude and 121 degrees, 31 minutes, 5.65 seconds west longitude; NAD27; USGS Quad: Stirling City, California.

Range in Characteristics

The depth to paralithic bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 52 to 58 degrees F (11 to 14 degrees C). The soil moisture control section is dry in all parts from about July to October (about 90 days). The particle-size control section averages 12 to 18 percent clay and 35 to 70 percent rock fragments, mostly gravel. Mineralogy is mixed. Acid oxalate extractable Al plus $\frac{1}{2}$ Fe ranges from 2 to 2.5 to a depth of 21.7 inches (55 cm). P retention ranges from 91 to 97 to a depth of 21.7 inches (55 cm). Rock fragments on the surface range from 15 to 40 percent gravel, 0 to 20 percent cobbles, 0 to 15 percent stones, and 0 to 10 percent boulders. Some pedons have a Bw horizon.

The A horizon has dry color of 5YR 6/4; 7.5YR 5/2, 5/3, 6/2, or 6/3; or 10YR 5/4. Moist color is 5YR 3/2, 3/3, or 4/3 or 7.5YR 3/2, 3/3, 3/4, or 4/3. Texture is gravelly medial loam, very gravelly medial loam, gravelly medial sandy loam, or very gravelly medial sandy loam. The content of clay ranges from 8 to 20 percent. The horizon has 25 to 40 percent gravel, 0 to 15 percent cobbles, and 0 to 5 percent stones. The content of organic matter is 10 to 15 percent. By sum of cations, base saturation ranges from 20 to 30 percent. By ammonium acetate, CEC ranges from 25 to 35. NaF pH is 10.0 to 11.0. Reaction ranges from moderately acid to neutral.

The upper part of the Bt horizon has dry color of 5YR 5/4 or 6/4; 7.5YR 4/6, 5/4, 5/6, 6/3, 6/4, 6/6, or 7/6; or 10YR 6/4. Moist color is 5YR 3/3, 4/3, or 4/4; 7.5YR 3/3, 3/4, or 4/4; or 10YR 3/4 or 4/4. Texture is gravelly medial loam, very gravelly medial loam, extremely gravelly medial loam, gravelly medial sandy loam, very gravelly medial sandy loam, or extremely gravelly medial sandy loam. The content of clay ranges from 10 to 20 percent. The content of gravel is 20 to 70 percent. The content of cobbles is 0 to 20 percent. The content of stones also is 0 to 20 percent. The content of organic matter is 3 to 8 percent. By sum of cations, base saturation ranges from 8 to 13 percent. By ammonium acetate, CEC ranges from 18 to 25. NaF pH is 9.8 to 11.0. Reaction ranges from strongly acid to slightly acid.

The lower part of the Bt horizon has dry color of 5YR 5/6 or 6/6; 7.5YR 6/6, 7/4, or 7/6; or 10YR 6/4, 6/6, or 7/6. Moist color is 5YR 4/3 or 4/6; 7.5YR 4/4, 5/4, or 5/6; or 10YR 4/4. Texture is gravelly loam, very gravelly loam, extremely gravelly loam, gravelly sandy loam, very gravelly sandy loam, very cobbly sandy loam, or extremely gravelly sandy loam. The content of clay ranges from 12 to 22 percent. The content of gravel is 20 to 75 percent, the content of cobbles is 0 to 30 percent, and the content of stones is 0 to 20 percent. The content of organic matter is 1 to 3 percent. By sum of cations, base saturation ranges from 15 to 25 percent. By ammonium acetate, CEC ranges from 16 to 21. NaF pH is 9.0 to 10.3. Reaction ranges from strongly acid to slightly acid.

The 2Bt horizon has dry color of 7.5YR 6/4 or 7/4 or 10YR 5/4, 5/6, 5/8, 6/3, 6/4, or 6/6. Moist color is 7.5YR 4/3, 4/4, or 5/4 or 10YR 3/4, 4/3, 4/4, or 5/4. Texture is very gravelly loam, very stony loam, very gravelly sandy loam, or very gravelly sandy clay loam. The content of clay ranges from 18 to 27 percent. The horizon has 20 to 60 percent gravel, 0 to 30 percent cobbles, and 0 to 30 percent stones. The content of organic matter is 0.2 to 1 percent. By sum of cations, base saturation ranges from 20

to 40 percent. By ammonium acetate, CEC ranges from 15 to 20. NaF pH is 9.0 to 10.0. Reaction ranges from very strongly acid to slightly acid.

Bigridge Series

The Bigridge series consists of deep, well drained soils that formed in colluvium and residuum derived from metavolcanic and metasedimentary rocks. These soils are on ridgetops and side slopes on Sierra Nevada foothills and mountains. Slopes range from 2 to 70 percent. The mean annual precipitation is about 48 inches (1,219 mm), and the mean annual air temperature is about 57 degrees F (14 degrees C).

Taxonomic class: Fine-loamy, mixed, active, mesic Ultic Haploxeralfs

Typical Pedon

Bigridge loam, on a north west-facing slope of 56 percent, under a cover of whiteleaf manzanita, toyon, interior live oak, and ponderosa pine, at an elevation of 2,000 feet (610 m). When described on 7/27/1999, the soil was moist throughout. (Colors are for dry soil unless otherwise noted.)

- Oe—0 to 1 inch (0 to 3 cm); moderately decomposed plant material; abrupt smooth boundary.
- A—1 to 5 inches (3 to 13 cm); brown (7.5YR 5/4) loam, dark reddish brown (5YR 3/3) moist; 16 percent clay; moderate fine subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; many fine roots throughout; common fine tubular and common medium irregular pores; 15 percent subangular metavolcanic gravel; moderately acid, pH 5.7 by pH meter 1:1 water; abrupt wavy boundary.
- BAt—5 to 9 inches (13 to 23 cm); yellowish red (5YR 5/6) gravelly loam, dark reddish brown (5YR 3/4) moist; 19 percent clay; strong fine subangular blocky structure; soft, friable, slightly sticky, slightly plastic; many very fine and fine and common medium roots throughout; many fine and common medium tubular pores; 20 percent discontinuous distinct clay films on faces of peds; 25 percent subangular metavolcanic gravel; moderately acid, pH 5.6 by pH meter 1:1 water; abrupt wavy boundary.
- Bt1—9 to 15 inches (23 to 38 cm); yellowish red (5YR 5/6) gravelly loam, dark reddish brown (5YR 3/4) moist; 20 percent clay; strong fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common fine and medium and few coarse roots throughout; many fine and common medium tubular pores; 20 percent discontinuous distinct clay films on faces of peds and 20 percent continuous distinct clay films on surfaces along pores; 20 percent subangular metavolcanic gravel; moderately acid, pH 5.8 by pH meter 1:1 water; clear wavy boundary.
- Bt2—15 to 20 inches (38 to 51 cm); yellowish red (5YR 5/6) gravelly loam, dark red (2.5YR 3/6) moist; 21 percent clay; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common fine and few coarse roots throughout; common fine and few medium tubular pores; 40 percent continuous prominent clay films on surfaces along pores; 25 percent subangular metavolcanic gravel; moderately acid, pH 5.9 by pH meter 1:1 water; clear wavy boundary.
- BCt1—20 to 27 inches (51 to 69 cm); yellowish red (5YR 5/6) very gravelly loam, dark reddish brown (2.5YR 3/4) moist; 20 percent clay; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few fine and coarse roots throughout; many fine and few medium tubular pores; 40 percent continuous prominent clay films on bottom surfaces of rock fragments; 50 percent

subangular metavolcanic gravel; slightly acid, pH 6.1 by pH meter 1:1 water; abrupt smooth boundary.

BCt2—27 to 36 inches (69 to 91 cm); yellowish red (5YR 5/6) extremely gravelly loam, dark reddish brown (2.5YR 3/4) moist; 17 percent clay; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few fine, common coarse, and few very coarse roots throughout; common fine tubular pores; 10 percent discontinuous faint clay films on faces of peds; 85 percent subangular metavolcanic gravel; slightly acid, pH 6.1 by pH meter 1:1 water; abrupt smooth boundary.

BCt3—36 to 51 inches (91 to 129 cm); reddish yellow (7.5YR 7/6) very gravelly loam, yellowish red (5YR 5/8) moist; 18 percent clay; weak fine subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; common fine to coarse roots throughout; few fine tubular pores; 60 percent continuous distinct clay films on surfaces along pores; 40 percent subangular metavolcanic gravel; slightly acid, pH 6.1 by pH meter 1:1 water; abrupt smooth boundary.

Crt—51 to 62 inches (129 to 157 cm); vertically oriented, highly weathered, paralithic greenschist; few very fine and coarse roots in cracks; 60 percent continuous prominent clay films on rock fragments.

Type location: Butte County, California; about 6.25 miles northeast of Oroville Dam, approximately 1,300 feet west and 750 feet south of the northeast corner of sec. 9, T. 20 N., R. 5 E.; 39 degrees, 36 minutes, 41.47 seconds north latitude and 121 degrees, 24 minutes, 51.65 seconds west longitude; NAD83; USGS Quad: Oroville Dam, California.

Range in Characteristics

The depth to paralithic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 53 to 59 degrees F (12 to 14 degrees C). The soil moisture control section is dry in all parts from about June to October (about 120 days). The particle-size control section averages 18 to 27 percent clay and 5 to 35 percent rock fragments, mostly gravel. Mineralogy is mixed. The content of organic matter is 1 to 4 percent to a depth of 15 inches (38 cm) and is less than 1 percent from a depth of 15 to 51 inches (38 to 129 cm). By sum of cations, base saturation is 39 to 50 percent from 9 to 20 inches (23 to 51 cm) and is 50 to 75 percent from 20 to 51 inches (51 to 129 cm). Rock fragments on the surface range from 0 to 30 percent gravel, 0 to 5 percent cobbles, and 0 to 5 percent stones. In some pedons the lower part of the Bt horizon is silty clay with up to 50 percent clay. Some pedons do not have a BCt horizon.

The A horizon has dry color of 5YR 7/4 or 7/6; 7.5YR 4/2, 5/4, 6/4, or 7/4; or 10YR 6/3. Moist color is 5YR 2.5/1, 3/3, 3/4, 4/4, 5/4, or 4/6 or 7.5YR 4/3, 4/4, or 4/6. Texture is loam or gravelly loam with a high content of silt. The content of clay ranges from 15 to 25 percent. The content of gravel is 5 to 25 percent. Reaction ranges from moderately acid to neutral.

The BA_t horizon has dry color of 7.5YR 5/4 or 6/6, 5YR 5/6 or 7/6, or 2.5YR 7/6. Moist color is 7.5YR 4/6, 5YR 3/4 or 4/6, or 2.5YR 3/6 or 5/6. Texture is gravelly loam, loam, clay loam, or gravelly clay loam with a high content of silt. The content of clay ranges from 19 to 30 percent. The content of gravel is 10 to 25 percent. Reaction ranges from moderately acid to neutral.

The B_t horizon has dry color of 5YR 5/6, 6/6, 6/8, 7/4, 7/6, 7/8, or 8/4; 2.5YR 4/8, 5/6, 6/6, 7/6, or 7/8; or 7.5YR 5/4 or 6/6. Moist color is 5YR 3/4, 3/6, 4/4, 4/6, 5/6, or 5/8 or 2.5YR 3/6, 4/6, 5/6, 6/6, or 5/8. Texture is gravelly loam, gravelly clay loam, loam, clay loam, or silty clay loam with a high content of silt. The content of clay ranges from 18 to 35 percent. The horizon has 5 to 25 percent gravel and 0 to 10 percent cobbles. Reaction ranges from very strongly acid to neutral.

The BCt horizon has dry color of 2.5YR 7/8, 5YR 5/6 or 6/6, or 7.5YR 7/6. Moist color is 2.5YR 3/4, 4/6, or 5/8 or 5YR 5/8. Texture is extremely gravelly loam, very gravelly clay loam, or extremely gravelly clay loam with a high content of silt. The content of clay ranges from 15 to 35 percent. The content of gravel is 40 to 85 percent. Reaction ranges from very strongly acid to slightly acid.

Billscabin Series

The Billscabin series consists of very deep, somewhat excessively drained soils that formed in colluvium and residuum weathered from quartz diorite. These soils are on side slopes on granitic Sierra Nevada mountains. Slopes range from 2 to 70 percent. The mean annual precipitation is about 75 inches (1,905 mm), and the mean annual air temperature is about 53 degrees F (12 degrees C).

Taxonomic class: Loamy-skeletal, isotic, mesic Typic Dystrochrepts

Typical Pedon

Billscabin gravelly sandy loam, on a northwest-facing slope of 51 percent, under a cover of mixed conifers, at an elevation of 4,575 feet (1,394 m). When described on 7/31/1997, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

- Oi—0 to 2 inches (0 to 5 cm); slightly decomposed litter of needles, leaves, and twigs.
- A1—2 to 5 inches (5 to 13 cm); dark grayish brown (10YR 4/2) gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; 5 percent clay; weak very fine subangular blocky structure parting to single grain; loose, very friable, nonsticky, nonplastic; common very fine and fine roots; many very fine interstitial pores; 25 percent gravel; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 11.5; abrupt smooth boundary.
- A2—5 to 14 inches (13 to 36 cm); pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; 10 percent clay; weak fine subangular blocky structure parting to single grain; soft, very friable, nonsticky, nonplastic; common very fine to medium roots; many very fine interstitial pores; 40 percent gravel; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 10.5; abrupt smooth boundary.
- Bw—14 to 27 inches (36 to 69 cm); very pale brown (10YR 7/3) very gravelly sandy loam, yellowish brown (10YR 5/4) moist; 15 percent clay; weak fine subangular blocky structure parting to single grain; soft, very friable, nonsticky, nonplastic; common very fine to coarse roots; common very fine tubular pores; common mica flakes; 36 percent gravel and 10 percent stones; moderately acid, pH 5.8 by Hellige-Truog; NaF pH 10.0; abrupt smooth boundary.
- C1—27 to 37 inches (69 to 94 cm); very pale brown (10YR 8/2) very gravelly loamy sand, light yellowish brown (10YR 6/4) moist; 3 percent clay; weak fine subangular blocky structure parting to single grain; loose, nonsticky, nonplastic; many very fine to medium roots; many very fine interstitial pores; common mica flakes; 33 percent gravel and 2 percent stones; moderately acid, pH 5.8 by Hellige-Truog; clear wavy boundary.
- C2—37 to 57 inches (94 to 145 cm); very pale brown (10YR 8/2) very gravelly loamy sand, light yellowish brown (10YR 6/4) moist; 3 percent clay; weak fine subangular blocky structure parting to single grain; loose, nonsticky, nonplastic; many very fine to medium roots; many very fine interstitial pores; common mica flakes; 40 percent gravel and 2 percent stones; moderately acid, pH 5.8 by Hellige-Truog; NaF pH 10.0; clear wavy boundary.
- C3—57 to 82 inches (145 to 208 cm); very pale brown (10YR 8/3) very gravelly loamy sand, light yellowish brown (10YR 6/4) moist; 4 percent clay; weak fine subangular blocky structure parting to single grain; loose, nonsticky, nonplastic;

many very fine to medium roots; many very fine interstitial pores; common mica flakes; 37 percent gravel; moderately acid, pH 5.8 by Hellige-Truog; NaF pH 10.0.

Type location: Butte County, California; about 1.9 miles south of Camel Peak Lookout, approximately 1,800 feet west and 2,350 feet north of the southeast corner of sec. 8, T. 21 N., R. 8 E.; 39 degrees, 41 minutes, 33 seconds north latitude and 121 degrees, 6 minutes, 17 seconds west longitude; NAD83; USGS Quad: American House, California.

Range in Characteristics

The depth to paralithic bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 52 to 56 degrees F (11 to 13 degrees C). The soil moisture control section is dry in all parts from about July to October (about 90 days). The particle-size control section averages 8 to 15 percent clay and 35 to 80 percent rock fragments, mostly gravel. Mineralogy is isotic. The content of organic matter is 2 to 4 percent from 2 to 5 inches (5 to 13 cm) and is less than 1 percent from 5 to 80 inches (13 to 203 cm). By ammonium acetate, base saturation ranges from 26 to 34 percent from 2 to 82 inches (5 to 208 cm). Rock fragments on the surface range from 0 to 50 percent cobbles, 0 to 50 percent stones, and 0 to 10 percent boulders.

The A horizon has dry color of 10YR 5/2, 5/3, 5/4, 6/3, or 6/4. Moist color is 10YR 3/2, 3/3, or 4/3 or 7.5YR 3/3 or 3/4. Texture generally is gravelly sandy loam and very gravelly sandy loam but in some pedons is very gravelly coarse sandy loam, very stony coarse sandy loam, coarse sandy loam, or gravelly coarse sandy loam. The content of clay ranges from 5 to 15 percent. The horizon has 5 to 40 percent gravel, 0 to 20 percent cobbles, and 0 to 50 percent stones. NaF pH is 10.0 to 11.8. Reaction is moderately acid or slightly acid.

The Bw horizon has dry color of 10YR 4/4, 5/4, 5/6, 6/2, 6/4, 6/6, 7/2, 7/3, 7/4, or 8/3 or 2.5Y 7/6. Moist color is 10YR 3/3, 4/2, 4/3, 4/4, 5/2, 5/3, 5/4, or 6/4 or 2.5Y 5/4. Texture is extremely gravelly sandy loam, very gravelly coarse sandy loam, very cobbly sandy loam, extremely cobbly sandy loam, very gravelly sandy loam, or very stony coarse sandy loam. The content of clay ranges from 5 to 15 percent. The horizon has 10 to 40 percent gravel, 0 to 50 percent cobbles, and 0 to 20 percent stones. NaF pH is 9.0 to 11.0. Reaction ranges from strongly acid to slightly acid.

The C horizon has dry color of 10YR 7/6 or 8/2. Moist color is 10YR 5/4, 6/2, or 6/4. Texture is very gravelly loamy sand, extremely cobbly sandy loam, extremely cobbly coarse sandy loam, cobbly loamy coarse sand, gravelly loamy sand, or extremely stony sandy loam. The content of clay ranges from 3 to 12 percent. The horizon has 10 to 40 percent gravel, 0 to 50 percent cobbles, and 0 to 50 percent stones. NaF pH is 9.0 to 10.8. Reaction ranges from very strongly acid to moderately acid.

Blavo Series

The Blavo series consists of moderately deep, poorly drained soils that formed in alluvium derived from mixed rock sources. These soils are in flood basins. Slopes are 0 to 1 percent. The mean annual precipitation is about 19 inches (483 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Very-fine, smectitic, thermic Xeric Duraquerts

Typical Pedon

Blavo clay, on a slope of less than 1 percent, under a cover of rice, at an elevation of 87 feet (26 m). When described on 5/7/1992, the soil was moist throughout. The water table was at a depth of 51 inches (130 cm). (Colors are for dry soil unless otherwise noted.)

- Ap—0 to 5 inches (0 to 13 cm); dark gray (10YR 4/1) clay, very dark gray (10YR 3/1) moist; 65 percent clay; strong very coarse prismatic structure parting to strong fine and medium angular blocky; hard, friable, very sticky, very plastic; many very fine roots; vertical cracks 0.5 inch to 1.5 inches (1.3 to 3.8 cm) wide and 6 to 12 inches (15 to 30 cm) apart; common fine and medium brown (7.5YR 4/4 moist) oxidized iron masses; noneffervescent; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.
- Bssg1—5 to 16 inches (13 to 41 cm); dark gray (10YR 4/1) clay, very dark gray (10YR 3/1) moist; 65 percent clay; strong very coarse prismatic structure parting to strong coarse angular blocky; extremely hard, firm, very sticky, very plastic; many very fine roots; common very fine tubular pores; vertical cracks 0.5 inch to 1.5 inches (1.3 to 3.8 cm) wide and 6 to 12 inches (15 to 30 cm) apart; many wedge-shaped aggregates 4 to 6 inches (10 to 15 cm) wide; many slickensides; common fine brown (7.5YR 4/4 moist) oxidized iron masses; noneffervescent; moderately alkaline, pH 8.0 by Hellige-Truog; clear wavy boundary.
- Bssg2—16 to 24 inches (41 to 61 cm); dark gray (10YR 4/1) clay, very dark gray (10YR 3/1) moist; 65 percent clay; moderate coarse prismatic structure parting to strong medium and coarse angular blocky; extremely hard, firm, very sticky, very plastic; common very fine roots; common very fine tubular pores; many wedge-shaped aggregates 4 to 6 inches (10 to 15 cm) wide; many slickensides; noneffervescent; moderately alkaline, pH 8.0 by Hellige-Truog; clear wavy boundary.
- Bkssg—24 to 30 inches (61 to 76 cm); dark gray (10YR 4/1) clay, very dark gray (10YR 3/1) moist; 60 percent clay; moderate medium and coarse angular blocky structure; very hard, friable, very sticky, very plastic; few very fine roots; many very fine tubular pores; many wedge-shaped aggregates 1 to 3 inches (2.5 to 7.6 cm) wide; many slickensides; disseminated carbonates; strongly effervescent; moderately alkaline, pH 8.0 by Hellige-Truog; clear wavy boundary.
- Bkg—30 to 36 inches (76 to 91 cm); gray (10YR 6/1) clay loam, dark gray (10YR 4/1) moist; 38 percent clay; strong fine and medium angular blocky structure; hard, friable, very sticky, very plastic; few very fine roots; many very fine tubular pores; many wedge-shaped aggregates 1 to 2 inches (2.5 to 5 cm) wide; common fine and medium irregular carbonate masses; violently effervescent; strongly alkaline, pH 8.5 by Hellige-Truog; abrupt wavy boundary.
- 2Bkqm—36 to 60 inches (91 to 152 cm); very pale brown (10YR 8/2), indurated duripan, brown (10YR 4/3) moist; massive; extremely hard, extremely firm; continuous indurated, silica-cemented laminar cap 15 to 25 mm thick; alternating layers of strongly cemented to indurated duripan to 60 inches; does not slake in HCl; many medium and coarse carbonate masses and many fine platelike black (N 2/0 moist) manganese masses at the top of the horizon; violently effervescent.

Type location: Butte County, California; about 3.2 miles southwest of Richvale, approximately 600 feet west and 2,350 feet north of the southeast corner of sec. 31, T. 19 N., R. 2 E.; 39 degrees, 29 minutes, 24 seconds north latitude and 121 degrees, 46 minutes, 57 seconds west longitude; NAD27; USGS Quad: West of Biggs, California.

Range in Characteristics

Depth to the duripan is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 62 to 66 degrees F (17 to 19 degrees C). The soil moisture control section is dry from June to October (120 to 125 days). The particle-size control section averages 60 to 70 percent clay. Mineralogy is smectitic. The soils are calcareous from 15 to 34 inches (38 to 86 cm). Reversible, surface-initiated cracks 1 to 2 inches (2.5 to 5 cm) wide extend to a depth of 29 inches (74 cm) from May 15 to October 15 (150 days) when the soils are not irrigated. Few or common intersecting

slickensides are in the Bssg and Bkssg horizons, from 7 to 29 inches (18 to 74 cm). A fluctuating water table can occur between the top of the duripan and the surface of the soil from December through May. Redoximorphic features, such as manganese nodules and oxidized iron masses with color of 7.5YR 4/4 moist and a reduced matrix with chroma of 1 moist, occur in the horizons above the duripan. Some pedons have overwash of silt loam from 6 to 20 inches (15 to 51 cm) thick.

The Ap horizon has dry color of 10YR 3/1 or 4/1. Moist color is 10YR 2/1 or 3/1. The content of clay ranges from 60 to 70 percent. The content of organic matter is 1 to 2 percent. Reaction ranges from moderately acid to neutral.

The Bssg horizon has dry color of 10YR 3/1, 4/1, or 5/1. Moist color is 10YR 3/1 or 4/1. The content of clay ranges from 65 to 70 percent. The content of organic matter is 0.5 to 2 percent. Reaction ranges from neutral to moderately alkaline.

The Bkssg horizon has dry color of 10YR 3/1, 4/1, or 5/1. Moist color is 10YR 3/1, 4/1, or 4/2. The content of clay ranges from 65 to 70 percent. The content of organic matter is 0.5 to 1 percent. Reaction is slightly alkaline or moderately alkaline.

The Bkg horizon has dry color of 10YR 5/1, 5/2, 6/1, 6/2, or 6/3. Moist color is 10YR 4/1, 4/2, or 5/2 or 2.5Y 4/2. Texture is clay loam or clay. The content of clay ranges from 35 to 60 percent. The content of organic matter is 0.1 to 0.5 percent. Reaction is moderately alkaline or strongly alkaline.

The 2Bkqm horizon has dry color of 10YR 5/2, 6/2, 7/2, 7/3, or 8/2. Moist color is 10YR 4/2, 4/3, or 5/2. Rupture resistance ranges from indurated to strongly cemented. The horizon has alternating weakly and moderately silica- and lime-cemented layers.

Boga Series

The Boga series consists of very deep, moderately well drained soils that formed in alluvium derived from mixed rock sources. These soils are on terraces along the Feather River. Slopes are 0 to 1 percent. The mean annual precipitation is about 20 inches (508 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Typic Haploxeralfs

Typical Pedon

Boga loam, on a slope of less than 1 percent, in a field about to be leveled for peaches, at an elevation of 90 feet (27 m). When described on 8/15/1994, the soil was slightly moist below a depth of 6 inches (15 cm) because of nearby irrigation and irrigation canals. (Colors are for dry soil unless otherwise noted.)

Ap1—0 to 3 inches (0 to 8 cm); pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; 24 percent clay; moderate fine and medium subangular blocky structure; very hard, firm, nonsticky, slightly plastic; common very fine and few fine roots; many very fine and fine tubular pores; neutral, pH 7.0 by Hellige-Truog; abrupt smooth boundary.

Ap2—3 to 6 inches (8 to 15 cm); pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; 25 percent clay; moderate coarse subangular blocky structure parting to medium subangular blocky; very hard, firm, nonsticky, slightly plastic; common very fine and few fine roots; many very fine and fine, common medium, and few coarse tubular pores; neutral, pH 7.0 by Hellige-Truog; abrupt smooth boundary.

Bt1—6 to 14 inches (15 to 36 cm); pale brown (10YR 6/3) clay loam, brown (10YR 4/3) moist; 28 percent clay; weak medium subangular blocky structure; very hard, firm, slightly sticky, slightly plastic; common very fine and few fine roots; many very fine and fine, common medium, and few coarse tubular pores; few patchy

distinct clay films on faces of peds and in pores; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.

Bt2—14 to 29 inches (36 to 74 cm); light yellowish brown (10YR 6/4) clay loam, dark yellowish brown (10YR 4/4) moist; 30 percent clay; moderate medium subangular blocky structure; very hard, firm, slightly sticky, moderately plastic; common fine roots; many very fine and fine and common medium tubular pores; common discontinuous distinct clay films on faces of peds and in pores; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.

Bt3—29 to 53 inches (74 to 135 cm); light yellowish brown (10YR 6/4) clay loam, dark yellowish brown (10YR 4/4) moist; 28 percent clay; moderate medium subangular blocky structure; very hard, firm, slightly sticky, moderately plastic; few fine to coarse roots; many very fine and fine and common medium tubular pores; common discontinuous distinct clay films on faces of peds and in pores; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.

Bt4—53 to 73 inches (135 to 185 cm); light yellowish brown (10YR 6/4) loam, dark yellowish brown (10YR 4/4) moist; 26 percent clay; weak medium subangular blocky structure; very hard, firm, slightly sticky, moderately plastic; few fine to coarse roots; many very fine and fine and common medium tubular pores; few fine black (N 2/0 moist) irregularly shaped iron-manganese masses throughout; few discontinuous distinct clay films in root channels and pores; slightly acid, pH 6.5 by Hellige-Truog; abrupt wavy boundary.

2Cd—73 to 80 inches (185 to 203 cm); dark yellowish brown (10YR 4/4) loam, olive brown (2.5Y 4/4) moist; 18 percent clay; noncemented; massive; extremely hard, friable, nonsticky, slightly plastic; no roots; many very fine and fine and few medium tubular pores; common fine and medium dark yellowish brown (10YR 4/4 moist) irregular and threadlike oxidized iron masses on fragment faces and in pores; slightly acid, pH 6.5 by Hellige-Truog.

Type location: Butte County, California; about 2 miles southeast of Gridley, approximately 1,050 feet east and 150 feet north of the intersection of Larkin Road and Clardy Avenue; T. 17 N., R. 3 E.; in an unsectioned area in the Boga Land Grant; 39 degrees, 20 minutes, 31 seconds north latitude and 121 degrees, 39 minutes, 17 seconds west longitude; NAD27; USGS Quad: Gridley, California.

Range in Characteristics

The depth to densic material is 60 to 80 inches (152 to 203 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry from May to October (140 to 160 days). The particle-size control section averages 25 to 35 percent clay. Mineralogy is mixed. The content of organic matter is 1 to 3 percent to a depth of 6 inches (15 cm). A fluctuating water table can occur between the top of the densic material and 20 inches (51 cm) below the surface of the soil from December through May.

The Ap horizon has dry color of 10YR 5/3, 5/4, or 6/3. Moist color is 10YR 4/3 or 4/2. Texture is loam or silt loam. The content of clay ranges from 18 to 27 percent. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 10YR 5/3, 5/4, 5/6, 6/4, or 6/6. Moist color is 10YR 4/2, 4/3, 4/4, 5/3, or 5/4 or 7.5YR 4/3. Texture is loam, silt loam, silty clay loam, or clay loam. The content of clay ranges from 20 to 40 percent. The content of sand ranges from 15 to 50 percent. Redoximorphic features, such as iron-manganese masses (N 2/0 moist) and oxidized iron masses (10YR 4/6; 7.5YR 4/4, 4/6, or 5/6; 5YR 4/6; or 5/6 moist), occur below a depth of 40 inches (102 cm). Reaction ranges from slightly acid to slightly alkaline.

The 2Cd horizon has dry color of 2.5Y 7/4, 7/3, 6/4 or 10YR 4/4 or 6/4. Moist color is 2.5Y 4/4, 5/3, or 5/4 or 10YR 4/4. Texture is loam, silt loam, silt, very fine sandy loam, or fine sandy loam. The content of clay ranges from 5 to 20 percent.

Redoximorphic features, such as iron-manganese masses (N 2/0 moist) and oxidized iron masses (10YR 4/6; 7.5YR 4/4, 4/6, or 5/6; or 5YR 4/6 or 5/6 moist), occur in pores and on fragment faces. Rupture resistance ranges from slightly hard to very hard and varies within the horizon at any given point. The densic material does not slake in water, and the cementation class is noncemented. This material generally has many very fine and fine tubular pores that appear to be remnant root channels. Reaction ranges from slightly acid to moderately alkaline.

Bonepile Series

The Bonepile series consists of deep, well drained soils that formed in tephra over residuum derived from volcanic rocks. These soils are on the top of volcanic ridges in the Cascade Mountains. Slopes range from 2 to 30 percent. The mean annual precipitation is about 75 inches (1,905 mm), and the mean annual air temperature is about 49 degrees F (9 degrees C).

Taxonomic class: Medial-skeletal, glassy, frigid Typic Haploxerands

Typical Pedon

Bonepile gravelly medial loam, on a west-facing slope of 5 percent, under a cover of planted ponderosa pine, at an elevation of 5,140 feet (1,567 m). When described on 9/23/1997, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 3 cm); litter of needles and leaves.

A1—1 to 3 inches (3 to 8 cm); brown (7.5YR 5/2) gravelly medial loam, dark brown (7.5YR 3/2) moist; 18 percent clay; weak fine granular structure; loose, nonsticky, nonplastic; many very fine and common fine roots; many very fine and fine irregular and tubular pores; noneffervescent; 15 percent subangular gravel; strongly acid, pH 5.3 by pH meter 1:1 water; NaF pH 10.5; gradual smooth boundary.

A2—3 to 9 inches (8 to 23 cm); brown (7.5YR 4/3) cobbly medial loam, dark brown (7.5YR 3/2) moist; 15 percent clay; weak fine and medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; many very fine to medium roots; many very fine and fine irregular and tubular pores; noneffervescent; 15 percent subangular gravel and 15 percent subangular cobbles; strongly acid, pH 5.1 by pH meter 1:1 water; NaF pH 11.0; gradual smooth boundary.

Bw1—9 to 18 inches (23 to 46 cm); brown (7.5YR 5/3) gravelly medial loam, dark brown (7.5YR 3/4) moist; 16 percent clay; weak fine and medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; many very fine and fine and few medium roots; many very fine and fine irregular and tubular pores; noneffervescent; 30 percent subangular gravel; very strongly acid, pH 5.0 by pH meter 1:1 water; NaF pH 10.9; gradual smooth boundary.

Bw2—18 to 30 inches (46 to 76 cm); brown (7.5YR 5/4) very gravelly medial loam, dark brown (7.5YR 3/4) moist; 16 percent clay; weak fine and medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; many very fine, common fine and medium, and few coarse roots; many very fine and fine irregular and tubular pores; noneffervescent; 25 percent subangular gravel and 10 percent subangular cobbles; very strongly acid, pH 4.9 by pH meter 1:1 water; NaF pH 10.7; gradual smooth boundary.

2Bw3—30 to 44 inches (76 to 112 cm); brown (7.5YR 5/4) very gravelly medial loam, dark brown (7.5YR 3/4) moist; 23 percent clay; weak fine and medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; common very fine to medium and few coarse roots; many very fine and fine irregular and tubular pores; noneffervescent; 30 percent subangular gravel, 10 percent subangular

cobbles, and 10 percent subangular boulders; very strongly acid, pH 4.8 by pH meter 1:1 water; NaF pH 10.4; gradual smooth boundary.
 2Cr—44 inches (112 cm); very weakly cemented andesite; roots occurring more than 4 inches (10 cm) apart.

Type location: Butte County, California; about 3 miles north of Inskip, approximately 600 feet north and 1,200 feet west of the southeast corner of sec. 9, T. 25 N., R. 4 E.; 40 degrees, 1 minute, 57 seconds north latitude and 121 degrees, 31 minutes, 35.3 seconds west longitude; NAD83; USGS Quad: Butte Meadows, California.

Range in Characteristics

The depth to paralithic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 41 to 47 degrees F (5 to 8 degrees C). The soil moisture control section is dry in all parts from about July to October (about 90 days). The particle-size control section averages 10 to 20 percent clay and 15 to 35 percent rock fragments, mostly gravel, in the upper part and 12 to 25 percent clay and 35 to 50 percent rock fragments, mostly gravel, in the lower part. Mineralogy is glassy. Acid oxalate extractable Al plus $\frac{1}{2}$ Fe ranges from 2.0 to 2.75 to a depth of 30 inches (76 cm). By ammonium acetate, CEC ranges from 35.5 in the A1 horizon to 16.4 in the 2Bw3 horizon. P retention ranges from 92 to 98 between 1 and 30 inches (2.5 to 76 cm). Rock fragments on the surface range from 5 to 35 percent gravel, 0 to 35 percent cobbles, 0 to 30 percent stones, and 0 to 30 percent boulders.

The A horizon has dry color of 7.5YR 4/2, 4/3, 4/4, 5/2, or 5/3 or 10YR 4/2, 5/2, or 5/4. Moist color is 7.5YR 3/2, 3/3, or 3/4; 5YR 3/2 or 3/3; or 10YR 2/2. Texture is gravelly or cobbly medial loam, gravelly or cobbly medial sandy loam, or gravelly or cobbly medial fine sandy loam. The content of clay ranges from 10 to 20 percent. The horizon has 15 to 35 percent gravel, 0 to 15 percent cobbles, and 0 to 10 percent stones. The content of organic matter is 10 to 15 percent. NaF pH is 10 to 11.5. Reaction ranges from strongly acid to slightly acid.

The upper part of the Bw horizon has dry color of 7.5YR 4/3, 4/4, 5/3, or 5/4. Moist color is 7.5YR 3/3 or 3/4 or 5YR 3/4 or 4/3. Texture is gravelly medial loam, gravelly medial sandy loam, gravelly medial fine sandy loam, or very gravelly medial sandy loam. The content of clay ranges from 10 to 20 percent. The content of gravel is 15 to 35 percent, the content of cobbles is 0 to 10 percent, and the content of stones is 0 to 10 percent. The content of organic matter is 5 to 10 percent. NaF pH is 10.5 to 11.5. Reaction ranges from very strongly acid to slightly acid.

The lower part of the Bw horizon has dry color of 7.5YR 4/4, 5/4, or 6/4 or 10YR 5/4 or 4/4. Moist color is 7.5YR 3/4 or 4/3 or 10YR 4/4. Texture is gravelly or cobbly medial sandy loam, gravelly or cobbly medial fine sandy loam, gravelly or cobbly medial loam, or very gravelly or very cobbly medial loam. The content of clay ranges from 12 to 20 percent. The content of gravel is 20 to 50 percent, the content of cobbles is 0 to 30 percent, and the content of stones is 0 to 10 percent. The content of organic matter is 3 to 5 percent. NaF pH is 10.0 to 11.0. Reaction is very strongly acid or strongly acid.

The 2Bw horizon has dry color of 7.5YR 4/4, 5/3, 5/4, 5/6, 6/3, 6/4, 6/6, or 7/6 or 5YR 5/3 or 4/6. Moist color is 7.5YR 3/4 or 4/4 or 5YR 4/3, 4/4, or 4/6. Texture is gravelly or cobbly medial loam, gravelly or cobbly medial sandy loam, very gravelly or very cobbly medial loam, very gravelly or very cobbly medial sandy loam, or extremely gravelly or extremely cobbly medial sandy loam. The content of clay ranges from 15 to 25 percent. The horizon has 15 to 70 percent gravel, 0 to 30 percent cobbles, and 0 to 20 percent stones. The content of organic matter is 0.5 to 3 percent. NaF pH is 9.0 to 10.5. Reaction ranges from extremely acid to strongly acid.

Bonepile Taxadjunct

The Bonepile taxadjunct consists of deep, moderately well drained soils that formed in alluvium derived from volcanic rocks. These soils are on stream terraces in valleys in the Cascade Mountains. Slopes range from 2 to 8 percent. The mean annual precipitation is about 72 inches (1,829 mm), and the mean annual air temperature is about 50 degrees F (10 degrees C).

Taxonomic class: Loamy-skeletal, isotic, mesic Ultic Haploxerands

Typical Pedon

Bonepile taxadjunct, on a south-facing slope of 2 percent, under a cover of incense cedar, ponderosa pine, white fir, Douglas-fir, and sugar pine, at an elevation of 4,395 feet (1,339 m). When described on 6/26/1997, the soil was very slightly moist to a depth of 7 inches (18 cm), dry from 7 to 37 inches (18 to 94 cm), and slightly moist below 37 inches (94 cm). (Colors are for dry soil unless otherwise noted.)

- Oi—0 to 1 inch (0 to 3 cm); slightly decomposed plant material; abrupt smooth boundary.
- A1—1 to 4 inches (3 to 10 cm); brown (7.5YR 5/3) gravelly medial sandy loam, dark brown (7.5YR 3/2) moist; 13 percent clay; weak fine and medium granular structure; loose, nonsticky, nonplastic; many very fine and fine and common medium roots; many very fine to medium irregular and tubular pores; 25 percent gravel; moderately acid, pH 6.0 by Hellige-Truog; NaF pH 10.2; clear smooth boundary.
- A2—4 to 7 inches (10 to 18 cm); light brown (7.5YR 6/3) very gravelly medial sandy loam, dark brown (7.5YR 3/2) moist; 15 percent clay; weak very fine granular structure; loose, nonsticky, nonplastic; many very fine to medium roots; many very fine to medium tubular and irregular pores; 5 percent cobbles and 35 percent gravel; slightly acid, pH 6.2 by Hellige-Truog; NaF pH 11.0; clear smooth boundary.
- AB—7 to 15 inches (18 to 38 cm); light brown (7.5YR 6/3) very gravelly medial sandy loam, dark brown (7.5YR 3/2) moist; 17 percent clay; weak very fine granular structure; loose, slightly sticky, slightly plastic; many very fine to medium and few coarse roots; many very fine to medium tubular and irregular pores; 10 percent cobbles and 40 percent gravel; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 11.0; gradual smooth boundary.
- Bw1—15 to 30 inches (38 to 76 cm); yellowish brown (10YR 5/4) extremely gravelly sandy loam, brown (7.5YR 4/3) moist; 18 percent clay; weak very fine granular structure; loose, slightly sticky, slightly plastic; many very fine to coarse roots; many very fine to medium tubular and irregular pores; 10 percent stones, 20 percent cobbles, and 40 percent gravel; slightly acid, pH 6.4 by Hellige-Truog; NaF pH 11.0; gradual smooth boundary.
- Bw2—30 to 37 inches (76 to 94 cm); pink (7.5YR 7/3) extremely cobbly sandy clay loam, brown (7.5YR 4/3) moist; 21 percent clay; weak fine subangular blocky structure; loose, slightly sticky, slightly plastic; many fine and medium roots; many very fine to medium tubular and irregular pores; 10 percent stones, 30 percent gravel, and 30 percent cobbles; neutral, pH 7.2 by Hellige-Truog; NaF pH 10.5; gradual smooth boundary.
- 2Bt—37 to 47 inches (94 to 119 cm); brown (7.5YR 4/3) extremely gravelly clay loam, brown (10YR 4/3) moist; 29 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common fine and medium roots; many very fine to medium tubular and irregular pores; 60 percent continuous distinct clay films; 20 percent coarse manganese

coatings; 10 percent stones, 30 percent cobbles, and 40 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 9.0; abrupt smooth boundary. 2Bqm—47 inches (119 cm); moderately cemented duripan; 70 percent coarse manganese coatings.

Type location: Butte County, California; about 0.9 mile east of Butte Meadows, approximately 1,400 feet south and 1,870 feet east of the northwest corner of sec. 28, T. 26 N., R. 4 E.; 40 degrees, 4 minutes, 56 seconds north latitude and 121 degrees, 32 minutes, 4 seconds west longitude; NAD27; USGS Quad: Butte Meadows, California.

Range in Characteristics

Depth to the duripan is 40 to 60 inches (102 to 152 centimeters). The mean annual soil temperature is 47 to 50 degrees F (8 to 10 degrees C). The soil moisture control section is dry in all parts from about July to October (about 90 days). The particle-size control section averages 12 to 20 percent clay and 50 to 80 percent rock fragments. Mineralogy is isotic. A fluctuating water table can occur at a depth of 37 to 72 inches (94 to 183 centimeters) from December through June, 59 to 98 inches (150 to 249 centimeters) in July, 79 to 144 inches (200 to 365 centimeters) from August through October, and 59 to 144 inches (150 to 365 centimeters) in November. Redoximorphic features, such as manganese coatings, occur in the 2Bt and 2Bqm horizons. Rock fragments on the surface range from 10 to 40 percent gravel, 0 to 25 percent cobbles, 0 to 40 percent stones, and 0 to 20 percent boulders.

The A horizon has dry color of 7.5YR 4/3, 5/3, or 6/3 or 10YR 5/3. Moist color is 7.5YR 3/2 or 3/3 or 5YR 3/3. Texture is gravelly medial fine sandy loam, very gravelly medial fine sandy loam, gravelly medial sandy loam, very gravelly medial sandy loam, very stony medial sandy loam, or extremely stony medial sandy loam. The content of clay ranges from 10 to 20 percent. The horizon has 15 to 40 percent gravel, 0 to 25 percent cobbles, 0 to 25 percent stones, and 0 to 10 percent boulders. NaF pH is 10.0 to 11.5. Reaction is slightly acid or moderately acid.

The AB horizon has dry color of 7.5YR 5/3 or 6/3. Moist color is 7.5YR 3/2 or 3/3. Texture is very gravelly medial sandy loam, very gravelly medial loam, very cobbly medial sandy loam, or very stony medial sandy loam. The content of clay ranges from 10 to 20 percent. The horizon has 15 to 40 percent gravel, 5 to 20 percent cobbles, 0 to 25 percent stones, and 0 to 5 percent boulders. NaF pH is 10.0 to 11.0. Reaction is slightly acid or moderately acid.

The Bw horizon has dry color of 7.5YR 6/6 or 7/3 or 10YR 5/4. Moist color is 7.5YR 4/3. Texture is extremely gravelly sandy loam, extremely gravelly loam, extremely cobbly sandy clay loam, or extremely stony sandy loam. The content of clay ranges from 12 to 25 percent. The horizon has 15 to 40 percent gravel, 15 to 35 percent cobbles, 5 to 25 percent stones, and 0 to 5 percent boulders. NaF pH is 10.0 to 11.0. Reaction is slightly acid or neutral.

The 2Bt horizon has dry color of 7.5YR 4/3 or 10YR 5/6. Moist color is 10YR 4/3 or 4/4. Texture is extremely gravelly sandy loam, extremely gravelly loam, extremely gravelly sandy clay loam, extremely gravelly clay loam, or extremely stony sandy loam. The content of clay ranges from 15 to 30 percent. The horizon has 25 to 45 percent gravel, 15 to 35 percent cobbles, 5 to 25 percent stones, and 0 to 5 percent boulders. NaF pH is 9.0 to 10.0. Reaction is slightly acid or moderately acid.

The Bonepile taxadjunct is a taxadjunct because it is loamy-skeletal, has a mesic soil temperature regime, and is underlain by a duripan. These differences do not significantly affect the use, management, or interpretations of the soils.

Bonneyridge Series

The Bonneyridge series consists of very deep, somewhat excessively drained soils that formed in colluvium and residuum derived from quartz diorite. These soils are on ridgetops and side slopes on granitic Sierra Nevada mountains. Slopes range from 1 to 110 percent. The mean annual precipitation is about 75 inches (1,905 mm), and the mean annual air temperature is about 52 degrees F (11 degrees C).

Taxonomic class: Coarse-loamy, isotic, mesic Typic Dystroxerepts

Typical Pedon

Bonneyridge sandy loam, on an east-facing convex slope of 25 percent, under mixed conifers, at an elevation of 4,175 feet (1,272 m). When described on 9/25/1996, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 2.5 cm); fresh and slightly decomposed plant material.

A1—1 to 3 inches (2.5 to 7.6 cm); grayish brown (10YR 5/2) sandy loam, black (10YR 2/1) moist; 10 percent clay; weak very fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; common very fine and fine roots; many very fine interstitial pores; common mica flakes; noneffervescent; 5 percent subrounded gravel; slightly acid, pH 6.5 by pH meter 1:1 water; NaF pH 12.0; abrupt smooth boundary.

A2—3 to 6 inches (7.6 to 15 cm); grayish brown (10YR 5/2) sandy loam, black (10YR 2/1) moist; 8 percent clay; weak very fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; common fine and medium roots; many very fine interstitial pores; common mica flakes; noneffervescent; 10 percent subrounded gravel; slightly acid, pH 6.5 by pH meter 1:1 water; NaF pH 11.5; abrupt smooth boundary.

Bw1—6 to 16 inches (15 to 41 cm); light brownish gray (10YR 6/2) coarse sandy loam, brown (10YR 4/3) moist; 6 percent clay; weak very fine subangular blocky structure; loose, very friable, nonsticky, nonplastic; common fine and medium and few coarse roots; many very fine interstitial pores; common mica flakes; noneffervescent; 5 percent subrounded gravel; slightly acid, pH 6.3 by pH meter 1:1 water; NaF pH 11.0; clear smooth boundary.

Bw2—16 to 22 inches (41 to 56 cm); pale brown (10YR 6/3) coarse sandy loam, brown (10YR 4/3) moist; 8 percent clay; weak very fine subangular blocky structure; loose, very friable, nonsticky, nonplastic; few coarse roots; many very fine interstitial pores; common mica flakes; noneffervescent; 5 percent subrounded gravel; moderately acid, pH 5.8 by pH meter 1:1 water; NaF pH 10.0; clear smooth boundary.

Bw3—22 to 31 inches (56 to 79 cm); pale brown (10YR 6/3) coarse sandy loam, brown (10YR 4/3) moist; 8 percent clay; weak very fine subangular blocky structure; loose, very friable, nonsticky, nonplastic; few fine roots; many very fine interstitial pores; common mica flakes; noneffervescent; 10 percent subrounded gravel; moderately acid, pH 5.6 by pH meter 1:1 water; NaF pH 10.0; gradual smooth boundary.

Bw4—31 to 39 inches (79 to 99 cm); very pale brown (10YR 7/3) sandy loam, brown (10YR 5/3) moist; 10 percent clay; weak very fine subangular blocky structure; loose, very friable, nonsticky, nonplastic; few fine and medium roots; many very fine interstitial pores; common mica flakes; noneffervescent; slightly acid, pH 6.0 by pH meter 1:1 water; NaF pH 10.0; gradual smooth boundary.

C1—39 to 56 inches (99 to 142 cm); very pale brown (10YR 7/3) loamy coarse sand, brown (10YR 5/3) moist; 5 percent clay; weak very fine subangular blocky structure; loose, very friable, nonsticky, nonplastic; few fine and medium roots; many very fine interstitial pores; common mica flakes; noneffervescent;

moderately acid, pH 6.0 by pH meter 1:1 water; NaF pH 10.0; clear smooth boundary.

C2—56 to 76 inches (142 to 193 cm); very pale brown (10YR 8/2) gravelly loamy coarse sand, pale brown (10YR 6/3) moist; 5 percent clay; weak very fine subangular blocky structure; loose, very friable, nonsticky, nonplastic; few fine and medium roots; many very fine interstitial pores; common mica flakes; noneffervescent; 16 percent subrounded gravel; moderately acid, pH 6.0 by pH meter 1:1 water; NaF pH 10.0.

Type location: Plumas County, California; about 3 miles southeast of Cascade, approximately 1,100 feet north and 650 feet east of the southwest corner of sec. 18, T. 21 N., R. 8 E.; 39 degrees, 40 minutes 26.8 seconds north latitude and 121 degrees, 8 minutes, 0.2 second west longitude; NAD83; USGS Quad: Cascade, California.

Range in Characteristics

The depth to paralithic bedrock (quartz diorite) is more than 60 inches (152 cm). The mean annual soil temperature is 52 to 56 degrees F (11 to 13 degrees C). The soil moisture control section is dry in all parts from about July 1 to October 1 (about 90 days). The particle-size control section averages 5 to 18 percent clay and 4 to 10 percent rock fragments, mostly gravel. Mineralogy is isotic. By ammonium acetate, base saturation ranges from 55 to 100 percent from 10 to 30 inches (25 to 76 cm). Acid oxalate extractable Al plus $\frac{1}{2}$ Fe ranges from 0.75 to 1.0 to a depth of 6 inches (15 cm). Rock fragments on the surface range from 0 to 10 percent gravel, 0 to 5 percent cobbles, and 0 to 5 percent stones.

The A horizon has dry color of 10YR 5/2, 5/3, 5/4, 5/6, 6/2, 6/3, 6/4, or 8/2. Moist color is 10YR 2/1, 2/2, 3/2, 3/3, 4/2, 4/3, or 5/2. Texture is sandy loam, coarse sandy loam, gravelly sandy loam, or gravelly coarse sandy loam. The content of clay ranges from 5 to 15 percent. The horizon has 0 to 25 percent gravel and 0 to 5 percent cobbles. The content of organic matter is 2 to 8 percent. NaF pH is 10.0 to 12.0. Reaction ranges from moderately acid to neutral.

The Bw horizon has dry color of 10YR 6/2, 6/3, 6/4, 7/3, 7/4, 8/2, or 8/3 or 2.5Y 7/4. Moist color is 10YR 3/4, 4/3, 4/4, 4/6, 5/2, 5/3, 5/4, 5/6, 6/3, or 6/4 or 2.5Y 5/4 or 6/4. Texture is sandy loam, coarse sandy loam, gravelly sandy loam, or gravelly coarse sandy loam. The content of clay ranges from 5 to 18 percent. The horizon has 0 to 30 percent gravel, 0 to 5 percent cobbles, and 0 to 5 percent stones. The content of organic matter is 0.6 to 6 percent. NaF pH is less than 9 to 11.5. Reaction ranges from strongly acid to slightly acid.

The C horizon has dry color of 10YR 6/2, 7/3, 7/4, 8/1, 8/2, or 8/3 or 2.5Y 7/4. Moist color is 10YR 4/2, 5/3, 5/4, 5/6, 6/3, 6/4, 6/6, 7/2, or 8/2 or 2.5Y 5/4 or 6/4. Texture is loamy coarse sand, gravelly loamy coarse sand, sandy loam, loamy sand, or gravelly sandy loam. The content of clay ranges from 5 to 18 percent. The content of gravel is 0 to 30 percent. The content of organic matter is 0.1 to 0.6 percent. NaF pH is less than 9.0 to 10.5. Reaction is strongly acid or moderately acid.

Bosquejo Series

The Bosquejo series consists of very deep, somewhat poorly drained soils that formed in alluvium weathered from volcanic rocks. These soils are in interfan basins. Slopes are 0 to 1 percent. The mean annual precipitation is about 22 inches (559 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Fine, smectitic, thermic Typic Haploxererts

Typical Pedon

Bosquejo clay, on a slope of less than 1 percent, under a cover of barley, at an elevation of 144 feet (44 m). When described on 6/16/1993, the soil was slightly moist throughout. (Colors are for dry soil unless otherwise noted.)

Ap—0 to 8 inches (0 to 20 cm); brown (7.5YR 5/2) clay, dark brown (7.5YR 3/2) moist; 47 percent clay; moderate coarse prismatic structure; hard, firm, very sticky, very plastic; common very fine roots; common very fine tubular pores; few fine black (N 2/0 moist) rounded iron-manganese concretions throughout; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.

Bss1—8 to 19 inches (20 to 48 cm); brown (7.5YR 5/2) clay, dark brown (7.5YR 3/2) moist; 51 percent clay; moderate medium prismatic structure; hard, firm, very sticky, very plastic; few very fine roots; common very fine tubular pores; common intersecting slickensides; slightly alkaline, pH 7.5 by Hellige-Truog; clear smooth boundary.

Bss2—19 to 24 inches (48 to 61 cm); brown (7.5YR 4/2) clay, dark brown (7.5YR 3/2) moist; 54 percent clay; strong medium prismatic structure; hard, firm, very sticky, very plastic; few very fine roots; common very fine tubular pores; common intersecting slickensides; very slightly effervescent throughout; moderately alkaline, pH 8.0 by Hellige-Truog; abrupt smooth boundary.

2Bk—24 to 37 inches (61 to 94 cm); brown (7.5YR 5/2) silty clay, dark brown (7.5YR 3/4) moist; 43 percent clay; moderate medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; few very fine roots; common very fine and few fine tubular pores; violently effervescent throughout; common fine cylindrical carbonate masses; moderately alkaline, pH 8.0 by Hellige-Truog; abrupt smooth boundary.

2Bw1—37 to 44 inches (94 to 112 cm); brown (10YR 5/3) clay loam, dark brown (7.5YR 3/4) moist; 30 percent clay; moderate medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; few very fine roots; common very fine tubular pores; very slightly effervescent throughout; moderately alkaline, pH 8.0 by Hellige-Truog; clear smooth boundary.

2Bw2—44 to 46 inches (112 to 117 cm); brown (10YR 5/3) loam, dark brown (10YR 3/3) moist; 22 percent clay; weak medium subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; few very fine roots; few very fine tubular pores; very slightly effervescent throughout; moderately alkaline, pH 8.0 by Hellige-Truog; gradual smooth boundary.

2Bq—46 to 60 inches (117 to 152 cm); brown (7.5YR 4/4) loam, dark brown (7.5YR 3/4) moist; 24 percent clay; weak fine subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; few very fine tubular pores; 5 percent fine rounded slightly cemented durinodes; few fine black (N 2/0 moist) iron-manganese nodules throughout; very slightly effervescent throughout; moderately alkaline, pH 8.0 by Hellige-Truog.

Type location: Butte County, California; about 1.25 miles southeast of Nord, approximately 1,150 feet south and 150 feet east of the northwest corner of sec. 13, T. 22 N., R. 1 W.; 39 degrees, 45 minutes, 54 seconds north latitude and 121 degrees, 56 minutes, and 11 seconds west longitude; NAD27; USGS Quad: Nord, California.

Range in Characteristics

The soils are more than 60 inches (152 cm) deep. The mean annual soil temperature is 60 to 64 degrees F (16 to 18 degrees C). The soil moisture control section is dry in all parts from about June 1 to October 15 (about 130 to 150 days). The particle-size control section averages 40 to 50 percent clay. Mineralogy is smectitic. The content of organic matter is 1 to 5 percent to a depth of 24 inches (61 cm). Surface-initiated, reversible cracks 0.25 to 1 inch (0.6 to 2.5 cm) wide extend to a

depth of about 25 inches from May 15 to October 15 (about 150 days) when the soils are not irrigated. Intersecting slickensides occur in the Bss1 and Bss2 horizons, from about 6 to 30 inches (15 to 76 cm). A fluctuating water table can occur at a depth of 12 to 60 inches (30 to 152 cm) from December through May. Where they occur, redoximorphic features, such as oxidized iron masses with color of 7.5YR 3/4, 4/4, 4/6, or 5/6 moist, are in the 2Bw and 2Bq horizons and iron-manganese nodules are throughout the profile. Some pedons have overwash of silt loam 6 to 20 inches (15 to 51 cm) thick.

The Ap horizon has dry color of 7.5YR 4/2 or 5/2 or 10YR 4/2 or 5/2. Moist color is 7.5YR 3/2 or 4/2 or 10YR 3/2 or 3/3. Texture is most commonly clay, but the range includes silt loam and clay loam. The content of clay ranges from 18 to 50 percent. Reaction is slightly acid or neutral.

The Bss horizon has dry color of 7.5YR 4/2 or 5/2 or 10YR 4/2 or 5/2. Moist color is 7.5YR 4/2 or 5/2 or 10YR 4/2 or 5/2. Texture is clay or silty clay. The content of clay ranges from 40 to 55 percent. Reaction is neutral or slightly alkaline.

The 2Bk horizon has dry color of 7.5YR 5/2 or 5/3 or 10YR 5/2 or 5/3. Moist color is 7.5YR 3/3, 3/4, 4/3, or 4/4 or 10YR 3/3, 3/4, 4/3, or 4/4. Texture is clay loam, silty clay loam, or silty clay. The content of clay ranges from 30 to 45 percent. Reaction is slightly alkaline or moderately alkaline.

The 2Bw1 and 2Bw2 horizons have dry color of 7.5YR 5/2 or 5/3 or 10YR 5/2 or 5/3. Moist color is 7.5YR 3/4, 4/3, or 4/4 or 10YR 3/4, 4/3, or 4/4. Texture is clay loam or loam. The content of clay ranges from 20 to 35 percent. Reaction ranges from neutral to moderately alkaline.

The 2Bq horizon has dry color of 7.5YR 5/2 or 5/3 or 10YR 5/2 or 5/3. Moist color is 7.5YR or 10YR 3/4, 4/3, or 4/4. Texture is loam. The content of clay ranges from 18 to 27 percent. Reaction ranges from neutral to moderately alkaline.

Bosquejo Taxadjunct

The Bosquejo taxadjunct consists of deep or very deep, somewhat poorly drained soils that formed in alluvium derived from volcanic rocks. These soils are on stream terraces on Southern Cascade foothills. Slopes range from 0 to 2 percent. The mean annual precipitation is about 27 inches (686 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Fine, smectitic, thermic Chromic Haploxererts

Typical Pedon

Bosquejo taxadjunct, on a west-facing slope of 1 percent, under a cover of medusahead, lupine, clover, and plantain, at an elevation of 221 feet (67 m). When described on 4/10/2001, the soil was moist to a depth of 27 inches (69 cm) and slightly moist from 27 to 81 inches (69 to 206 cm). (Colors are for dry soil unless otherwise noted.)

A1—0 to 3 inches (0 to 8 cm); grayish brown (10YR 5/2) clay, dark grayish brown (10YR 4/2) moist; 55 percent clay; strong fine and medium subangular blocky structure; extremely hard, friable, very sticky, very plastic; many very fine and fine roots; few very fine and fine tubular, many very fine to medium irregular, and common coarse irregular pores; 5 percent gravel; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.

A2—3 to 8 inches (8 to 20 cm); grayish brown (10YR 5/2) clay, dark grayish brown (10YR 4/2) moist; 60 percent clay; strong coarse prismatic structure parting to strong medium and coarse subangular blocky; extremely hard, friable, very sticky, very plastic; common very fine and fine roots; common very fine to medium

tubular and irregular pores; 5 percent gravel; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.

Bss1—8 to 17 inches (20 to 43 cm); dark grayish brown (10YR 4/2) clay, dark grayish brown (10YR 4/2) moist; 60 percent clay; strong medium and coarse subangular blocky structure; extremely hard, friable, very sticky, very plastic; common very fine roots; common very fine and fine tubular and irregular pores; 20 percent slickensides; 5 percent gravel; neutral, pH 7.3 by Hellige-Truog; gradual smooth boundary.

Bss2—17 to 27 inches (43 to 69 cm); grayish brown (10YR 5/2) clay, dark grayish brown (10YR 4/2) moist; 60 percent clay; strong fine and medium angular blocky structure; extremely hard, friable, very sticky, very plastic; few very fine roots; few very fine and fine tubular pores; 30 percent slickensides; 5 percent gravel; slightly alkaline, pH 7.8 by Hellige-Truog; clear irregular boundary.

2Btq1—27 to 33 inches (69 to 84 cm); pale brown (10YR 6/3) gravelly clay, yellowish brown (10YR 5/4) moist; 42 percent clay; strong fine and medium subangular blocky structure; extremely hard, friable, very sticky, very plastic; few very fine roots; few very fine and fine tubular pores; 60 percent continuous distinct clay films on faces of peds; 5 percent fine threadlike silica masses on surfaces along pores; 15 percent gravel; moderately alkaline, pH 8.0 by Hellige-Truog; abrupt smooth boundary.

2Btq2—33 to 41 inches (84 to 104 cm); very pale brown (10YR 7/4) very gravelly sandy clay, yellowish brown (10YR 5/4) moist; 40 percent clay; massive; hard, friable, moderately sticky, moderately plastic; few very fine roots; common very fine and fine interstitial and tubular pores; 100 percent continuous distinct clay films; 10 percent fine threadlike silica masses on surfaces along pores; 1 percent cobbles and 60 percent gravel; moderately alkaline, pH 8.0 by Hellige-Truog; clear smooth boundary.

2Btq3—41 to 55 inches (104 to 140 cm); pale brown (10YR 6/3) very gravelly sandy clay, yellowish brown (10YR 5/4) moist; 37 percent clay; massive; slightly hard, friable, moderately sticky, moderately plastic; few very fine roots; many very fine to medium interstitial pores; 100 percent continuous distinct clay films; 5 percent fine threadlike silica masses on surfaces along pores; 5 percent cobbles and 60 percent gravel; moderately alkaline, pH 8.0 by Hellige-Truog; abrupt smooth boundary.

3Bdq1—55 to 70 inches (140 to 178 cm); very pale brown (10YR 8/3) sandy loam, yellowish brown (10YR 5/4) moist; 19 percent clay; massive parting to weak medium and coarse subangular blocky structure; hard, friable, slightly sticky, slightly plastic; many very fine and fine and common medium tubular pores; 5 percent fine threadlike silica masses lining pores; 1 percent gravel; moderately alkaline, pH 8.0 by Hellige-Truog; clear smooth boundary.

3Bdq2—70 to 81 inches (178 to 206 cm); very pale brown (10YR 8/3) sandy loam, yellowish brown (10YR 5/4) moist; 16 percent clay; massive; hard, friable, slightly sticky, slightly plastic; many very fine and fine and common medium tubular pores; 1 percent coarse irregular silica masses around rock fragments; 2 percent gravel; moderately alkaline, pH 8.0 by Hellige-Truog;

Type location: Butte County, California; about 1.12 miles south-southwest of the intersection of Durham Pentz Road and Williams Road, approximately 290 feet north and 2,275 feet west of the southeast corner of sec. 32, T. 21 N., R. 3 E.; 39 degrees, 37 minutes, 33 seconds north latitude and 121 degrees, 39 minutes, 48 seconds west longitude; NAD83; USGS Quad: Hamlin Canyon, California.

Range in Characteristics

The depth to densic material is 40 to 80 inches (102 to 203 cm). This material is underlain by volcanic sandstone. The mean annual soil temperature is 63 to 64

degrees F (17 to 18 degrees C). The soil moisture control section is dry in all parts from about May to October (about 150 to 180 days). The particle-size control section averages 40 to 60 percent clay and 0 to 25 percent rock fragments, mostly gravel. Mineralogy is smectitic. Surface-initiated, reversible cracks 1 to 2 inches (2.5 to 5 cm) wide extend to a depth of 25 to 35 inches (64 to 89 cm) from May through November (200 to 240 days) when the soils are not irrigated. A fluctuating water table can occur at a depth of 12 to 60 inches (30 to 152 cm) from December through April. Redoximorphic features, such as iron masses, occur in the A horizon. Rock fragments on the surface range from 0 to 5 percent gravel and 0 to 3 percent cobbles.

The A horizon has dry color of 10YR 4/2 or 5/2 or 7.5YR 5/2 or 6/2. Moist color is 10YR 4/2 or 7.5YR 4/2. Texture is clay or silty clay. The content of clay ranges from 40 to 60 percent. The content of gravel is 0 to 5 percent. Reaction ranges from slightly acid to slightly alkaline.

The Bss horizon has dry color of 10YR 4/2 or 7.5YR 5/3 or 6/3. Moist color is 10YR 4/2 or 7.5YR 4/3. Texture is clay or silty clay. The content of clay ranges from 40 to 60 percent. The content of gravel is 0 to 10 percent. Reaction ranges from neutral to moderately alkaline.

The 2Btq horizon has dry color of 10YR 6/3, 6/4, 7/3, 7/4, 8/2, or 8/4 or 7.5YR 7/4. Moist color is 10YR 4/3, 5/3, or 5/4 or 7.5YR 4/3. Texture is gravelly clay, very gravelly sandy clay, extremely gravelly clay, extremely gravelly sandy clay loam, or extremely gravelly sandy clay. The content of clay ranges from 22 to 55 percent. The horizon has 0 to 90 percent gravel and 0 to 15 percent cobbles. Reaction ranges from neutral to strongly alkaline.

The 3Bdq horizon has dry color of 10YR 7/3, 7/4, or 8/3. Moist color is 10YR 4/3 or 5/4. Texture is sandy loam, sandy clay loam, or extremely gravelly sandy clay. The content of clay ranges from 15 to 40 percent. The horizon has 0 to 60 percent gravel and 0 to 20 percent cobbles. Reaction ranges from neutral to strongly alkaline.

The Bosquejo taxadjunct is a taxadjunct because it has a gravelly substratum and has densic contact within a depth of 60 inches. These differences do not significantly affect the use, management, or interpretations of the soils.

Bottlehill Series

The Bottlehill series consists of moderately deep, well drained soils that formed in residuum and colluvium derived from metavolcanic and metasedimentary rocks. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada mountains. Slopes range from 3 to 110 percent. The mean annual precipitation is about 75 inches (1,905 mm), and the mean annual air temperature is about 49 degrees F (9 degrees C).

Taxonomic class: Loamy-skeletal, mixed, active, mesic Xeric Haplohumults

Typical Pedon

Bottlehill very gravelly loam, on a south-facing slope of 7 percent, under a cover of mixed conifers, greenleaf manzanita, and prostrate ceanothus, at an elevation of 5,180 feet (1,579 m). When described on 9/23/1997, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 0.5 inch (0 to 1 cm); litter of needles and leaves.

Oe—0.5 inch to 2 inches (1 to 4 cm); partially decomposed litter of needles and leaves.

A1—2 to 4 inches (4 to 11 cm); brown (10YR 5/3) very gravelly loam, very dark grayish brown (10YR 3/2) moist; 18 percent clay; moderate fine granular structure; soft, very friable, nonsticky, nonplastic; many very fine and fine and common medium roots; many very fine and fine irregular and tubular pores; 35

- percent subangular gravel; moderately acid, pH 5.6 by pH meter 1:1 water; NaF pH 9.6; clear smooth boundary.
- A2—4 to 9 inches (11 to 22 cm); brown (10YR 5/3) very gravelly loam, very dark grayish brown (10YR 3/2) moist; 18 percent clay; weak fine granular structure; soft, very friable, nonsticky, nonplastic; many very fine and fine and common medium and coarse roots; many very fine and fine irregular and tubular pores; 45 percent subangular gravel; strongly acid, pH 5.4 by pH meter 1:1 water; NaF pH 10.2; clear smooth boundary.
- Bt1—9 to 13 inches (22 to 32 cm); very pale brown (10YR 7/4) very gravelly loam, brown (7.5YR 5/4) moist; 21 percent clay; weak fine and medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; many very fine and fine, common medium, and few coarse roots; common very fine and fine irregular and tubular pores; many distinct discontinuous clay films on faces of peds and in pores; 40 percent subangular gravel; strongly acid, pH 5.2 by pH meter 1:1 water; NaF pH 9.9; abrupt wavy boundary.
- Bt2—13 to 22 inches (35 to 55 cm); very pale brown (10YR 8/4) very gravelly loam, yellowish brown (10YR 5/6) moist; 26 percent clay; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; common very fine and fine roots; common very fine and fine irregular and tubular pores; many distinct continuous clay films on faces of peds and in pores; 50 percent subangular gravel and 10 percent subangular metamorphic cobbles; very strongly acid, pH 4.8 by pH meter 1:1 water; NaF pH 9.6; gradual smooth boundary.
- Bt3—22 to 33 inches (55 to 85 cm); very pale brown (10YR 7/4) extremely gravelly clay loam, yellowish brown (10YR 5/6) moist; 31 percent clay; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; common very fine and fine roots; common very fine and fine irregular and tubular pores; common distinct continuous clay films on faces of peds and in pores; 55 percent subangular gravel and 20 percent subangular cobbles; very strongly acid, pH 4.9 by pH meter 1:1 water; NaF pH 9.6; abrupt smooth boundary.
- R—33 inches (85 cm); very strongly cemented metavolcanic rock; vertical beds 1 to 2 inches (2.5 to 5 cm) thick.

Type location: Butte County, California; about 2.1 miles north of Inskip, approximately 1,850 feet north and 1,350 feet east of the southwest corner of sec. 16, T. 25 N., R. 4 E.; 40 degrees, 1 minute, 18 seconds north latitude and 121 degrees, 32 minutes, 9.5 seconds west longitude; NAD83; USGS Quad: Butte Meadows, California.

Range in Characteristics

The depth to lithic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 47 to 56 degrees F (8 to 13 degrees C). The soil moisture control section is dry in all parts from about July to October (about 90 days). The particle-size control section averages 18 to 30 percent clay and 35 to 65 percent rock fragments, mostly gravel. Mineralogy is mixed. Rock fragments on the surface range from 35 to 75 percent gravel, 0 to 10 percent cobbles, 0 to 10 percent stones, and 0 to 5 percent boulders. Some pedons have tephra-influenced A horizons.

The A horizon has dry color of 10YR 5/3, 6/2, 6/3, 6/4, or 7/3 or 7.5YR 6/3. Moist color is 10YR 3/2 or 4/3 or 7.5YR 4/3. Texture is very gravelly loam or very gravelly sandy loam. The content of clay ranges from 10 to 20 percent. The horizon has 35 to 60 percent gravel, 0 to 5 percent cobbles, and 0 to 5 percent stones. The content of organic matter is 10 to 20 percent. By sum of cations, base saturation ranges from 20 to 40 percent. Reaction ranges from strongly acid to slightly acid.

The upper part of the Bt horizon has dry color of 10YR 7/3, 7/4, 8/3, or 8/4 or 7.5YR 7/4. Moist color is 10YR 4/4, 5/4, or 5/6 or 7.5YR 4/3, 4/4, 4/6, 5/4, or 5/6.

Texture is very gravelly loam, very gravelly sandy loam, or extremely gravelly loam. The content of clay ranges from 15 to 27 percent. The content of gravel is 35 to 70 percent, the content of cobbles is 0 to 15 percent, and the content of stones is 0 to 5 percent. The content of organic matter is 1.5 to 10 percent. By sum of cations, base saturation ranges from 10 to 20 percent. Reaction ranges from very strongly acid to slightly acid.

The lower part of the Bt horizon has dry color of 10YR 7/4, 8/3, or 8/4. Moist color is 10YR 5/4, 5/6, 5/8, or 6/4 or 7.5YR 5/4. Texture is very gravelly loam, very gravelly sandy clay loam, very gravelly clay loam, extremely gravelly loam, or extremely gravelly clay loam. The content of clay ranges from 18 to 35 percent. The content of gravel is 55 to 75 percent, the content of cobbles is 0 to 30 percent, and the content of stones is 0 to 30 percent. The content of organic matter is 0.5 to 3 percent. By sum of cations, base saturation ranges from 10 to 20 percent. Reaction ranges from very strongly acid to slightly acid.

Boxrobber Series

The Boxrobber series consists of shallow, well drained soils that formed in residuum and colluvium derived from ultramafic rocks. These soils are on ridgetops and side slopes on ultramafic Sierra Nevada mountains. Slopes range from 3 to 70 percent. The mean annual precipitation is about 52 inches (1,321 mm), and the mean annual air temperature is about 56 degrees F (13 degrees C).

Taxonomic class: Loamy-skeletal, mixed, active, mesic, shallow Ultic Haploxeralfs

Typical Pedon

Boxrobber cobbly sandy clay loam, on a south-facing slope of 29 percent, under a cover of whiteleaf manzanita, foothill pine, blue oak, toyon, canyon live oak, and buckbrush, at an elevation of 2,340 feet (713 m). When described on 10/19/2000, the soil was moderately dry to a depth of 16 inches (41 cm) and dry below that depth. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); pink (7.5YR 7/3) cobbly sandy clay loam, brown (7.5YR 5/3) moist; 25 percent clay; moderate fine and medium subangular blocky structure parting to moderate fine and medium granular; slightly hard, friable, slightly sticky, slightly plastic; many very fine and fine roots; many very fine to medium tubular and irregular pores; 10 percent gravel and 15 percent cobbles; slightly acid, pH 6.6 by Hellige-Truog; clear smooth boundary.

Bt1—2 to 8 inches (5 to 20 cm); pink (7.5YR 7/4) very gravelly sandy clay loam, brown (7.5YR 5/4) moist; 30 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; many very fine to medium and few coarse roots; many very fine to medium tubular pores; 60 percent discontinuous distinct clay films; 15 percent cobbles and 25 percent gravel; slightly acid, pH 6.6 by Hellige-Truog; gradual smooth boundary.

Bt2—8 to 16 inches (20 to 41 cm); light brown (7.5YR 6/4) very gravelly clay loam, strong brown (7.5YR 4/6) moist; 35 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine to medium and few coarse roots; many very fine to medium tubular pores; 80 percent continuous distinct clay films; 20 percent cobbles and 35 percent gravel; slightly acid, pH 6.6 by Hellige-Truog; clear wavy boundary.

Crt—16 to 30 inches (41 to 76 cm); white (2.5Y 8/1), weakly cemented bedrock, pale yellow (2.5Y 7/3) moist; few very fine and fine roots; 20 percent continuous prominent clay films; neutral, pH 6.7 by Hellige-Truog; clear smooth boundary.

R—30 inches (76 cm); white (5Y 8/1), very strongly cemented bedrock, pale olive (5Y 6/3) moist; few very fine to medium roots; neutral, pH 6.8 by Hellige-Truog.

Type location: Butte County, California; about 0.75 mile east of Concow School, approximately 1,200 feet north and 2,400 feet west of the southeast corner of sec. 27, T. 22 N., R. 4 E.; 39 degrees, 43 minutes, 48 seconds north latitude and 121 degrees, 30 minutes, 50 seconds west longitude; NAD83; USGS Quad: Cherokee, California.

Range in Characteristics

The depth to paralithic bedrock is 10 to 20 inches (25 to 51 cm). The mean annual soil temperature is 54 to 59 degrees F (12 to 15 degrees C). The particle-size control section averages 27 to 35 percent clay and 35 to 50 percent rock fragments, mostly gravel. Mineralogy is mixed but is affected by magnesium-rich minerals in the series control section. Rock fragments on the surface range from 5 to 60 percent gravel, 5 to 30 percent cobbles, 5 to 20 percent stones, and 3 to 15 percent boulders.

The A horizon has dry color of 7.5YR 6/4, 7/3, 7/4, or 8/3. Moist color is 7.5YR 4/3, 5/3, or 5/4. Texture is cobbly sandy clay loam, gravelly sandy clay loam, cobbly loam, gravelly loam, or very cobbly loam. The content of clay ranges from 22 to 30 percent. The horizon has 10 to 15 percent gravel, 0 to 25 percent cobbles, and 0 to 5 percent stones. Reaction is neutral or slightly acid.

The Bt horizon has dry color of 7.5YR 6/4, 7/4, 7/6, or 8/4. Moist color is 7.5YR 3/4, 4/4, 4/6, 5/4, or 6/6. Texture is very gravelly sandy clay loam, very gravelly clay loam, gravelly clay loam, or very cobbly clay loam. The content of clay ranges from 27 to 35 percent. The horizon has 15 to 35 percent gravel, 0 to 25 percent cobbles, and 0 to 5 percent stones. Reaction is neutral or slightly acid.

Busacca Series

The Busacca series consists of very deep, moderately well drained soils that formed in alluvium derived from mixed rock sources. These soils are on distal alluvial fans. Slopes are 0 to 1 percent. The mean annual precipitation is about 24 inches (610 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Fine, mixed, superactive, thermic Pachic Haploxerolls

Typical Pedon

Busacca clay loam, on a slope of less than 1 percent, under a cover of irrigated pasture grasses, at an elevation of 157 feet (48 m). When described on 7/20/1993, the soil was slightly moist to a depth of 72 inches (183 cm). (Colors are for dry soil unless otherwise noted.)

Ap—0 to 3 inches (0 to 8 cm); dark grayish brown (10YR 4/2) clay loam, very dark grayish brown (10YR 3/2) moist; 35 percent clay; moderate medium platy structure; extremely hard, slightly rigid, moderately sticky, very plastic; common very fine and few fine and medium roots; common very fine and fine tubular pores; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

A—3 to 8 inches (8 to 20 cm); dark grayish brown (10YR 4/2) clay loam, very dark grayish brown (10YR 3/2) moist; 35 percent clay; strong coarse prismatic structure parting to strong fine and medium granular; extremely hard, slightly rigid, moderately sticky, very plastic; common very fine and few fine and medium roots; common very fine and fine tubular pores; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

Bw1—8 to 16 inches (20 to 41 cm); brown (10YR 4/3) clay loam, dark brown (10YR 3/3) moist; 35 percent clay; strong coarse prismatic structure parting to strong

fine angular blocky; extremely hard, slightly rigid, moderately sticky, very plastic; common very fine and few fine and medium roots; few very fine and fine tubular pores; neutral, pH 7.0 by Hellige-Truog; abrupt smooth boundary.

Bw2—16 to 28 inches (41 to 71 cm); brown (10YR 4/3) silty clay loam, dark brown (10YR 3/3) moist; 37 percent clay; moderate medium prismatic structure parting to strong fine angular blocky; hard, very firm, moderately sticky, very plastic; common very fine roots; common very fine and few fine tubular pores; neutral, pH 7.0 by Hellige-Truog; abrupt smooth boundary.

Bw3—28 to 43 inches (71 to 109 cm); brown (10YR 5/3) silty clay loam, dark brown (10YR 3/3) moist; 35 percent clay; moderate fine angular blocky structure; very hard, extremely firm, moderately sticky, very plastic; few very fine roots; few fine and common very fine tubular pores; slightly alkaline, pH 7.5 by Hellige-Truog; gradual smooth boundary.

Bw4—43 to 60 inches (109 to 152 cm); brown (10YR 5/3) clay loam, dark brown (10YR 3/3) moist; 33 percent clay; weak fine angular blocky structure; moderately hard, firm, slightly sticky, moderately plastic; few very fine roots; few very fine tubular pores; few fine round black (N 2/0 moist) iron-manganese concretions throughout; slightly alkaline, pH 7.5 by Hellige-Truog; gradual smooth boundary.

Bw5—60 to 72 inches (152 to 183 cm); brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; 29 percent clay; weak fine subangular blocky structure; moderately hard, firm, slightly sticky, moderately plastic; few very fine roots; common very fine and fine tubular pores; throughout the horizon, few fine round black (N 2/0 moist) iron-manganese concretions with sharp boundaries; slightly alkaline, pH 7.5 by Hellige-Truog.

Type location: Butte County, California; about 2.5 miles east of Durham, approximately 2,800 feet east and 100 feet south of the intersection of Durham Highway and Esquon Road; T. 21 N., R. 2 E.; in an unsectioned area in the Esquon Land Grant; 39 degrees, 38 minutes, 44 seconds north latitude and 121 degrees, 45 minutes, 12 seconds west longitude; NAD27; USGS Quad: Chico, California.

Range in Characteristics

The thickness of the mollic epipedon is 20 to 35 inches (51 to 89 cm). The mean annual soil temperature is 60 to 62 degrees F (16 to 17 degrees C). The soil moisture control section is dry from July to November (120 to 125 days). The particle-size control section averages 35 to 40 percent clay. Mineralogy is mixed. Surface-initiated, reversible cracks $\frac{1}{8}$ to $\frac{1}{2}$ inch wide extend to a depth of 28 inches (71 cm) from about May 15 to October 15 (140 to 160 days) when the soils are not irrigated. A fluctuating water table can occur between depths of 30 (76 cm) and more than 80 inches (203 cm) from December through April. Some pedons have lime below a depth of 28 inches (71 cm).

The A horizon has dry color of 10YR 4/1, 4/2, 4/3, 5/2, or 5/3. Moist color is 10YR 3/1, 3/2, or 3/3. The content of clay ranges from 30 to 40 percent. The content of organic matter is 2 to 5 percent. Reaction ranges from slightly acid to slightly alkaline.

The upper part of the Bw horizon has dry color of 10YR 4/3, 5/2, 5/3, 6/2, or 6/3. Moist color is 10YR 3/2, 3/3, 4/2, or 4/3. Texture is clay loam, silty clay loam, or clay. The content of clay ranges from 35 to 42 percent. The content of organic matter is 0.2 to 2 percent. Reaction is neutral or slightly alkaline.

The lower part of the Bw horizon has dry color of 10YR 5/3, 6/3, 6/4, 7/3, or 7/4. Moist color is 10YR 3/3, 4/2, 4/3, 4/4, 5/3, or 5/4 or 7.5YR 4/3 or 4/4. Texture is clay loam or loam. The content of clay ranges from 25 to 35 percent. This part of the Bw horizon has redoximorphic features, such as oxidized iron masses and iron manganese concentrations. The content of organic matter is 0.1 to 1 percent. Reaction ranges from neutral to strongly alkaline.

Butteside Series

The Butteside series consists of moderately deep, moderately well drained soils that formed in residuum and colluvium derived from volcanic rocks. These soils are on ridgetops and side slopes on Cascade foothills. Slopes range from 2 to 35 percent. The mean annual precipitation is about 27 inches (686 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Fine, mixed, superactive, thermic Typic Haploxeralfs

Typical Pedon

Butteside gravelly loam, on a west-facing slope of 25 percent, under a cover of annual grasses and forbs, at an elevation of 265 feet (81 m). When described on 5/10/2001, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); pale brown (10YR 6/3) gravelly loam, dark grayish brown (10YR 4/2) moist; 23 percent clay; moderate thick platy structure parting to moderate medium and coarse subangular blocky; extremely hard, firm, slightly sticky, slightly plastic; many very fine roots; few very fine and fine tubular and irregular pores; 20 percent distinct threadlike strong brown (7.5YR 5/6) oxidized iron masses in pores; 1 percent chert gravel and 14 percent volcanic gravel; slightly acid, pH 6.6 by Hellige-Truog; abrupt smooth boundary.

Bt1—2 to 8 inches (5 to 20 cm); brown (7.5YR 5/3) clay loam, brown (7.5YR 4/3) moist; 32 percent clay; moderate medium and coarse prismatic structure parting to moderate medium angular blocky; very hard, firm, moderately sticky, moderately plastic; common very fine roots; common fine and medium irregular and few very fine tubular pores; 80 percent continuous distinct clay films on faces of peds; 1 percent chert gravel and 9 percent volcanic gravel; neutral, pH 6.9 by Hellige-Truog; clear smooth boundary.

Bt2—8 to 13 inches (20 to 33 cm); brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; 38 percent clay; strong fine and medium subangular blocky structure; moderately hard, friable, moderately sticky, moderately plastic; common very fine roots; common very fine and fine and few medium irregular and tubular pores; 85 percent continuous distinct clay films on faces of peds; 1 percent chert gravel and 4 percent volcanic gravel; neutral, pH 6.9 by Hellige-Truog; abrupt smooth boundary.

Bt3—13 to 27 inches (33 to 69 cm); pale brown (10YR 6/3) clay, brown (10YR 4/3) moist; 50 percent clay; strong medium and coarse prismatic structure parting to strong fine, medium, and coarse angular blocky; extremely hard, firm, very sticky, very plastic; common very fine roots; many very fine to medium irregular and common very fine and fine tubular pores; 90 percent continuous distinct clay films on faces of peds; 1 percent chert gravel, 1 percent volcanic gravel, and 5 percent sandstone cobbles; neutral, pH 7.2 by Hellige-Truog; abrupt smooth boundary.

2Crtq—27 inches (69 cm); very pale brown (10YR 8/3), moderately cemented volcanic sandstone bedrock, light yellowish brown (10YR 6/4) moist; slightly alkaline, pH 7.5 by Hellige-Truog.

Type location: Butte County, California; about 1.25 miles south of Durham-Pentz Road and 0.5 mile west of Clark Road, approximately 100 feet south and 1,800 feet east of the northwest corner of sec. 4, T. 20 N., R. 3 E.; 39 degrees, 37 minutes, 30 seconds north latitude and 121 degrees, 38 minutes, 44 seconds west longitude; NAD83; USGS Quad: Shippee, California.

Range in Characteristics

The depth to paralithic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 60 to 68 degrees F (16 to 20 degrees C). The particle-size

control section averages 35 to 50 percent clay and 5 to 35 percent rock fragments, mostly gravel. Mineralogy is mixed. Redoximorphic features, such as masses of oxidized iron with color of 7.5YR 5/6, occur in the A horizon. Rock fragments on the surface range from 0 to 15 percent gravel, 0 to 25 percent cobbles, 0 to 10 percent stones, and 0 to 1 percent boulders.

The A horizon has dry color of 10YR 4/2, 6/2, or 6/3 or 7.5YR 5/2 or 6/3. Moist color is 10YR 4/2 or 3/2 or 7.5YR 4/2 or 3/2. Texture is gravelly loam, gravelly clay loam, or sandy clay loam. The content of clay ranges from 22 to 38 percent. The horizon has 2 to 20 percent gravel and 0 to 5 percent cobbles.

The Bt horizon has dry color of 10YR 5/2, 5/3, 6/3, 7/3, or 7/4 or 7.5YR 4/2, 5/2, or 5/3. Moist color is 10YR 4/2 or 4/3 or 7.5YR 4/2 or 4/3. Texture is gravelly clay loam, cobbly clay loam, clay loam, sandy clay loam, sandy clay, gravelly clay, very gravelly clay, or clay. The content of clay ranges from 30 to 50 percent. The horizon has 2 to 25 percent gravel and 0 to 15 percent cobbles. Reaction ranges from slightly acid to strongly alkaline.

Calcic Haploxerolls

Calcic Haploxerolls consist of moderately deep or deep, moderately well drained soils that formed in alluvium derived from mixed rock sources. These soils are on knolls on low terraces at the edge of basins. Slope ranges from 0 to 2 percent. The mean annual precipitation is about 18 inches (457 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Mixed, superactive, thermic Calcic Haploxerolls

Typical Pedon

Calcic Haploxerolls sandy loam, on a slope of 1 percent, in a fallow field at an elevation of 72 feet (22 m). When described on 9/22/1988, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 5 inches (0 to 13 cm); dark grayish brown (10YR 4/2) sandy loam, very dark brown (10YR 2/2) moist; 15 percent clay; moderate fine and medium granular structure; soft, very friable, nonsticky, slightly plastic; many fine and few medium roots; many very fine and common fine tubular pores; many wormcasts; moderately alkaline, pH 8.0 by Hellige-Truog; abrupt smooth boundary.

Ak—5 to 17 inches (13 to 43 cm); grayish brown (10YR 5/2) sandy loam, very dark grayish brown (10YR 3/2) moist; 15 percent clay; moderate fine subangular blocky structure; soft, friable, slightly sticky, slightly plastic; few very fine roots; common very fine and few fine tubular pores; finely disseminated carbonates; violently effervescent; moderately alkaline, pH 8.0 by Hellige-Truog; clear wavy boundary.

Bk1—17 to 20 inches (43 to 51 cm); brown (10YR 5/3) sandy loam, dark brown (10YR 3/3) moist; 17 percent clay; weak fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine roots; many very fine and common fine tubular pores; 2 percent medium spherical carbonate masses; strongly effervescent; moderately alkaline, pH 8.2 by Hellige-Truog; clear wavy boundary.

Bk2—20 to 33 inches (51 to 84 cm); pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; 15 percent clay; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; few very fine and fine roots; common very fine and fine and few medium tubular pores; 2 percent medium spherical carbonate masses; slightly effervescent; moderately alkaline, pH 8.2 by Hellige-Truog; clear wavy boundary.

C—33 to 44 inches (84 to 112 cm); pale brown (10YR 6/3) sandy loam, dark brown (10YR 3/3) moist; 14 percent clay; moderate fine and medium subangular blocky structure; very friable, slightly sticky, slightly plastic; few very fine and fine roots; common very fine and fine tubular pores; moderately alkaline, pH 8.2 by Hellige-Truog; abrupt wavy boundary.

2Cd—44 to 60 inches (112 to 152 cm); densic material; massive; noncemented.

Type location: Butte County, California; about 5.7 miles southwest of Gridley, approximately 175 feet north and 150 feet west of the southeast corner of sec. 13, T. 17 N., R. 1 E.; 39 degrees, 19 minutes, 7 seconds north latitude and 121 degrees, 47 minutes, 53 seconds west longitude; NAD27; USGS Quad: Pennington, California.

Range in Characteristics

The depth to densic material ranges from 20 to 60 inches (102 to 152 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry from about June 15 to October 31 (about 138 days). The particle-size control section averages 10 to 18 percent clay. Mineralogy is mixed. The content of organic matter is 1 to 2 percent to a depth of 17 inches (43 cm). A fluctuating water table can occur between the top of the densic material and 11 inches (28 cm) below the surface of the soil from December through April. Some pedons do not have a C horizon.

The A horizon has dry color of 10YR 4/2, 4/3, 5/2, or 5/3. Moist color is 10YR 2/2, 3/1, 3/2, or 3/3. Texture is sandy loam, fine sandy loam, or loam. The content of clay ranges from 15 to 23 percent. This horizon is noneffervescent to strongly effervescent. Carbonates are disseminated. Reaction ranges from neutral to strongly alkaline.

The Ak horizon has dry color of 10YR 4/2, 4/3, 5/2, or 5/3. Moist color is 10YR 3/1, 3/2, or 3/3. Texture is sandy loam or loam. The content of clay ranges from 15 to 25 percent. This horizon is slightly effervescent to violently effervescent. Carbonates are disseminated. Reaction ranges from slightly alkaline to strongly alkaline.

The Bk horizon has dry color of 10YR 5/3, 6/2, 6/3, 6/4, or 7/2. Moist color is 10YR 3/3, 4/2, 4/3, or 4/4. The content of clay ranges from 12 to 27 percent. Texture is sandy loam or loam. This horizon is slightly effervescent to violently effervescent. Carbonates are commonly disseminated and may occur as spherical carbonate masses. Reaction ranges from slightly alkaline to strongly alkaline.

The C horizon, where it occurs, has dry color of 10YR 6/2, 6/3, 7/2, or 7/3. Moist color is 10YR 3/3, 4/2, 4/6, or 5/3. Texture is sandy loam or loamy sand. The content of clay ranges from 12 to 20 percent. Reaction is moderately alkaline or strongly alkaline.

Campbellhills Series

The Campbellhills series consists of deep, somewhat poorly drained soils that formed in residuum weathered from basalt. These soils are in joint fractures on the top of basalt plateaus on volcanic Sierra Nevada foothills. Slopes range from 2 to 15 percent. The mean annual precipitation is about 25 inches (635 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Loamy-skeletal, mixed, superactive, thermic Ultic Argixerolls

Typical Pedon

Campbellhills gravelly loam, on a west-facing slope of 2 percent, under a cover of annual grasses, at an elevation of 380 feet (116 m). When described on 4/28/1997, the soil was dry to a depth of 39 inches (99 cm) and moist from 39 to 50 inches (99 to 127 cm). (Colors are for dry soil unless otherwise noted.)

- A—0 to 2 inches (0 to 5 cm); brown (10YR 5/3) gravelly loam, dark brown (7.5YR 3/2) moist; 15 percent clay; moderate thick platy structure parting to weak very fine subangular blocky; slightly hard, very friable, nonsticky, slightly plastic; many very fine roots; many very fine irregular pores; 25 percent strong brown (7.5YR 4/6 moist) oxidized iron masses; 10 percent basalt cobbles and 15 percent basalt gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.
- Bt1—2 to 7 inches (5 to 18 cm); brown (10YR 5/3) gravelly loam, dark brown (7.5YR 3/2) moist; 18 percent clay; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine roots; common very fine tubular pores; 20 percent clay films on faces of peds and in pores; 25 percent basalt gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt wavy boundary.
- Bt2—7 to 17 inches (18 to 43 cm); brown (10YR 4/3) very gravelly clay loam, dark brown (7.5YR 3/2) moist; 30 percent clay; moderate fine subangular blocky structure; hard, firm, moderately sticky, slightly plastic; common very fine roots; many very fine tubular pores; 30 percent clay films on faces of peds and in pores; 40 percent basalt gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.
- Bt3—17 to 29 inches (43 to 74 cm); brown (10YR 4/3) very gravelly clay loam, brown (7.5YR 4/2) moist; 33 percent clay; moderate fine subangular blocky structure; hard, firm, moderately sticky, moderately plastic; few very fine roots; many very fine tubular pores; 40 percent clay films on faces of peds and in pores; 5 percent basalt cobbles and 50 percent basalt gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.
- Bt4—29 to 39 inches (74 to 99 cm); brown (7.5YR 4/3) extremely gravelly clay loam, dark brown (7.5YR 3/2) moist; 36 percent clay; moderate fine subangular blocky structure; hard, very firm, moderately sticky, moderately plastic; few very fine roots; common very fine tubular pores; 50 percent clay films on faces of peds and in pores; 10 percent basalt cobbles and 55 percent basalt gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.
- Bt5—39 to 50 inches (99 to 127 cm); brown (10YR 5/3) extremely gravelly clay loam, brown (7.5YR 4/2) moist; 38 percent clay; moderate fine subangular blocky structure; hard, very firm, moderately sticky, moderately plastic; few very fine roots; common very fine tubular pores; 60 percent clay films on faces of peds and in pores; 20 percent basalt cobbles; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.
- R—50 inches (127 cm); lithic basalt with weathering rind.

Type location: Butte County, California; about 3.1 miles northwest of Oroville, approximately 1,650 feet east and 550 feet south of the northwest corner of sec. 10, T. 19 N., R. 3 E.; 39 degrees, 31 minutes, 20.9 seconds north latitude and 121 degrees, 37 minutes, 37.9 seconds west longitude; NAD83; USGS Quad: Shippee, California.

Range in Characteristics

The depth to lithic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 61 to 64 degrees F (16 to 18 degrees C). The soil moisture control section is dry in all parts from May to about November (about 150 to 200 days). The particle-size control section averages 20 to 30 percent clay and 40 to 55 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. By sum of cations, base saturation ranges from 35 to 40 percent. By ammonium acetate, it is 76 to 91 percent. A fluctuating water table can occur between the top of the bedrock and 3 inches (8 cm) below the surface of the soil from December through April. Rock fragments on the surface range from 10 to 25 percent gravel and 0 to 30 percent cobbles.

The A horizon has dry color of 7.5YR 3/3, 4/4, or 6/4 or 10YR 3/3, 4/3, or 4/4. Moist color is 7.5YR 2/2, 3/2, 3/3, or 4/3 or 10YR 2/2 or 3/2. Texture is loam, gravelly loam,

or cobbly loam. The content of clay ranges from 15 to 22 percent. The horizon has 10 to 20 percent gravel and 0 to 15 percent cobbles. The content of organic matter is 4 to 8 percent. Reaction is moderately acid or slightly acid.

The Bt1 horizon has dry color of 7.5YR 3/3, 3/4, 4/4, or 4/6 or 10YR 3/3, 4/3, or 4/4. Moist color is 7.5YR 2/2, 3/2, 3/3, or 4/3 or 10YR 2/2, 3/2, or 3/3. Texture is cobbly loam, gravelly loam, very gravelly loam, or very cobbly loam. The content of clay ranges from 18 to 27 percent. The horizon has 10 to 30 percent gravel and 0 to 40 cobbles. The content of organic matter is 3 to 6 percent. Reaction is moderately acid or slightly acid.

The Bt2, Bt3, Bt4 and Bt5 horizons have dry colors of 7.5YR 3/4 or 4/3 or 10YR 3/4 or 4/4. Moist color is 7.5YR 3/2 or 3/3 or 10YR 3/2, 3/3, or 3/4. Texture is very gravelly clay loam, very cobbly clay loam, very gravelly loam, very cobbly loam, extremely cobbly loam, extremely cobbly clay loam, or extremely gravelly clay loam. The content of clay ranges from 25 to 40 percent. The content of gravel is 10 to 65 percent, and the content of cobbles is 0 to 50 percent. The content of organic matter is 0.3 to 2 percent. Reaction ranges from moderately acid to neutral.

Carhart Series

The Carhart series consists of moderately deep, poorly drained soils that formed in alluvium derived from volcanic rocks. These soils are in basins and drainageways, on toeslopes and footslopes, and in saddles on Cascade foothills. Slopes range from 0 to 12 percent. The mean annual precipitation is about 28 inches (711 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine, smectitic, thermic Xeric Endoaquerts

Typical Pedon

Carhart clay, on a north-facing slope of 3 percent, under a cover of ryegrass, medusahead, lupine, and clover, at an elevation of 282 feet (86 m). When described on 4/24/2001, the soil was slightly moist throughout. (Colors are for dry soil unless otherwise noted.)

- A—0 to 2 inches (0 to 6 cm); gray (7.5YR 5/1) clay, dark gray (7.5YR 4/1) moist; 55 percent clay; strong medium and coarse subangular blocky structure; very rigid, friable, very sticky, very plastic; many very fine roots; many very fine to medium irregular and common very fine and fine tubular pores; neutral, pH 6.8 by Hellige-Truog; gradual smooth boundary.
- Bssg1—2 to 12 inches (6 to 30 cm); gray (7.5YR 5/1) clay, dark gray (7.5YR 4/1) moist; 55 percent clay; moderate coarse prismatic structure parting to strong medium and coarse angular blocky; very rigid, friable, very sticky, very plastic; common very fine and fine roots; common very fine and fine irregular and tubular and common medium irregular pores; 20 percent slickensides; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.
- Bssg2—12 to 24 inches (30 to 61 cm); gray (7.5YR 5/1) clay, dark gray (7.5YR 4/1) moist; 55 percent clay; strong fine and medium angular blocky structure; very rigid, friable, very sticky, very plastic; common very fine roots; common very fine and fine irregular and tubular pores; 50 percent slickensides; slightly alkaline, pH 7.5 by Hellige-Truog; gradual smooth boundary.
- Bssg3—24 to 30 inches (61 to 76 cm); gray (7.5YR 5/1) clay, dark gray (7.5YR 4/1) moist; 55 percent clay; strong fine and medium subangular blocky structure; very rigid, friable, very sticky, very plastic; few very fine roots; few very fine and fine tubular pores; 15 percent slickensides; moderately alkaline, pH 8.0 by Hellige-Truog; clear wavy boundary.

2Crtk—30 inches (76 cm); moderately cemented volcanic sandstone bedrock; 15 percent clay films; 15 percent carbonate masses in cracks; slight effervescence, by HCl, 1 normal; moderately alkaline, pH 8.5 by Hellige-Truog.

Type location: Butte County, California; about 1.1 miles south of the intersection of Durham-Pentz Road and Clark Road, approximately 2,350 feet north and 800 feet east of the southwest corner of sec. 34, T. 21 N., R. 3 E.; 39 degrees, 37 minutes, 55 seconds north latitude and 121 degrees, 38 minutes, 1 second west longitude; NAD83; USGS Quad: Hamlin Canyon, California.

Range in Characteristics

The depth to paralithic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 60 to 68 degrees F (16 to 20 degrees C). The particle-size control section averages 40 to 59 percent clay and 0 to 10 percent rock fragments, mostly gravel. Mineralogy is smectitic. Reversible, surface-initiated cracks 1 to 2 inches (3 to 5 cm) wide extend to a depth of 20 inches (51 cm) for 200 to 250 days when the soils are not irrigated. A fluctuating water table can occur between the top of the bedrock and the surface of the soil from December through May. Rock fragments on the surface range from 0 to 5 percent gravel and 0 to 5 percent cobbles. Some pedons have Bss and Crq horizons or a gravelly substratum.

The A horizon has dry color of 7.5YR 5/1, 5/2, 6/2, or 6/3 or 10YR 4/1, 5/1, or 6/1. Moist color is 7.5YR 4/1, 4/2, or 3/2; 10YR 3/2 or 4/1; or 5YR 4/1. Texture is clay. The content of clay ranges from 40 to 59 percent. The content of gravel is 0 to 10 percent. Redoximorphic features occur as oxidized iron masses and iron-manganese masses. Reaction is neutral or slightly alkaline.

The Bssg horizon has dry color of 7.5YR 4/1, 4/2, 5/1, 5/2, or 5/3 or 10YR 5/2 or 6/1. Moist color is 7.5YR 4/1 or 4/2 or 10YR 4/1 or 5/1. Texture is clay. The content of clay ranges from 40 to 59 percent. The content of gravel is 0 to 10 percent. Redoximorphic features occur as iron-manganese nodules and a gleyed matrix. Reaction ranges from neutral to strongly alkaline.

Carhart Taxadjunct

The Carhart taxadjunct consists of shallow or moderately deep, poorly drained soils that formed in alluvium derived from volcanic rocks. These soils are in basins on strath terraces on Cascade foothills. Slopes range from 0 to 2 percent. The mean annual precipitation is about 27 inches (686 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Clayey, smectitic, thermic, shallow Xeric Endoaquerts

Typical Pedon

Carhart taxadjunct, on a southwest-facing slope of 1 percent, under a cover of soft chess, annual ryegrass, and Mediterranean barley, at an elevation of 515 feet (157 m). When described on 5/12/1998, the soil was moist throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 4 inches (0 to 10 cm), dark gray (7.5YR 4/1) clay, brown (7.5YR 4/2) moist; 55 percent clay; strong fine and medium granular structure; very hard, firm, very sticky, very plastic; common fine and many very fine roots; many very fine and fine irregular and tubular pores; 10 percent cobbles; slightly acid, pH 6.6 by Hellige-Truog; gradual smooth boundary.

Bss1—4 to 11 inches (10 to 28 cm); dark gray (7.5YR 4/1) gravelly clay, brown (7.5YR 4/2) moist; 50 percent clay; moderate medium subangular blocky structure; very hard, firm, very sticky, very plastic; few fine and common very fine

roots; common very fine and fine tubular and irregular pores; 10 percent slickensides; 5 percent cobbles and 10 percent gravel; neutral, pH 6.8 by Hellige-Truog; clear smooth boundary.

Bss2—11 to 17 inches (28 to 43 cm); dark gray (7.5YR 4/1) clay, brown (7.5YR 4/2) moist; 45 percent clay; moderate medium subangular blocky structure; very hard, firm, very sticky, very plastic; few fine and common very fine roots; common very fine and fine tubular and irregular pores; 10 percent slickensides; 2 percent gravel and 5 percent cobbles; neutral, pH 6.9 by Hellige-Truog; abrupt smooth boundary.

2R—17 inches (43 cm); indurated mudflow breccia bedrock.

Type location: Butte County, California; about 1.65 miles northeast of the intersection of Keefer Road and Cohasset Highway, approximately 590 feet south and 500 feet west of the northeast corner of sec. 14, T. 23 N., R. 1 E.; 39 degrees, 51 minutes, 14 seconds north latitude and 121 degrees, 49 minutes, 35 seconds west longitude; NAD27; USGS Quad: Richardson Springs, California.

Range in Characteristics

The depth to lithic bedrock is 10 to 40 inches (25 to 102 cm). The mean annual soil temperature is 60 to 68 degrees F (16 to 20 degrees C). The soil moisture control section is dry in all parts from about June to November (about 150 days). The particle-size control section averages 40 to 60 percent clay and 5 to 35 percent rock fragments, mostly cobbles. Mineralogy is smectitic. Surface-initiated, reversible cracks 1 to 2 inches (2.5 to 5 cm) wide extend to a depth of 10 to 24 inches (25 to 61 cm) from about May to November for 150 to 180 days when the soils are not irrigated. A fluctuating water table can occur between the top of the bedrock and the surface of the soil from November through May. Rock fragments on the surface range from 0 to 10 percent gravel, 5 to 30 percent cobbles, 0 to 20 stones, and 0 to 3 percent boulders.

The A horizon has dry color of 7.5YR 4/1 or 3/2 or 10YR 4/1 or 3/2. Moist color is 7.5YR 4/2 or 3/2 or 10YR 4/2 or 3/2. Texture is clay, gravelly clay, cobbly clay, or very cobbly clay. The content of clay ranges from 50 to 60 percent. The horizon has 0 to 10 percent gravel, 5 to 35 percent cobbles, and 0 to 5 percent stones. Redoximorphic features occur as iron and iron-manganese masses. Reaction is slightly acid or neutral.

The Bss horizon has dry color of 7.5YR 4/1 or 3/1 or 10YR 4/1. Moist color is 7.5YR 3/2, 4/2, or 4/3 or 10YR 3/2 or 4/2. Texture is clay, gravelly clay, cobbly clay, very cobbly clay, or extremely cobbly clay. The content of clay ranges from 40 to 60 percent. The horizon has 2 to 15 percent gravel, 5 to 60 percent cobbles, and 0 to 10 percent stones. Redoximorphic features occur as iron-manganese nodules and a manganese capping on the bedrock. Reaction is neutral.

The Carhart taxadjunct is a taxadjunct because it is underlain by lithic bedrock instead of paralithic bedrock and is shallow or moderately deep. These differences do not significantly affect the use, management, or interpretations of the soils.

Cerpone Series

The Cerpone series consists of deep, well drained soils that formed in residuum and colluvium derived from serpentized rocks. These soils are on ridgetops and side slopes on ultramafic Sierra Nevada mountains. Slopes range from 3 to 70 percent. The mean annual precipitation is about 60 inches (1,524 mm), and the mean annual air temperature is about 55 degrees F (13 degrees C).

Taxonomic class: Fine-loamy, parasesquic, mesic Ultic Haploxeralfs

Typical Pedon

Cerpone gravelly loam, on a northeast-facing slope of 11 percent, under a cover of ponderosa pine, incense cedar, Douglas-fir, and whiteleaf manzanita, at an elevation

of 3,140 feet (957 m). When described on 9/25/1997, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 3 cm); needles and twigs.

Oe—1 to 2 inches (3 to 4 cm); partially decomposed needles and twigs.

A—2 to 4 inches (4 to 9 cm); light brown (7.5YR 6/4) gravelly loam, dark brown (7.5YR 3/4) moist; 18 percent clay; strong fine and medium granular structure; slightly hard, friable, nonsticky, slightly plastic; many very fine and fine roots throughout; many very fine to medium irregular and tubular pores; noneffervescent; 20 percent gravel; moderately acid, pH 5.9 by pH meter 1:1 water; clear smooth boundary.

Bt1—4 to 9 inches (9 to 24 cm); reddish brown (5YR 5/4) gravelly loam, dark reddish brown (5YR 3/4) moist; 22 percent clay; moderate fine and medium subangular blocky structure; soft, friable, slightly sticky, slightly plastic; common very fine to medium and few coarse roots; many very fine to medium irregular and tubular pores; few faint discontinuous clay films in root channels and pores; noneffervescent; 20 percent gravel and 10 percent cobbles; moderately acid, pH 6.0 by pH meter 1:1 water; clear smooth boundary.

Bt2—9 to 17 inches (24 to 42 cm); yellowish red (5YR 5/6) cobbly loam, dark reddish brown (5YR 3/4) moist; 26 percent clay; moderate fine and medium subangular blocky structure; soft, friable, slightly sticky, slightly plastic; common very fine to medium roots; many very fine and fine and few medium irregular and tubular pores; few faint discontinuous clay films in root channels and pores; noneffervescent; 10 percent gravel and 20 percent cobbles; slightly acid, pH 6.2 by pH meter 1:1 water; gradual smooth boundary.

Bt3—17 to 26 inches (42 to 67 cm); strong brown (7.5YR 5/6) gravelly clay loam, yellowish red (5YR 4/6) moist; 31 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine and fine and common medium irregular and tubular pores; common distinct discontinuous clay films in root channels and pores; noneffervescent; 15 percent gravel; slightly acid, pH 6.3 by pH meter 1:1 water; clear smooth boundary.

Bt4—26 to 41 inches (67 to 103 cm); strong brown (7.5YR 5/6) very gravelly silty clay loam, strong brown (7.5YR 5/8) moist; 34 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine and fine and common medium irregular and tubular pores; common distinct discontinuous clay films on faces of peds and in pores; noneffervescent; 40 percent gravel; neutral, pH 6.6 by pH meter 1:1 water; clear smooth boundary.

Bt5—41 to 57 inches (103 to 144 cm); yellowish brown (10YR 5/6) very gravelly silty clay loam, dark yellowish brown (10YR 4/6) moist; 29 percent clay; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine to medium roots; many very fine and fine irregular and tubular pores; few distinct discontinuous clay films in root channels and pores; noneffervescent; 55 percent gravel; neutral, pH 6.7 by pH meter 1:1 water; abrupt smooth boundary.

R—57 inches (144 cm); very strongly cemented ultramafic bedrock.

Type location: Butte County, California; about 1.2 miles northeast of Sawmill Peak, approximately 2,150 feet south and 250 feet east of the northwest corner of sec. 28, T. 23 N., R. 4 E.; 39 degrees, 49 minutes, 23.54 seconds north latitude and 121 degrees, 32 minutes, 29.94 seconds west longitude; NAD83; USGS Quad: Paradise East, California.

Range in Characteristics

The depth to lithic bedrock is 40 to 60 inches (51 to 102 cm). The mean annual soil temperature is 55 to 58 degrees F (13 to 14 degrees C). The soil moisture control section is dry in all parts from about July to October (about 90 days). The particle-size control section averages 25 to 35 percent clay and 15 to 35 percent rock fragments, mostly gravel. Mineralogy is parasesquic. Rock fragments on the surface range from 10 to 30 percent gravel, 0 to 20 percent cobbles, and 0 to 10 percent stones. The subsurface horizons have more than 40 percent silt. Magnesium extractable bases in the majority of the control section equal or exceed calcium extractable bases.

The A horizon has dry color of 7.5YR 6/3, 6/4, or 6/6 or 5YR 5/4, 6/4, or 6/6. Moist color is 7.5YR 3/4 or 4/3 or 5YR 4/3 or 6/4. Texture is gravelly or very gravelly loam. The content of clay ranges from 16 to 22 percent. The horizon has 15 to 35 percent gravel, 0 to 10 percent cobbles, and 0 to 5 percent stones. Reaction is moderately acid or slightly acid.

The upper part of the Bt horizon has dry color of 7.5YR 6/4, 6/6, or 5/8 or 5YR 5/4 or 5/6. Moist color is 7.5YR 4/4 or 5YR 3/4 or 4/4. Texture is gravelly or cobbly loam. The content of clay ranges from 20 to 27 percent. The content of gravel is 10 to 30 percent, and the content of cobbles is 0 to 20 percent. Reaction is moderately acid or slightly acid.

The lower part of the Bt horizon has dry color of 7.5YR 5/6, 6/4, 6/6, or 7/6; 5YR 6/4, 5/6, or 6/6; or 10YR 5/6. Moist color is 7.5YR 5/8; 5YR 4/4, 4/6, or 5/6; or 10YR 4/6. Texture is gravelly clay loam, very gravelly silty clay loam, very gravelly loam, or very gravelly clay loam. The content of clay ranges from 25 to 35 percent. The content of gravel is 15 to 60 percent, the content of cobbles is 0 to 15 percent, and the content of stones is 0 to 5 percent. Reaction is slightly acid or neutral.

Charger Series

The Charger series consists of very deep, moderately well drained soils that formed in overbank alluvium over channel alluvium derived from dominantly volcanic rocks. These soils are on proximal alluvial fans. Slopes range from 0 to 2 percent. The mean annual precipitation is about 25 inches (635 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Coarse-loamy, mixed, superactive, thermic Typic Haploxerolls

Typical Pedon

Charger fine sandy loam, on a west-facing slope of less than 1 percent, under a cover of plantain, mouse barley, and valley oak seedlings, at an elevation of 227 feet (69 m). When described on 6/11/1997, the soil was dry from 0 to 42 inches (0 to 107 cm), slightly moist from 42 to 63 inches (107 to 160 cm), and moist below 63 inches (160 cm). (Colors are for dry soil unless otherwise noted.)

Ap—0 to 3 inches (0 to 8 cm); brown (10YR 5/3) fine sandy loam, dark brown (10YR 3/3) moist; 14 percent clay; moderate medium platy structure parting to moderate fine and medium granular; slightly hard, friable, nonsticky, nonplastic; many very fine and common fine roots; many very fine and fine vesicular and tubular pores; 10 percent gravel; noneffervescent; neutral, pH 7.0 by Hellige-Truog; abrupt smooth boundary.

A1—3 to 7 inches (8 to 18 cm); brown (10YR 5/3) fine sandy loam, dark brown (10YR 3/3) moist; 15 percent clay; weak medium subangular blocky structure; extremely hard, slightly rigid, nonsticky, nonplastic; common very fine and fine roots; common very fine and fine tubular pores; 7 percent gravel; noneffervescent; neutral, pH 7.2 by Hellige-Truog; clear smooth boundary.

- A2—7 to 15 inches (18 to 38 cm); brown (10YR 5/3) fine sandy loam, dark brown (10YR 3/3) moist; 16 percent clay; weak medium subangular blocky structure; hard, very firm, nonsticky, nonplastic; common very fine and fine roots; many very fine and fine and few medium and coarse tubular pores; 2 percent gravel; noneffervescent; slightly alkaline, pH 7.5 by Hellige-Truog; clear smooth boundary.
- Bw1—15 to 32 inches (38 to 81 cm); light yellowish brown (10YR 6/4) sandy loam, dark brown (10YR 3/3) moist; 16 percent clay; weak medium subangular blocky structure; slightly hard, friable, nonsticky, nonplastic; common very fine and fine roots; common very fine and fine and few medium and coarse tubular pores; 2 percent gravel; noneffervescent; slightly alkaline, pH 7.8 by Hellige-Truog; gradual smooth boundary.
- Bw2—32 to 42 inches (81 to 107 cm); light yellowish brown (10YR 6/4) sandy loam, brown (10YR 4/3) moist; 13 percent clay; weak medium subangular blocky structure; slightly hard, friable, nonsticky, nonplastic; common very fine and fine roots; many very fine and fine and common medium and coarse tubular pores; 3 percent gravel; noneffervescent; moderately alkaline, pH 8.0 by Hellige-Truog; gradual smooth boundary.
- Bw3—42 to 53 inches (107 to 135 cm); very pale brown (10YR 7/4) sandy loam, brown (10YR 4/3) moist; 13 percent clay; weak medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; common very fine roots; many very fine and fine and few medium tubular pores; 3 percent gravel; noneffervescent; moderately alkaline, pH 8.0 by Hellige-Truog; gradual smooth boundary.
- Bw4—53 to 63 inches (135 to 160 cm); light yellowish brown (10YR 6/4) sandy loam, brown (10YR 4/3) moist; 12 percent clay; weak medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; few very fine and fine roots; many very fine and fine and few medium tubular pores; common fine and medium irregular dark brown (7.5YR 3/4 moist) oxidized iron masses throughout and few fine irregular black (N 2/0 moist) iron-manganese masses between peds; 2 percent gravel; noneffervescent; moderately alkaline, pH 8.0 by Hellige-Truog; abrupt smooth boundary.
- C—63 to 80 inches (160 to 203 cm); very pale brown (10YR 7/3) extremely gravelly loamy coarse sand, brown (10YR 4/3) moist; 3 percent clay; single grain; loose, nonsticky, nonplastic; common very fine roots; many very fine to medium interstitial and tubular pores; 50 percent gravel and 15 percent cobbles; noneffervescent; moderately alkaline, pH 8.0 by Hellige-Truog.

Type location: Butte County, California; about 0.5 mile northwest of the Durham Mutual Diversion Dam, approximately 1,650 feet south and 1,450 feet east of the northwest corner of sec. 5, T. 21 N., R. 2 E.; 39 degrees, 42 minutes, 26.5 seconds north latitude and 121 degrees, 46 minutes, 51.8 seconds west longitude; NAD83; USGS Quad: Chico, California.

Range in Characteristics

Depth to the substratum is 40 to 80 inches (102 to 203 cm). The mean annual soil temperature is 61 to 62 degrees F (16 to 17 degrees C). The soil moisture control section is dry in all parts from about May to October (about 150 to 180 days). The particle-size control section averages 5 to 17 percent clay and 0 to 25 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur at a depth of 40 to 80 inches (102 to 203 cm) from December through April. Redoximorphic features, such as oxidized iron masses and iron-manganese masses with color of 7.5YR 3/4 and N 2/0 moist, occur in the lower part of the Bw horizon. Rock fragments on the surface range from 0 to 15 percent gravel. In some pedons the C horizon has silica pendants under rock fragments.

The Ap horizon has dry color of 10YR 5/3 or 5/4. Moist color is 10YR 3/2 or 3/3 or 7.5YR 3/2 or 3/3. Texture is fine sandy loam. The content of clay ranges from 8 to 17 percent. The content of gravel is 0 to 15 percent. Reaction ranges from moderately acid to neutral.

The A horizon has dry color of 10YR 5/3 or 5/4. Moist color is 10YR 3/3 or 7.5YR 3/2. Texture is fine sandy loam or sandy loam. The content of clay ranges from 8 to 17 percent. The content of gravel is 0 to 15 percent. Reaction ranges from slightly acid to moderately alkaline.

The Bw horizon has dry color of 10YR 5/3, 6/4, or 7/4 or 7.5YR 5/4 or 6/4. Moist color is 10YR 3/3 or 4/3 or 7.5YR 3/3, 4/2, or 4/3. Texture is fine sandy loam, sandy loam, gravelly sandy loam, or gravelly coarse sandy loam. The content of clay ranges from 8 to 17 percent. The horizon has 0 to 35 percent gravel and 0 to 5 percent cobbles. Reaction ranges from neutral to moderately alkaline.

The C horizon has dry color of 10YR 5/4, 6/3, or 7/3 or 7.5YR 5/4 or 6/3. Moist color is 10YR 3/3 or 4/3 or 7.5YR 4/3. Texture is gravelly sandy loam, very gravelly sandy loam, very gravelly coarse sandy loam, very gravelly coarse sand, extremely gravelly loamy coarse sand, extremely gravelly fine sand, or extremely cobbly sandy loam. The content of clay ranges from 1 to 10 percent. The horizon has 20 to 70 percent gravel, 5 to 35 percent cobbles, and 0 to 15 percent stones. Reaction ranges from neutral to moderately alkaline.

Chawanakee Series

The Chawanakee series consists of shallow, somewhat excessively drained soils that formed in residuum and colluvium derived from intrusive igneous rocks, mainly trondhjemite and quartz diorite. These soils are on ridgetops and side slopes on granitic Sierra Nevada mountains. Slopes range from 2 to 110 percent. The mean annual precipitation is about 72 inches (1,829 mm), and the mean annual air temperature is about 53 degrees F (12 degrees C).

Taxonomic class: Loamy, mixed, active, mesic shallow Typic Dystrocherepts

Typical Pedon

Chawanakee gravelly sandy loam, on an east-southeast-facing slope of 45 percent, under a cover of greenleaf manzanita, tanoak, ponderosa pine, canyon live oak, and sugar pine, at an elevation of 4,080 feet (1,244 m). When described on 7/5/2000, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 3 cm); slightly decomposed plant material; abrupt smooth boundary.

Oe—1 to 2 inches (3 to 5 cm); moderately decomposed plant material; clear smooth boundary.

A—2 to 5 inches (5 to 13 cm); white (2.5Y 8/1) gravelly sandy loam, grayish brown (2.5Y 5/2) moist; 4 percent clay; single grain; loose, nonsticky, nonplastic; many very fine and fine roots; many very fine and fine and common medium interstitial and tubular pores; 20 percent gravel; moderately acid, pH 5.8 by Hellige-Truog; clear smooth boundary.

Bw1—5 to 11 inches (13 to 28 cm); very pale brown (10YR 8/3) gravelly sandy loam, pale brown (10YR 6/3) moist; 5 percent clay; weak fine and medium subangular blocky structure parting to single grain; loose, nonsticky, nonplastic; many very fine to medium roots; many very fine and fine and common medium irregular and tubular pores; 20 percent gravel; strongly acid, pH 5.5 by Hellige-Truog; gradual smooth boundary.

Bw2—11 to 19 inches (28 to 48 cm); very pale brown (10YR 8/2) gravelly sandy loam, pale brown (10YR 6/3) moist; 4 percent clay; weak fine and medium

subangular blocky structure parting to single grain; loose, nonsticky, nonplastic; common very fine to coarse roots; many very fine and fine and common medium irregular and tubular pores; 30 percent gravel; strongly acid, pH 5.5 by Hellige-Truog; abrupt smooth boundary.

Cr—19 inches (48 cm); extremely weakly cemented quartz diorite bedrock; strongly acid, pH 5.5 by Hellige-Truog.

Type location: Butte County, California; about 1.25 miles northeast of Ragdump, approximately 1,800 feet south and 2,100 feet west of the northeast corner of sec. 7, T. 23 N., R. 5 E.; 39 degrees, 51 minutes, 58 seconds north latitude and 121 degrees, 27 minutes, 22 seconds west longitude; NAD83; USGS Quad: Pulga, California.

Range in Characteristics

The depth to paralithic bedrock is 10 to 20 inches (25 to 51 cm). The mean annual soil temperature is 47 to 59 degrees F (8 to 15 degrees C). The soil moisture control section is dry in all parts from about mid-June to mid-October (about 120 days). The particle-size control section averages 2 to 6 percent clay and 10 to 35 percent gravel. Mineralogy is mixed. Rock fragments on the surface range from 0 to 10 percent gravel and 0 to 5 percent boulders.

The A horizon has dry color of 10YR 5/1, 5/2, 6/1, 6/2, 6/3, or 7/1 or 2.5Y 8/1. Moist color is 10YR 3/2, 4/1, 4/2, 4/3, or 5/2 or 2.5Y 8/1. Texture is sandy loam, gravelly sandy loam, gravelly coarse sandy loam, or gravelly loamy coarse sand. The content of clay ranges from 2 to 6 percent. The content of gravel is 10 to 30 percent. Reaction is slightly acid or moderately acid.

The Bw horizon has dry color of 10YR 6/3, 7/2, 7/3, 8/2, or 8/3. Moist color is 10YR 4/2, 4/3, 5/3, or 6/3. Texture is gravelly sandy loam, very gravelly sandy loam, gravelly coarse sandy loam, loamy sand, gravelly loamy sand, gravelly loamy coarse sand, or sandy loam. The content of clay ranges from 2 to 6 percent. The content of gravel is 10 to 35 percent. Reaction ranges from slightly acid to strongly acid.

Cherokeespring Series

The Cherokeespring series consists of very deep, well drained soils that formed in alluvium derived from basalt. These soils are on benches on side slopes on basalt plateaus on Sierra Nevada foothills. Slopes range from 2 to 15 percent. The mean annual precipitation is about 28 inches (711 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Ultic Palexeralfs

Typical Pedon

Cherokeespring gravelly silt loam, on a north-facing slope of 12 percent, under a cover of hardwoods, shrubs, and annual grasses, at an elevation of 645 feet (196 m). When described on 6/28/2001, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 3 inches (0 to 8 cm); brown (7.5YR 4/3) gravelly silt loam, dark brown (7.5YR 3/3) moist; 18 percent clay; moderate fine and medium granular structure; slightly hard, friable, slightly sticky, nonplastic; many fine and medium roots; many fine irregular pores; 15 percent basalt gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

Bt1—3 to 7 inches (8 to 18 cm); brown (7.5YR 4/4) gravelly silt loam, dark brown (7.5YR 3/4) moist; 24 percent clay; moderate medium and coarse subangular blocky structure; hard, firm, moderately sticky, moderately plastic; many fine and medium roots; many fine irregular pores; 40 percent discontinuous prominent clay

- films on faces of peds; 15 percent basalt gravel; slightly acid, pH 6.2 by Hellige-Truog; abrupt smooth boundary.
- Bt2—7 to 16 inches (18 to 41 cm); brown (7.5YR 4/4) gravelly silty clay loam, dark brown (7.5YR 3/4) moist; 28 percent clay; moderate coarse subangular blocky structure; hard, firm, moderately sticky, moderately plastic; common fine and medium roots; common fine and medium tubular pores; 50 percent continuous prominent clay films on faces of peds; 20 percent basalt gravel; moderately acid, pH 6.0 by Hellige-Truog; clear smooth boundary.
- Bt3—16 to 30 inches (41 to 76 cm); reddish brown (5YR 4/4) gravelly silty clay loam, dark reddish brown (5YR 3/4) moist; 32 percent clay; moderate coarse subangular blocky structure; hard, firm, moderately sticky, moderately plastic; common very fine and fine roots; common fine tubular pores; 60 percent continuous prominent clay films on faces of peds; 25 percent basalt gravel; moderately acid, pH 5.8 by Hellige-Truog; clear smooth boundary.
- Bt4—30 to 42 inches (76 to 107 cm); reddish brown (5YR 4/3) gravelly silty clay loam, dark reddish brown (5YR 3/4) moist; 35 percent clay; moderate coarse prismatic structure; very hard, firm, very sticky, moderately plastic; common very fine and fine roots; common fine tubular pores; 65 percent continuous prominent clay films on faces of peds; 30 percent basalt gravel; strongly acid, pH 5.5 by Hellige-Truog; clear smooth boundary.
- Bt5—42 to 60 inches (107 to 152 cm); reddish brown (5YR 4/3) very gravelly silty clay, dark reddish brown (5YR 3/4) moist; 40 percent clay; moderate coarse prismatic structure parting to moderate medium angular blocky; hard, firm, very sticky, very plastic; few very fine, fine, and coarse roots between peds; few fine tubular pores; 90 percent continuous prominent clay films on faces of peds; 35 percent basalt gravel; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.
- Bt6—60 to 68 inches (152 to 173 cm); reddish brown (5YR 4/3) very gravelly silty clay, dark reddish brown (5YR 3/4) moist; 42 percent clay; moderate coarse prismatic structure parting to moderate medium angular blocky; hard, firm, very sticky, very plastic; few very fine roots between peds; few very fine tubular pores; 80 percent continuous prominent clay films on faces of peds; 15 percent basalt cobbles and 30 percent basalt gravel; neutral, pH 7.0 by Hellige-Truog.

Type location: Butte County, California; about 5.9 miles northwest of Oroville, approximately 300 feet east and 500 feet south of the northwest corner of sec. 13, T. 20 N., R. 3 E.; 39 degrees, 35 minutes, 45 seconds north latitude and 121 degrees, 35 minutes, 43 seconds west longitude; NAD83; USGS Quad: Oroville, California.

Range in Characteristics

The depth to bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 61 to 64 degrees F (16 to 18 degrees C). The particle-size control section averages 27 to 35 percent clay, less than 15 percent sand, more than 50 percent silt, and 15 to 30 percent rock fragments, mostly gravel. Mineralogy is mixed. Rock fragments on the surface range from 0 to 10 percent gravel and 0 to 5 percent cobbles.

The A horizon has dry color of 7.5YR 3/4 or 4/3 or 10YR 3/4 or 4/4. Moist color is 7.5YR 2/2, 3/2, 3/3, or 3/4 or 10YR 2/2 or 3/3. Texture is gravelly silt loam or silt loam. The content of clay ranges from 15 to 20 percent. The horizon has 5 to 15 percent gravel and 0 to 5 percent cobbles. Reaction is slightly acid.

The upper part of the Bt horizon has dry color of 5YR 4/4; 7.5YR 3/4, 4/3, or 4/4; or 10YR 3/4. Moist color is 5YR 3/4; 7.5YR 3/2, 3/3, or 3/4; or 10YR 3/2. Texture is gravelly silt loam, silt loam, gravelly silty clay loam, silty clay loam, or cobbly silt loam. The content of clay ranges from 20 to 30 percent. The content of gravel is 10 to 25 percent, and the content of cobbles is 0 to 30 percent. Reaction ranges from moderately acid to neutral.

The middle part of the Bt horizon has dry color of 5YR 4/4, 7.5YR 3/4 or 4/4, or 10YR 3/4. Moist color is 5YR 3/3, 7.5YR 3/3 or 3/4, or 10YR 3/3. Texture is gravelly silty clay loam, very gravelly silty clay loam, very cobbly silt clay loam, or silty clay loam. The content of clay ranges from 28 to 35 percent. The content of gravel is 10 to 30 percent, and the content of cobbles is 0 to 30 percent. Reaction ranges from slightly acid to strongly acid.

The lower part of the Bt horizon has dry color of 5YR 4/3 or 4/4 or 7.5YR 4/4. Moist color is 5YR 3/4 or 7.5YR 3/4. Texture is very gravelly silty clay, very gravelly silty clay loam, very cobbly silty clay loam, or cobbly silty clay loam. The content of clay ranges from 35 to 42 percent. The content of gravel is 10 to 40 percent, and the content of cobbles is 0 to 40 percent. Reaction ranges from strongly acid to neutral.

Cherotable Series

The Cherotable series consists of deep, moderately well drained soils that formed in alluvium and residuum weathered from basalt. These soils are on the top of basalt plateaus on volcanic Sierra Nevada foothills. Slopes range from 2 to 15 percent. The mean annual precipitation is about 35 inches (889 mm), and the mean annual air temperature is about 59 degrees F (15 degrees C).

Taxonomic class: Fine-loamy, parasesquic, thermic Ultic Haploxeralfs

Typical Pedon

Cherotable loam, on a south-facing slope of 5 percent, under a cover of annual grasses, at an elevation of 1,350 feet (411 m). When described on 10/19/2000, the soil was moist from 0 to 21 inches (0 to 53 cm). (Colors are for dry soil unless otherwise noted.)

- A—0 to 2 inches (0 to 5 cm); brown (7.5YR 5/3) loam, brown (7.5YR 4/3) moist; 21 percent clay; weak fine subangular blocky structure; slightly hard, friable, slightly sticky, nonplastic; many fine and medium roots; many fine and medium irregular pores; 5 percent basalt gravel; very strongly acid, pH 4.8 by pH meter 1:1 water; clear smooth boundary.
- Bt1—2 to 8 inches (5 to 20 cm); brown (7.5YR 5/3) loam, brown (7.5YR 4/3) moist; 26 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many fine and medium roots; many fine and medium irregular pores; 15 percent discontinuous faint clay films on surfaces along pores; 10 percent basalt gravel; strongly acid, pH 5.5 by pH meter 1:1 water; clear smooth boundary.
- Bt2—8 to 14 inches (20 to 36 cm); brown (7.5YR 5/3) clay loam, brown (7.5YR 4/3) moist; 30 percent clay; moderate coarse subangular blocky structure parting to moderate medium subangular blocky; slightly hard, friable, moderately sticky, slightly plastic; common fine and few very fine roots; common fine tubular and common medium irregular pores; 20 percent discontinuous distinct clay films on surfaces along pores; 10 percent basalt gravel; strongly acid, pH 5.4 by pH meter 1:1 water; gradual smooth boundary.
- Bt3—14 to 21 inches (36 to 53 cm); brown (7.5YR 5/3) gravelly clay loam, brown (7.5YR 4/3) moist; 30 percent clay; moderate medium subangular blocky structure parting to moderate coarse subangular blocky; slightly hard, friable, moderately sticky, moderately plastic; few fine and common medium roots; common fine tubular pores; 40 percent discontinuous distinct clay films on faces of peds; 5 percent basalt cobbles and 10 percent basalt gravel; strongly acid, pH 5.5 by pH meter 1:1 water; gradual smooth boundary.
- Bt4—21 to 30 inches (53 to 76 cm); brown (7.5YR 5/3) cobbly clay loam, brown (7.5YR 4/3) moist; 31 percent clay; moderate coarse subangular blocky structure

parting to moderate medium subangular blocky; hard, friable, moderately sticky, moderately plastic; few fine roots; few fine tubular pores; 40 percent discontinuous distinct clay films on faces of peds; 10 percent basalt gravel and 10 percent basalt cobbles; strongly acid, pH 5.5 by pH meter 1:1 water; gradual wavy boundary.

Bt5—30 to 45 inches (76 to 114 cm); brown (7.5YR 5/3) very cobbly clay, brown (7.5YR 4/3) moist; 48 percent clay; moderate medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; few fine tubular pores; 45 percent discontinuous distinct clay films on faces of peds; 20 percent basalt gravel and 30 percent basalt cobbles; moderately acid, pH 5.7 by pH meter 1:1 water; abrupt wavy boundary.

R—45 inches (114 cm); indurated basalt bedrock.

Type location: Butte County, California; about 5 miles north of Oroville, approximately 660 feet west and 140 feet north of the southeast corner of sec. 8, T. 20 N., R. 4 E.; 39 degrees, 35 minutes, 54.7 seconds north latitude and 121 degrees, 32 minutes, 29.4 seconds west longitude; NAD83; USGS Quad: Oroville, California.

Range in Characteristics

The depth to lithic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 61 to 64 degrees F (16 to 18 degrees C). The soil moisture control section is dry in all parts from about May to the end of October (about 150 to 200 days). The particle-size control section averages 27 to 35 percent clay and 10 to 25 percent rock fragments, mostly gravel. Mineralogy is parasesquic. The content of organic matter is 2 to 11 percent to a depth of 2 inches (5 cm) and 1 to 3 percent from a depth of 2 to 45 inches (5 to 114 cm). By ammonium acetate, base saturation ranges from 59 to 73 percent to a depth of 8 inches (20 cm) and is more than 50 percent from a depth of 8 to 45 inches (20 to 114 cm). By sum of cations, base saturation is 38 to 47 percent to a depth of 8 inches (20 cm) and 34 to 36 percent from a depth of 8 to 45 inches (114 cm). A fluctuating water table can occur between the top of the bedrock and 20 inches (51 cm) below the surface of the soil from December through April. Rock fragments on the surface range from 0 to 15 percent gravel. Some pedons have a BCt horizon.

The A horizon has dry color of 7.5YR 3/3 or 4/4 or 10YR 3/4, 4/3, 5/2, or 5/3. Moist color is 7.5YR 2/2, 3/2, 3/3, 4/2, or 4/3 or 10YR 2/2 or 3/2. Texture is loam or gravelly loam. The content of clay ranges from 18 to 24 percent. The horizon has 0 to 20 percent gravel and 0 to 10 percent cobbles. Reaction ranges from very strongly acid to slightly acid.

The Bt1, Bt2, Bt3, and Bt4 horizons have dry color of 5YR 3/4 or 4/4; 7.5YR 3/4, 4/3, 4/4, 5/3, or 5/4; or 10YR 3/4 or 4/4. Moist color is 5YR 3/2, 3/3, or 3/4; 7.5YR 3/2, 3/3, or 4/3; or 10YR 3/2 or 3/3. Texture is loam, gravelly loam, cobbly loam, clay loam, gravelly clay loam, or cobbly clay loam. The content of clay ranges from 18 to 35 percent. The content of gravel is 0 to 20 percent, and the content of cobbles is 0 to 30 percent. Reaction ranges from strongly acid to slightly acid.

The Bt5 horizon has dry color of 5YR 4/3, 4/4, or 5/4; 7.5YR 3/4, 4/3, 4/4, 5/3, or 5/4; or 10YR 3/4, 4/4, 5/4, or 3/6. Moist color is 5YR 3/3, 3/4, or 4/4; 7.5YR 3/3, 3/4, or 4/3; or 10YR 3/3, 3/4, 4/4, or 5/4. Texture is clay loam, gravelly clay loam, cobbly clay loam, very gravelly clay loam, very cobbly clay loam, cobbly clay, or very cobbly clay. The content of clay ranges from 35 to 50 percent. The content of gravel is 10 to 30 percent, and the content of cobbles is 5 to 40 percent. Reaction is strongly acid or moderately acid.

Chico Series

The Chico series consists of very deep, well drained soils that formed in alluvium derived from mixed rock sources. These soils are on low fan terraces. Slopes range from 0 to 2 percent. The mean annual precipitation is about 23 inches (584 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Pachic Argixerolls

Typical Pedon

Chico loam, on a slope of less than 1 percent, under a cover of wheat stubble, at an elevation of 186 feet (57 m). When described on 6/22/1994, the soil was moist below a depth of 5 inches (13 cm). (Colors are for dry soil unless otherwise noted.)

- Ap—0 to 5 inches (0 to 13 cm); brown (10YR 5/3) loam, very dark grayish brown (10YR 3/2) moist; 23 percent clay; moderate medium and coarse subangular blocky structure parting to moderate very fine and fine granular; slightly hard, friable, slightly sticky, slightly plastic; many very fine and common fine roots; few very fine to medium tubular and common fine and medium irregular pores; slightly alkaline, pH 7.5 by Hellige-Truog; clear smooth boundary.
- Bt1—5 to 10 inches (13 to 25 cm); brown (10YR 4/3) clay loam, dark brown (7.5YR 3/2) moist; 29 percent clay; moderate medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine and fine roots; few very fine to medium tubular and few fine and medium irregular pores; few discontinuous distinct clay films on faces of peds and in pores; slightly alkaline, pH 7.5 by Hellige-Truog; gradual smooth boundary.
- Bt2—10 to 21 inches (25 to 53 cm); brown (10YR 4/3) clay loam, dark brown (7.5YR 3/2) moist; 29 percent clay; moderate medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine and few fine roots; many very fine to medium tubular pores; common discontinuous distinct clay films on faces of peds and in pores; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.
- Bt3—21 to 32 inches (53 to 81 cm); brown (10YR 4/3) clay loam, dark brown (7.5YR 3/2) moist; 29 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine roots; common very fine and fine tubular pores; common discontinuous distinct clay films on faces of peds and in pores; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.
- Bt4—32 to 50 inches (81 to 127 cm); brown (10YR 4/3) loam, dark brown (7.5YR 3/2) moist; 27 percent clay; moderate fine to coarse subangular blocky structure; slightly hard, firm, moderately sticky, moderately plastic; common very fine roots; many very fine to medium tubular pores; common discontinuous distinct clay films on faces of peds and in pores; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.
- Bt5—50 to 70 inches (127 to 178 cm); brown (7.5YR 5/3) loam, brown (7.5YR 4/3) moist; 25 percent clay; moderate fine to coarse subangular blocky structure; slightly hard, firm, moderately sticky, moderately plastic; common very fine roots; many very fine to medium tubular pores; common discontinuous distinct clay films on faces of peds and in pores; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.
- Bt6—70 to 80 inches (178 to 203 cm); brown (7.5YR 5/4) loam, brown (7.5YR 5/4) moist; 21 percent clay; weak fine and medium subangular blocky structure; slightly hard, firm, slightly sticky, slightly plastic; common very fine roots; common very fine to medium tubular pores; common fine irregularly shaped reddish brown (5YR 4/4 moist) oxidized iron masses and few fine black (N 2/0 moist) soft iron-

manganese masses throughout; common discontinuous distinct clay films on faces of peds and in pores; neutral, pH 7.0 by Hellige-Truog.

Type location: Butte County, California; about 1 mile south of Chico, approximately 1,500 feet north and 250 feet west of the southeast corner of sec. 2, T. 21 N., R. 1 E.; 39 degrees, 42 minutes, 2 seconds north latitude and 121 degrees, 49 minutes, 27 seconds west longitude; NAD27; USGS Quad: Chico, California.

Range in Characteristics

The thickness of the solum is more than 80 inches (203 cm). Depth to the argillic horizon is 4 to 24 inches (10 to 61 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry from May to October (140 to 160 days). The particle-size control section averages 25 to 35 percent clay. Mineralogy is mixed. The content of organic matter is 1 to 5 percent from 0 to 21 inches (0 to 53 cm) and is less than 1 percent from 21 to 80 inches (53 to 203 cm). By ammonium acetate, base saturation ranges from 95 to 100 percent throughout the profile. Some pedons have carbonates below a depth of 35 inches (89 cm).

The Ap horizon has dry color of 10YR 4/2, 4/3, 5/2, or 5/3 or 7.5YR 4/2, 4/3, 5/2, or 5/3. Moist color is 10YR 3/2 or 3/3 or 7.5YR 3/2. The content of clay ranges from 20 to 27 percent. Reaction ranges from slightly acid to slightly alkaline.

The upper part of the Bt horizon has dry color of 10YR 4/3, 5/3, or 5/4 or 7.5YR 4/3, 5/2, 5/3, or 5/4. Moist color is 10YR 3/2, 3/3, or 4/3 or 7.5YR 3/2, 3/3, or 3/4. Texture is loam, clay loam, or silty clay loam. The content of clay ranges from 25 to 35 percent. Reaction ranges from slightly acid to slightly alkaline.

The lower part of the Bt horizon has dry color of 10YR 4/3, 5/3, or 5/4 or 7.5YR 4/2, 4/3, 5/3, 4/4, or 5/4. Moist color is 10YR 4/3 or 5/4 or 7.5YR 3/2, 3/3, 3/4, 4/3, or 4/4. Texture is loam or clay loam. The content of clay ranges from 18 to 35 percent. Oxidized iron masses and iron-manganese masses occur below a depth of 70 inches (178 cm). Reaction is neutral or slightly alkaline.

Chinacamp Series

The Chinacamp series consists of very deep, well drained soils that formed in colluvium derived from volcanic mudflow breccia. These soils are on side slopes in canyons on Cascade foothills. Slopes range from 3 to 70 percent. The mean annual precipitation is about 38 inches (965 mm), and the mean annual air temperature is about 59 degrees F (15 degrees C).

Taxonomic class: Loamy-skeletal, mixed, superactive, thermic Haplic Palexeralfs

Typical Pedon

Chinacamp gravelly loam, on an east-southeast-facing slope of 55 percent, under a cover of canyon live oak, California laurel, deerbrush, and Pacific poison oak, at an elevation of 490 feet (149 m). When described on 6/30/1999, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 3 cm); slightly decomposed plant material; abrupt smooth boundary.

A—1 to 5 inches (3 to 13 cm); pale brown (10YR 6/3) gravelly loam, dark grayish brown (10YR 4/2) moist; 26 percent clay; moderate fine and medium subangular blocky structure parting to strong fine granular; slightly hard, friable, slightly sticky, slightly plastic; many very fine and fine roots; many very fine to coarse tubular pores; 5 percent cobbles and 25 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.

- Bt1—5 to 15 inches (13 to 38 cm); pale brown (10YR 6/3) gravelly clay loam, dark grayish brown (10YR 4/2) moist; 30 percent clay; moderate fine and medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; common very fine to medium roots; many very fine to medium tubular pores; 70 percent continuous faint clay films; 5 percent stones, 5 percent cobbles, and 20 percent gravel; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.
- Bt2—15 to 29 inches (38 to 74 cm); pale brown (10YR 6/3) gravelly clay loam, dark grayish brown (10YR 4/2) moist; 34 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine to medium tubular pores; 80 percent continuous distinct clay films; 5 percent boulders, 5 percent stones, 5 percent cobbles, and 20 percent gravel; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.
- Bt3—29 to 38 inches (74 to 97 cm); brown (10YR 5/3) gravelly clay loam, dark grayish brown (10YR 4/2) moist; 37 percent clay; strong fine and medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; common very fine and fine and few medium roots; many very fine to medium tubular pores; 80 percent continuous distinct clay films; 5 percent stones, 5 percent cobbles, 10 percent boulders, and 15 percent gravel; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.
- Bt4—38 to 44 inches (97 to 112 cm); brown (10YR 5/3) gravelly clay loam, dark grayish brown (10YR 4/2) moist; 36 percent clay; strong fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; few very fine to medium roots; many very fine to medium tubular pores; 80 percent continuous distinct clay films; 5 percent boulders, 5 percent stones, 5 percent cobbles, and 10 percent gravel; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.
- Bt5—44 to 61 inches (112 to 155 cm); pale brown (10YR 6/3) extremely stony clay loam, brown (10YR 4/3) moist; 37 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; few very fine to medium roots; many very fine to medium tubular pores; 80 percent continuous distinct clay films; 10 percent cobbles, 10 percent gravel, and 50 percent stones; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.
- Bt6—61 to 72 inches (155 to 183 cm); light yellowish brown (10YR 6/4) very stony clay loam, brown (10YR 4/3) moist; 35 percent clay; moderate fine and medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; few very fine and fine roots; many very fine to medium tubular pores; 80 percent continuous distinct clay films; 5 percent gravel, 10 percent cobbles, and 30 percent stones; neutral, pH 7.0 by Hellige-Truog.

Type location: Butte County, California; about 2.7 miles south-southwest of Centerville, approximately 450 feet east and 1,800 feet south of the northwest corner of sec. 20, T. 22 N., R. 3 E.; 39 degrees, 45 minutes, 4 seconds north latitude and 121 degrees, 40 minutes, 20 seconds west longitude; NAD83; USGS Quad: Paradise West, California.

Range in Characteristics

The depth to bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 59 to 65 degrees F (15 to 18 degrees C). The particle-size control section averages 27 to 35 percent clay and 35 to 60 percent rock fragments, mostly gravel. Mineralogy is mixed. Rock fragments on the surface range from 0 to 10 percent gravel, 0 to 20 percent cobbles, 0 to 30 percent stones, and 0 to 15 percent boulders.

The A horizon has dry color of 10YR 6/3 or 7/3 or 7.5YR 6/4 or 7/2. Moist color is 10YR 4/2 or 7.5YR 4/3. Texture is gravelly loam, extremely cobbly loam, very gravelly

sandy clay loam, or very cobbly sandy clay loam. The content of clay ranges from 20 to 26 percent. The horizon has 5 to 30 percent gravel, 0 to 20 percent cobbles, 0 to 10 percent stones, and 0 to 5 percent boulders. Reaction is neutral or slightly acid.

The Bt horizon has dry color of 10YR 5/3, 5/4, 6/3, 6/4, 7/2, 7/3, or 7/4 or 7.5YR 6/6 or 7/4. Moist color is 10YR 4/2, 4/3, or 4/4 or 7.5YR 4/4 or 5/4. Texture is gravelly clay loam, very gravelly clay loam, extremely cobbly clay loam, very stony clay loam, extremely stony clay loam, extremely gravelly sandy clay loam, gravelly clay, or cobbly clay. The content of clay ranges from 27 to 42 percent. The horizon has 5 to 45 percent gravel, 5 to 45 percent cobbles, 0 to 30 percent stones, and 0 to 10 percent boulders. Reaction ranges from neutral to moderately acid.

Clear Lake Series

The Clear Lake series consists of very deep, poorly drained soils that formed in alluvium derived from mixed rock sources. These soils are in basins. Slopes are 0 to 1 percent. The mean annual precipitation is about 18 inches (457 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Fine, smectitic, thermic Xeric Endoaquerts

Typical Pedon

Clear Lake silty clay loam, on a slope of 0 percent, under a cover of dock, cocklebur, tules, arnica ssp., and bermudagrass, at an elevation of 55 feet (17 m). When described on 9/16/1993, the soil was moist throughout. Free water was moving laterally at a depth of 31 inches (79 cm). (Colors are for dry soil unless otherwise noted.)

- A—0 to 6 inches (0 to 15 cm); gray (10YR 5/1) and grayish brown (10YR 5/2) silty clay loam, very dark grayish brown (10YR 3/2) moist; 38 percent clay; moderate thin platy structure; slightly hard, firm, slightly sticky, moderately plastic; many very fine and common fine roots; few very fine tubular pores; noneffervescent; neutral, pH 7.0 by Hellige-Truog; abrupt smooth boundary.
- Akb—6 to 12 inches (15 to 31 cm); gray (10YR 5/1) silty clay, very dark gray (10YR 3/1) moist; 50 percent clay; moderate very fine subangular blocky structure; very hard, very firm, very sticky, very plastic; common very fine roots; few very fine tubular pores; common carbonate masses; common fine prominent strong brown (7.5YR 4/6) oxidized iron masses; strongly effervescent; moderately alkaline, pH 8.0 by Hellige-Truog; abrupt smooth boundary.
- Bkssb1—12 to 35 inches (31 to 89 cm); gray (10YR 5/1) silty clay, dark gray (10YR 4/1) moist; 50 percent clay; moderate medium prismatic structure; extremely hard, extremely firm, very sticky, very plastic; common very fine roots; few very fine tubular pores; slickensides; common carbonate masses; common fine prominent strong brown (7.5YR 4/6) oxidized iron masses and few fine prominent black (N 2/0) manganese masses; violently effervescent; moderately alkaline, pH 8.2 by Hellige-Truog; clear smooth boundary.
- Bkssb2—35 to 50 inches (89 to 127 cm); light brownish gray (10YR 6/2) silty clay, dark gray (10YR 4/1) moist; 45 percent clay; moderate medium prismatic structure; extremely hard, extremely firm, very sticky, very plastic; few very fine roots; few very fine tubular pores; slickensides; common carbonate masses and common fine prominent black (N 2/0) manganese masses; violently effervescent; moderately alkaline, pH 8.2 by Hellige-Truog; clear smooth boundary.
- Bkgb1—50 to 60 inches (127 to 152 cm); light gray (10YR 7/1) silty clay, dark gray (10YR 4/1) moist; 42 percent clay; weak medium prismatic structure; very hard, extremely firm, very sticky, very plastic; few very fine roots; few very fine tubular

pores; strongly effervescent throughout; strongly alkaline, pH 8.5 by Hellige-Truog; gradual smooth boundary.

Bk_{gb}2—60 to 70 inches (152 to 178 cm); light gray (10YR 7/2) silty clay, dark gray (5Y 4/1) moist; 45 percent clay; moderate fine angular blocky structure; very hard, extremely firm, moderately sticky, very plastic; few very fine roots; few very fine tubular pores; strongly effervescent throughout; strongly alkaline, pH 8.5 by Hellige-Truog; gradual smooth boundary.

Bk_{gb}3—70 to 72 inches (178 to 183 cm); light olive brown (2.5Y 5/3) silty clay, olive gray (5Y 5/2) and gray (5Y 5/1) moist; 50 percent clay; moderate fine angular blocky structure; very hard, extremely firm, moderately sticky, very plastic; few very fine roots; few very fine tubular pores; strongly effervescent throughout; strongly alkaline, pH 8.5 by Hellige-Truog.

Type location: Butte County, California; about 16.7 miles northwest of Pennington, approximately 200 feet east and 2,300 feet south of the northwest corner of sec. 8, T. 17 N., R. 1 E.; 39 degrees, 20 minutes, 28 seconds north latitude and 121 degrees, 53 minutes, 26 seconds west longitude; NAD27; USGS Quad: Sanborn Slough, California.

Range in Characteristics

The depth of the soils is more than 72 inches (183 cm). The mean annual soil temperature is 62 to 66 degrees F (17 to 19 degrees C). The soil moisture control section is dry from July to October (120 to 125 days). The particle-size control section averages 45 to 55 percent clay. The soils are calcareous from a depth of 6 to 72 inches (15 to 183 cm). Surface-initiated cracks 0.4 inch (1 cm) or more wide extend to a depth of 25 inches (64 cm) or more. They are open from June to October (150 to 180 days) in nonirrigated areas and are closed the rest of the year. Slickensides occur at a depth of 12 to 80 inches (31 to 203 cm). Redoximorphic features occur mainly as oxidized iron masses and manganese masses from 0 to 50 inches (0 to 127 cm) and a reduced matrix below a depth of 50 inches (127 cm). A fluctuating water table can occur between the surface and 80 inches (203 cm) below the surface from December through May and is 40 to 80 inches (102 to 203 cm) below the surface from June through November. Overwash of silty clay loam ranges from 0.5 inch to 20 inches (1 to 51 cm) in thickness. Some pedons do not have an Ak horizon.

The A horizon has dry color of 10YR 3/1, 4/1, 5/1, or 5/2 or 5Y 3/1. Moist color is 10YR 2/1, 2/2, 3/1, 3/2, 4/2; 5Y 3/1 or 2/1; or N 3/0. Texture is silty clay loam. The content of clay ranges from 35 to 40 percent. Reaction ranges from neutral to moderately alkaline.

The Ak_b horizon has dry color of 10YR 4/1 or 5/1 or 5Y 3/1. Moist color is 10YR 2/1, 3/1, or 4/2. Texture is silty clay or clay. The content of clay ranges from 40 to 60 percent. Reaction is slightly alkaline or moderately alkaline.

The Bk_{ssb} and Bg_b horizons have dry color of 10YR 3/1, 4/1, 5/1, or 7/1 or 5Y 5/1. Moist color is 10YR 2/1, 2/2, 3/1, 3/2, or 4/1 or 2.5Y 3/1, 3/2, or 4/2. Texture is clay or silty clay. The content of clay ranges from 40 to 60 percent. Reaction is moderately alkaline or strongly alkaline.

The Bk_{gb} horizon has dry color of 10YR 7/1 or 7/2 or 5Y 5/1 or 5/3. Moist color is 10YR 4/1 or 4/2; 5Y 4/1, 5/1, or 5/2; N 3/0; or 5GY 3/1. Texture is clay, silty clay, silty clay loam, or clay loam. The content of clay ranges from 35 to 60 percent. Reaction is moderately alkaline or strongly alkaline.

Clearhayes Series

The Clearhayes series consists of deep, somewhat poorly drained soils that formed in overbank alluvium over channel alluvium derived from volcanic rocks.

These soils are on bars on low strath terraces on Cascade foothills. Slopes range from 0 to 2 percent. The mean annual precipitation is about 26 inches (660 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Typic Haploxeralfs

Typical Pedon

Clearhayes sandy clay loam, on a south-facing slope of 0.5 percent, under a cover of filaree, medusahead, Mediterranean barley, and clover, at an elevation of 198 feet (60 m). When described on 4/5/2000, the soil was dry to a depth of 19 inches (48 cm), very slightly moist between 19 and 28 inches (48 and 71 cm), slightly moist between 28 and 38 inches (71 and 97 cm), and moist below 38 inches (97 cm). (Colors are for dry soil unless otherwise noted.)

- A—0 to 2 inches (0 to 5 cm); pale brown (10YR 6/3) sandy clay loam, dark grayish brown (10YR 4/2) moist; 25 percent clay; moderate medium and thick platy structure; extremely hard, friable, slightly sticky, slightly plastic; few fine and common very fine roots; common very fine and fine tubular pores; 5 percent gravel; neutral, pH 6.7 by Hellige-Truog; clear smooth boundary.
- Bt1—2 to 10 inches (5 to 25 cm); grayish brown (10YR 5/2) gravelly sandy clay loam, dark grayish brown (10YR 4/2) moist; 34 percent clay; moderate fine and medium subangular blocky structure; very hard, friable, moderately sticky, moderately plastic; few fine and common very fine roots; common very fine to medium tubular pores; 80 percent continuous distinct clay films; 18 percent gravel; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.
- Bt2—10 to 19 inches (25 to 48 cm); grayish brown (10YR 5/2) gravelly sandy clay loam, dark grayish brown (10YR 4/2) moist; 30 percent clay; moderate fine and medium subangular blocky structure; very hard, very friable, moderately sticky, moderately plastic; common very fine roots; many very fine to medium tubular pores; 80 percent continuous distinct clay films; 5 percent cobbles and 15 percent gravel; slightly alkaline, pH 7.4 by Hellige-Truog; clear smooth boundary.
- C1—19 to 28 inches (48 to 71 cm); grayish brown (10YR 5/2) extremely gravelly sandy loam, dark gray (10YR 4/1) moist; 17 percent clay; single grain; slightly hard, very friable, slightly sticky, nonplastic; common very fine roots; many very fine and fine irregular and tubular pores; 25 percent cobbles and 40 percent gravel; moderately alkaline, pH 8.0 by Hellige-Truog; gradual smooth boundary.
- C2—28 to 38 inches (71 to 97 cm); light brownish gray (10YR 6/2) extremely gravelly loamy coarse sand, dark gray (10YR 4/1) moist; 2 percent clay; single grain; loose, nonsticky, nonplastic; few very fine roots; many very fine to medium interstitial pores; 35 percent cobbles and 40 percent gravel; strongly alkaline, pH 8.5 by Hellige-Truog; clear smooth boundary.
- C3—38 to 46 inches (97 to 117 cm); very pale brown (10YR 7/4) extremely gravelly sandy clay loam, brown (10YR 5/3) moist; 26 percent clay; single grain; hard, very friable, slightly sticky, slightly plastic; many very fine to medium interstitial pores; 3 percent stones, 35 percent cobbles, and 40 percent gravel; strongly alkaline, pH 8.5 by Hellige-Truog; abrupt smooth boundary.
- 2Cr—46 inches (117 cm); very weakly cemented volcanic sandstone bedrock; strongly alkaline, pH 8.5.

Type location: Butte County, California; about 0.8 mile east of the Durham-Pentz Road/Highway 99 overpass, approximately 1,200 feet north and 2,400 feet west of the southeast corner of sec. 25, T. 21 N., R. 2 E.; 39 degrees, 38 minutes, 34 seconds north latitude and 121 degrees, 42 minutes, 5 seconds west longitude; NAD83; USGS Quad: Hamlin Canyon, California.

Range in Characteristics

The depth to paralithic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 62 to 68 degrees F (17 to 20 degrees C). The particle-size control section averages 27 to 35 percent clay and 5 to 35 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur between the top of the bedrock and 13 inches (33 cm) below the surface from December through April. Rock fragments on the surface range from 0 to 30 percent gravel, 0 to 5 percent cobbles, and 0 to 2 percent stones. Some pedons do not have a C horizon.

The A horizon has dry color of 10YR 6/2, 6/3, or 6/4 or 7.5YR 5/3, 6/2, or 6/3. Moist color is 10YR 4/2, 4/3, or 5/2 or 7.5YR 4/2. Texture is sandy clay loam, loam, clay loam, gravelly sandy loam, or gravelly loam. The content of clay ranges from 18 to 30 percent. The horizon has 2 to 25 percent gravel and 0 to 5 percent cobbles. Reaction ranges from slightly acid to slightly alkaline.

The Bt horizon has dry color of 10YR 5/2, 6/2, or 6/3 or 7.5YR 6/2, 6/3, or 5/3. Moist color is 10YR 4/1, 4/2, 5/2, or 5/3 or 7.5YR 4/2 or 4/3. Texture is sandy clay loam, clay loam, gravelly loam, gravelly clay loam, gravelly sandy clay loam, or very gravelly sandy clay loam. The content of clay ranges from 17 to 35 percent. The horizon has 5 to 35 percent gravel and 0 to 15 percent cobbles. Reaction ranges from neutral to strongly alkaline.

The C horizon has dry color of 10YR 6/2, 7/3, or 7/4 or 7.5YR 6/4. Moist color is 10YR 4/1 or 5/3 or 7.5YR 5/3. Texture is very gravelly coarse sandy loam, extremely gravelly sandy clay loam, extremely gravelly sandy loam, extremely gravelly loamy coarse sand, or very cobbly sandy clay loam. The content of clay ranges from 2 to 30 percent. The horizon has 20 to 60 percent gravel, 5 to 35 percent cobbles, and 0 to 15 percent stones. Reaction ranges from slightly alkaline to strongly alkaline.

Coalcanyon Series

The Coalcanyon series consists of very deep, well drained soils that formed in colluvium derived from basalt. These soils are on side slopes on basalt plateaus on volcanic Sierra Nevada foothills. Slopes range from 5 to 50 percent. The mean annual precipitation is about 30 inches (762 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Loamy-skeletal, parasquic, thermic Pachic Ultic Argixerolls

Typical Pedon

Coalcanyon very cobbly loam, on a west-facing slope of 45 percent, under a cover of hardwoods, shrubs, and annual grasses, at an elevation of 950 feet (290 m). When described on 6/26/2001, the soil was dry to a depth of 27 inches (69 cm) and moist below that depth. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); brown (7.5YR 4/3) very cobbly loam, dark brown (7.5YR 3/2) moist; 16 percent clay; moderate fine granular structure; slightly hard, friable, slightly sticky, nonplastic; many very fine and fine roots; many fine irregular pores; 10 percent basalt gravel and 30 percent basalt cobbles; slightly acid, pH 6.5 by Hellige-Truog; clear wavy boundary.

BAt—2 to 11 inches (5 to 28 cm); brown (7.5YR 4/3) very cobbly loam, dark brown (7.5YR 3/2) moist; 18 percent clay; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky, nonplastic; many fine and medium roots throughout and common coarse roots between peds; many fine irregular pores; 5 percent discontinuous faint clay films on surfaces along pores; 15 percent basalt gravel and 40 percent basalt cobbles; slightly acid, pH 6.5 by Hellige-Truog; clear wavy boundary.

- Bt1—11 to 27 inches (28 to 69 cm); brown (7.5YR 4/3) very cobbly loam, dark brown (7.5YR 3/2) moist; 22 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common fine and medium roots throughout and common coarse roots between peds; common fine and medium tubular pores; 20 percent discontinuous faint clay films on surfaces along pores; 20 percent basalt gravel and 30 percent basalt cobbles; slightly acid, pH 6.5 by Hellige-Truog; clear wavy boundary.
- Bt2—27 to 43 inches (69 to 109 cm); brown (7.5YR 4/3) very cobbly loam, dark brown (7.5YR 3/3) moist; 26 percent clay; moderate medium subangular blocky structure; slightly hard, firm, moderately sticky, slightly plastic; common very fine, fine, and coarse roots between peds; common fine and medium tubular pores; 35 percent discontinuous distinct clay films on surfaces along pores; 25 percent basalt gravel and 35 percent basalt cobbles; moderately acid, pH 6.0 by Hellige-Truog; clear wavy boundary.
- Bt3—43 to 65 inches (109 to 165 cm); reddish brown (5YR 4/3) extremely cobbly clay loam, dark reddish brown (5YR 3/3) moist; 29 percent clay; moderate medium subangular blocky structure; slightly hard, firm, moderately sticky, moderately plastic; common very fine and fine roots between peds; common fine tubular pores; 50 percent discontinuous distinct clay films on surfaces along pores; 20 percent basalt gravel and 50 percent basalt cobbles; moderately acid, pH 6.0 by Hellige-Truog.

Type location: Butte County, California; about 5.7 miles northwest of Oroville, approximately 1,500 feet east and 1,300 feet south of the northwest corner of sec. 13, T. 20 N., R. 3 E.; 39 degrees, 35 minutes, 35 seconds north latitude and 121 degrees, 35 minutes, 23 seconds west longitude; NAD27; USGS Quad: Oroville, California.

Range in Characteristics

The depth of to bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 61 to 64 degrees F (16 to 18 degrees C). The particle-size control section averages 18 to 27 percent clay and 35 to 60 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. The content of organic matter is 1 to 13 percent to a depth of 43 inches (3 to 109 cm) and is less than 1 percent below that depth. By ammonium acetate, base saturation ranges from 78 to 91 percent throughout the profile. By sum of cations, it ranges from 55 to 58 percent. Rock fragments on the surface range from 10 to 60 percent gravel, 5 to 65 percent cobbles, 0 to 25 percent stones, and 0 to 20 percent boulders. Some pedons have silty textures throughout.

The A horizon has dry color of 10YR 3/3, 3/4, 4/2, 4/3, or 4/4 or 7.5YR 4/3. Moist color is 10YR 2/2, 3/2, or 3/3 or 7.5YR 3/2. Texture is very cobbly loam, very gravelly loam, or gravelly loam. The content of clay ranges from 14 to 18 percent. The horizon has 10 to 55 percent gravel, 5 to 35 percent cobbles, 0 to 45 percent stones, and 0 to 15 percent boulders. Reaction is slightly acid or neutral.

The BA_t horizon has dry color of 10YR 4/2 or 4/3 or 7.5YR 4/3 or 4/4. Moist color is 10YR 2/2, 3/2, or 3/3 or 7.5YR 3/2 or 3/3. Texture is very cobbly loam or very gravelly loam. The content of clay ranges from 16 to 22 percent. The horizon has 15 to 50 percent gravel, 5 to 40 percent cobbles, 0 to 55 percent stones, and 0 to 15 percent boulders. Reaction is slightly acid or neutral.

The B_t horizon has dry color of 10YR 4/3, 4/4, 4/6, 5/3, or 5/4; 7.5YR 4/3; or 5YR 4/3. Moist color is 10YR 3/2, 3/3, 3/4, or 4/4 or 7.5YR 3/2 or 3/3. Texture is very cobbly loam, extremely cobbly loam, very cobbly clay loam, extremely cobbly clay loam, extremely gravelly loam, or extremely gravelly clay loam. The content of clay ranges from 22 to 35 percent. The horizon has 20 to 80 percent gravel, 5 to 50 percent cobbles, 0 to 60 percent stones, and 0 to 15 percent boulders. Reaction ranges from moderately acid to neutral.

Coalcanyon Taxadjunct

The Coalcanyon taxadjunct consists of very deep, well drained soils that formed in colluvium derived from basalt. These soils are on side slopes and benches in canyons on Cascade foothills. Slopes range from 3 to 70 percent. The mean annual precipitation is about 37 inches (940 mm), and the mean annual air temperature is about 59 degrees F (15 degrees C).

Taxonomic class: Loamy-skeletal, mixed, superactive, thermic Haplic Palexeralfs

Typical Pedon

Coalcanyon taxadjunct, on a northwest-facing slope of 15 percent, under a cover of blue oak, interior live oak, foothill pine, deerbrush, and annual grasses and forbs, at an elevation of 800 feet (244 meters). When described on 5/31/2000, the soil was dry to a depth of 42 inches (107 cm) and slightly moist from 42 to 72 inches (107 to 183 cm). (Colors are for dry soil unless otherwise noted.)

- A—0 to 2 inches (0 to 5 cm); light brown (7.5YR 6/4) very gravelly loam, brown (7.5YR 4/2) moist; 23 percent clay; moderate fine and medium granular structure; hard, friable, slightly sticky, slightly plastic; common very fine and fine roots; many very fine to medium irregular and tubular pores; 15 percent cobbles and 20 percent gravel; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.
- Bt1—2 to 6 inches (5 to 15 cm); light brown (7.5YR 6/4) very gravelly loam, brown (7.5YR 4/3) moist; 26 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine to medium roots; many very fine to medium tubular pores; 80 percent continuous faint clay films on faces of peds; 15 percent cobbles and 20 percent gravel; slightly acid, pH 6.6 by Hellige-Truog; gradual smooth boundary.
- Bt2—6 to 14 inches (15 to 36 cm); brown (7.5YR 5/4) very gravelly clay loam, brown (7.5YR 4/3) moist; 28 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common coarse and many very fine to medium roots; many very fine to medium tubular pores; 80 percent continuous faint clay films on faces of peds; 15 percent cobbles and 20 percent gravel; slightly acid, pH 6.6 by Hellige-Truog; gradual smooth boundary.
- Bt3—14 to 24 inches (36 to 61 cm); brown (7.5YR 5/4) very gravelly clay loam, brown (7.5YR 4/3) moist; 30 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine to coarse roots; many very fine to medium tubular pores; 80 percent continuous faint clay films on faces of peds; 15 percent cobbles and 20 percent gravel; slightly acid, pH 6.6 by Hellige-Truog; clear smooth boundary.
- Bt4—24 to 42 inches (61 to 107 cm); brown (7.5YR 5/3) extremely cobbly clay loam, brown (7.5YR 4/2) moist; 33 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine to medium tubular pores; 80 percent continuous distinct clay films on faces of peds; 35 percent gravel and 35 percent cobbles; slightly acid, pH 6.6 by Hellige-Truog; clear smooth boundary.
- 2Bt5—42 to 54 inches (107 to 137 cm); brown (7.5YR 5/4) very cobbly clay, brown (7.5YR 4/3) moist; 42 percent clay; strong fine and medium subangular blocky structure; hard, friable, very sticky, very plastic; common very fine and fine and few medium roots; common very fine and fine tubular pores; 80 percent continuous distinct clay films on faces of peds; 25 percent gravel and 25 percent cobbles; slightly acid, pH 6.6 by Hellige-Truog; gradual smooth boundary.
- 2Bt6—54 to 72 inches (137 to 183 cm); brown (7.5YR 5/4) very gravelly clay loam, brown (7.5YR 4/3) moist; 39 percent clay; strong fine and medium subangular blocky structure; hard, friable, very sticky, very plastic; few very fine to coarse

roots; common very fine and fine tubular pores; 80 percent continuous distinct clay films on faces of peds; 20 percent cobbles and 40 percent gravel; neutral, pH 6.8 by Hellige-Truog.

Type location: Butte County, California; about 0.75 mile west-southwest of the intersection of Highway 32 and Ten Mile Road, approximately 800 feet south and 1,250 feet west of the center of sec. 35, T. 23 N., R. 2 E.; 39 degrees, 48 minutes, 15 seconds north latitude and 121 degrees, 43 minutes, 36 seconds west longitude; NAD83; USGS Quad: Paradise West, California.

Range in Characteristics

The depth to bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 59 to 64 degrees F (15 to 18 degrees C). The soil moisture control section is dry in all parts from about May to October (about 180 days). The particle-size control section averages 27 to 35 percent clay and 35 to 80 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. Rock fragments on the surface range from 10 to 60 percent gravel, 5 to 50 percent cobbles, 0 to 30 percent stones, and 0 to 25 percent boulders.

The A horizon has dry color of 7.5YR 6/2, 6/3, or 6/4 or 10YR 6/2, 6/3, 5/4, or 6/4. Moist color is 7.5YR 3/2 or 4/2 or 10YR 3/2, 4/2, or 4/3. Texture is very gravelly loam, very cobbly loam, or extremely cobbly loam. The content of clay ranges from 20 to 27 percent. The horizon has 20 to 35 percent gravel, 10 to 25 percent cobbles, 0 to 25 percent stones, and 0 to 20 percent boulders. Reaction is slightly acid or neutral.

The upper part of the Bt horizon has dry color of 7.5YR 4/3, 5/3, 5/4, 6/3, or 6/4 or 10YR 5/3 or 6/4. Moist color is 7.5YR 4/2 or 4/3 or 10YR 4/2 or 4/3. Texture is very gravelly loam, extremely cobbly loam, very stony loam, very gravelly clay loam, very cobbly clay loam, very stony clay loam, extremely gravelly clay loam, extremely cobbly clay loam, or extremely stony clay loam. The content of clay ranges from 23 to 35 percent. The content of gravel is 5 to 40 percent, the content of cobbles is 15 to 35 percent, the content of stones is 0 to 30 percent, and the content of boulders is 0 to 15 percent. Reaction is slightly acid or neutral.

The lower part of the Bt horizon has dry color of 7.5YR 4/3, 5/3, or 5/4 or 10YR 6/3. Moist color is 7.5YR 4/2 or 4/3 or 10YR 4/3. Texture is very gravelly clay loam, very cobbly clay loam, extremely stony clay loam, very cobbly clay, or extremely bouldery clay. The content of clay ranges from 30 to 50 percent. The content of gravel is 5 to 40 percent, the content of cobbles is 10 to 35 percent, the content of stones is 0 to 30 percent, and the content of boulders is 0 to 15 percent. Reaction is slightly acid or neutral.

The Coalcanyon taxadjunct is a taxadjunct because it has lighter colors in the A horizon than is defined as the range for the series. This difference does not significantly affect the use, management, or interpretations of the soils.

Codora Series

The Codora series consists of very deep, somewhat poorly drained soils that formed in alluvium derived from igneous, metamorphic, and sedimentary rocks. These soils are on flood plains. Slopes range from 0 to 2 percent. The mean annual precipitation is about 18 inches (457 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Fine, mixed, superactive, thermic Fluventic Haploxerepts

Typical Pedon

Codora silty clay loam, on a slope of 1 percent, under a cover of nonirrigated barley, at an elevation of 85 feet (26 m). (Colors are for dry soil unless otherwise noted.)

- Ap—0 to 6 inches (0 to 15 cm); grayish brown (2.5Y 5/2) silty clay loam, very dark grayish brown (2.5Y 3/2) moist; 4 percent sand; 65 percent silt; 31 percent clay; coarse subangular blocky structure parting to medium granular; hard, firm, slightly sticky, moderately plastic; many very fine and fine roots; few very fine tubular and many very fine to medium irregular pores; neutral, pH 6.7; abrupt smooth boundary.
- A—6 to 11 inches (15 to 28 cm); grayish brown (2.5Y 5/2) silty clay loam, very dark grayish brown (2.5Y 3/2) moist; 4 percent sand; 64 percent silt; 32 percent clay; moderate coarse subangular blocky structure; hard, firm, slightly sticky, moderately plastic; many very fine and fine roots; few very fine tubular and many very fine to medium irregular pores; neutral, pH 6.7; clear smooth boundary.
- Bw1—11 to 22 inches (28 to 56 cm); grayish brown (10YR 5/2) silty clay loam, very dark grayish brown (10YR 3/2) moist; 3 percent sand; 59 percent silt; 38 percent clay; weak coarse subangular blocky structure; hard, firm, moderately sticky, moderately plastic; many very fine roots; many very fine and fine tubular and common very fine to medium irregular pores; organic stains and 3 percent patchy clay films; neutral, pH 7.1; clear smooth boundary.
- Bw2—22 to 38 inches (56 to 96 cm); 50 percent grayish brown (10YR 5/2) and 50 percent light brownish gray (10YR 6/2) silty clay loam, very dark grayish brown (10YR 3/2) moist; 4 percent sand; 57 percent silt; 39 percent clay; massive; hard, firm, moderately sticky, moderately plastic; few very fine roots; many very fine and fine tubular and common very fine irregular pores; 1 percent patchy clay films; neutral, pH 7.2; clear smooth boundary.
- Bw3—38 to 60 inches (96 to 152 cm); pale brown (10YR 6/3) silty clay loam, dark brown (10YR 3/3) moist; 7 percent sand; 61 percent silt; 32 percent clay; moderate coarse subangular blocky structure; hard, firm, slightly sticky, moderately plastic; few very fine roots; many very fine and fine tubular and common very fine to medium irregular pores; finely disseminated carbonates; carbonate masses lining pores; slight effervescence; moderately alkaline, pH 8.1.

Type location: Glenn County, California; about 0.67 mile northeast of Butte City, 1,500 feet west and 2,500 feet south of the northwest corner of sec. 28, T. 19 N., R. 1 W.; 39 degrees, 28 minutes, 20 seconds north latitude and 121 degrees, 58 minutes, 50 seconds west longitude; NAD27; USGS Quad: Butte City, California.

Range in Characteristics

Depth to buried silty clay is 60 to 80 inches (152 to 203 cm) or more. The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The particle-size control section averages 36 to 40 percent clay. Mineralogy is mixed. The soils are intermittently calcareous from a depth of 38 to 60 inches (96 to 152 cm). A fluctuating water table can occur between depths of 38 and 80 inches (96 to 203 cm) or more from December through April. Redoximorphic features, such as oxidized iron masses or manganese masses, may occur in all horizons.

The Ap and A horizons have dry color of 2.5Y 5/2 or 6/2. Moist color is 2.5Y 3/2 or 4/2. Texture is silty clay loam or clay loam. The content of clay ranges from 27 to 40 percent. The content of organic matter is 1 to 3 percent. Reaction ranges from slightly acid to slightly alkaline.

The upper part of the Bw horizon has dry color of 10YR 5/2 or 6/2. Moist color is 10YR 3/2. Texture is silty clay loam, clay loam, or clay. The content of clay ranges from 35 to 40 percent. The content of organic matter is 0.5 to 3 percent. Reaction is neutral or slightly alkaline.

The lower part of the Bw horizon has dry color of 10YR 5/3, 6/3, or 6/4. Moist color is 10YR 3/3 or 4/4. Texture is silty clay loam, silty clay, or clay. The content of clay

ranges from 27 to 45 percent. Calcium carbonate is finely disseminated. The content of organic matter is 0.5 to 1 percent. Reaction is slightly alkaline or moderately alkaline.

Columbia Series

The Columbia series consists of very deep, somewhat poorly drained soils that formed in stratified overbank alluvium derived from igneous, metamorphic, and sedimentary rocks. These soils are in sloughs and active channels within the meander belt portion of the flood plains along the Sacramento and Feather Rivers. Slopes range from 0 to 2 percent. The mean annual precipitation is about 23 inches (584 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Coarse-loamy, mixed, superactive, nonacid, thermic Oxyaquic Xerofluvents

Typical Pedon

Columbia stratified sand to fine sandy loam, on a slope of 2 percent, under a cover of California sycamore, willow, and black walnut, at an elevation of 150 feet (46 m). When described on 9/21/1988, the soil was slightly moist throughout. (Colors are for dry soil unless otherwise noted.)

- A—0 to 5 inches (0 to 13 cm); yellowish brown (10YR 5/4), stratified sand to fine sandy loam, dark grayish brown (10YR 4/2) moist; 10 percent clay; single grain and moderate fine granular structure; hard, friable, slightly sticky, slightly plastic; many very fine and fine roots; many very fine interstitial pores; neutral, pH 7.3 by Hellige-Truog; abrupt smooth boundary.
- C1—5 to 10 inches (13 to 25 cm); pale brown (10YR 6/3), stratified silt loam to sandy loam, brown (10YR 4/3) moist; 10 percent clay; strong thin platy structure; hard, friable, slightly sticky, slightly plastic; few very fine roots; many very fine interstitial pores; 1 percent fine distinct dark yellowish brown (10YR 4/6 moist) oxidized iron masses; neutral, pH 7.3 by Hellige-Truog; abrupt smooth boundary.
- C2—10 to 29 inches (25 to 74 cm); yellowish brown (10YR 5/4) loam, brown (10YR 4/3) moist; 10 percent clay; weak fine and medium subangular blocky structure; hard, friable, slightly sticky, slightly plastic; few very fine roots; few fine and many very fine tubular pores; 4 percent fine distinct dark yellowish brown (10YR 4/6 moist) oxidized iron masses; slightly alkaline, pH 7.6 by Hellige-Truog; clear smooth boundary.
- C3—29 to 37 inches (74 to 94 cm); yellowish brown (10YR 5/4) fine sandy loam, dark yellowish brown (10YR 3/4) moist; 9 percent clay; massive; soft, very friable, slightly sticky, slightly plastic; few very fine and fine roots; many very fine tubular pores; 1 percent fine distinct dark yellowish brown (10YR 4/6 moist) oxidized iron masses; slightly alkaline, pH 7.6 by Hellige-Truog; abrupt smooth boundary.
- C4—37 to 46 inches (94 to 117 cm); yellowish brown (10YR 5/4) sand, brown (10YR 4/3) moist; 5 percent clay; single grain; loose, nonsticky, nonplastic; few very fine and fine roots; many very fine interstitial pores; 1 percent fine distinct dark yellowish brown (10YR 4/6 moist) oxidized iron masses; slightly alkaline, pH 7.6 by Hellige-Truog; abrupt smooth boundary.
- C5—46 to 60 inches (117 to 152 cm); light gray (10YR 7/1), stratified fine sandy loam to fine sand, dark grayish brown (10YR 4/2) moist; 8 percent clay; massive; loose, nonsticky, nonplastic; few very fine and fine roots; many very fine tubular pores; 4 percent fine distinct dark yellowish brown (10YR 4/6 moist) oxidized iron masses; slightly alkaline, pH 7.6 by Hellige-Truog.

Type location: Butte County, California; about 3.8 miles southwest of Cana, approximately 5,500 feet west and 2,900 feet north of the corner of T. 22 N. and T. 23 N., R. 1 W. and R. 2 W.; in an unsectionized area in the Bosquejo Land Grant; 39 degrees, 48 minutes, 22 seconds north latitude and 122 degrees, 2 minutes, 55 seconds west longitude; NAD27; USGS Quad: Foster Island, California.

Range in Characteristics

The depth of the soils is more than 60 inches (152 cm), and the depth to gravel ranges from 40 to 60 inches (102 to 152 cm) or more. The mean annual soil temperature is 60 to 64 degrees F (16 to 18 degrees C). The particle-size control section averages 10 to 18 percent clay. Mineralogy is mixed. Base saturation is assumed to range from 90 to 100 percent throughout the profile. A fluctuating water table can occur at a depth of 20 to 72 inches (51 to 183 cm) from December through April. Flood debris, such as logs, limbs, leaves, and grass, commonly is on the surface.

The A horizon has dry color of 10YR 5/3, 5/4, 6/2, 6/3, or 7/2. Moist color is 10YR 4/2 or 4/3. The horizon has strata of sand, loamy sand, loamy fine sand, fine sandy loam, or loam, and the texture may change seasonally following periods of flooding. The content of clay ranges from 5 to 20 percent. The content of gravel is 0 to 5 percent. The content of organic matter is 1 to 3 percent and decreases irregularly with increasing depth. Reaction is neutral or slightly alkaline.

The C horizon has dry color of 10YR 5/4, 6/3, or 7/1. Moist color is 10YR 3/3, 3/4, 4/2, 4/3, 4/4, or 6/2. The horizon has strata of fine sandy loam, very fine sandy loam, loamy fine sand, loam, silt loam, or gravelly sand. The content of clay ranges from 5 to 18 percent. The content of gravel generally is 0 to 5 percent. It is as much as 35 percent below a depth of 40 inches (102 cm). The content of organic matter is 0.5 to 2 percent and decreases irregularly with increasing depth. Redoximorphic features occur as few or common soft oxidized iron masses. Reaction is neutral or slightly alkaline.

Columbia Taxadjunct

The Columbia taxadjunct consists of very deep, poorly drained soils that formed in alluvium derived from igneous, metamorphic, and sedimentary rocks. These soils are in partially filled oxbows within the meander belt portion of the flood plain along the Sacramento River. Slopes are 0 to 1 percent. The mean annual precipitation is about 22 inches (559 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Coarse-loamy, mixed, superactive, nonacid, thermic Aeric Fluvaquents

Typical Pedon

Columbia taxadjunct stratified fine sandy loam, on a slope of 1 percent, under a cover of sedges, hardstem tule, cattail, cocklebur, willow, and California sycamore, at an elevation of 95 feet (29 m). When described on 5/15/1989, the soil was slightly moist throughout. (Colors are for dry soil unless otherwise noted.)

C1—0 to 8 inches (0 to 20 cm); light brownish gray (10YR 6/2), stratified fine sandy loam, dark grayish brown (10YR 4/2) moist; 10 percent clay; weak medium platy structure; slightly hard, very friable, slightly sticky, slightly plastic; common very fine to medium roots; common very fine to medium irregular pores; 25 percent fine distinct dark yellowish brown (10YR 4/4 moist) oxidized iron masses; neutral, pH 7.2 by Hellige-Truog; abrupt smooth boundary.

- C2—8 to 10 inches (20 to 25 cm); light brownish gray (10YR 6/2) fine sandy loam, dark grayish brown (10YR 4/2) moist; 8 percent clay; weak medium platy structure; slightly hard, very friable, slightly sticky, slightly plastic; common very fine to medium roots; common very fine to medium tubular pores; 16 percent fine distinct dark yellowish brown (10YR 4/4 moist) oxidized iron masses; neutral, pH 7.2 by Hellige-Truog; abrupt smooth boundary.
- C3—10 to 19 inches (25 to 48 cm); pale brown (10YR 6/3), stratified fine sandy loam, dark grayish brown (10YR 4/2) moist; 9 percent clay; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; few fine and common very fine roots; few very fine and fine tubular pores; 15 percent fine distinct dark yellowish brown (10YR 4/4 and 4/6 moist) oxidized iron masses; neutral, pH 7.2 by Hellige-Truog; clear smooth boundary.
- C4—19 to 30 inches (48 to 76 cm); pale brown (10YR 6/3), stratified fine sandy loam, dark brown (10YR 3/3) moist; 9 percent clay; weak medium platy structure; slightly hard, very friable, slightly sticky, slightly plastic; few fine and common very fine roots; few very fine and fine tubular pores; 25 percent fine distinct dark yellowish brown (10YR 4/4 and 4/6 moist) oxidized iron masses; slightly alkaline, pH 7.4 by Hellige-Truog; clear smooth boundary.
- C5—30 to 40 inches (76 to 102 cm); light olive gray (5Y 6/2), stratified silt loam, dark gray (5Y 4/1) moist; 10 percent clay; weak medium platy structure; slightly hard, very friable, slightly sticky, slightly plastic; few fine and common very fine roots; few very fine and fine tubular pores; 25 percent fine prominent dark yellowish brown (10YR 4/4 and 4/6 moist) oxidized iron masses; neutral, pH 7.3 by Hellige-Truog; clear smooth boundary.
- C6—40 to 60 inches (102 to 152 cm); pale brown (10YR 6/3), stratified silt loam, dark grayish brown (10YR 4/2) moist; 12 percent clay; weak thin platy structure; slightly hard, very friable, slightly sticky, slightly plastic; common very fine roots; 30 percent fine distinct dark yellowish brown (10YR 4/4 and 4/6 moist) oxidized iron masses; neutral, pH 7.3 by Hellige-Truog.

Type location: Butte County, California; about 3.4 miles south of Ord Ferry Bridge, approximately 16,000 feet south of the boundary between T. 20 N. and T. 21 N. and 21,000 feet west of the Mt. Diablo meridian; in an unsectionized area in the Llano Seco Land Grant; 39 degrees, 34 minutes, 37 seconds north latitude and 121 degrees, 59 minutes, 22 seconds west longitude; NAD27; USGS Quad: Llano Seco, California.

Range in Characteristics

The soils are more than 60 inches (152 cm) deep. The mean annual soil temperature is 60 to 64 degrees F (16 to 18 degrees C). The particle-size control section averages 10 to 15 percent clay and 0 to 5 percent rock fragments, mostly well rounded gravel. Mineralogy is mixed. The soils are not calcareous. The content of organic matter is 0.5 to 1.3 percent and decreases irregularly with increasing depth. Base saturation ranges from 90 to 100 percent throughout the profile. A fluctuating water table can occur from the surface to a depth of 24 inches (61 cm) from December through April and is usually below 40 inches (102 cm) from June to November. Redoximorphic features, such as soft oxidized iron masses with color of 10YR 4/4 or 4/6, occur in all horizons. Also, iron depletions with color of 5Y 4/1 occur below a depth of 20 inches (51 cm).

The C horizon has dry color of 10YR 6/2 or 6/3, 2.5Y 6/2, or 5Y 6/2. Moist color is 10YR 3/3, 4/2, or 5/1; 2.5Y 4/2; or 5Y 4/1 or 4/2. Texture is stratified loamy very fine sand, silt loam, or fine sandy loam. The content of clay ranges from 5 to 15 percent. The content of gravel is 0 to 5 percent. Charcoal or organic fragments are common. Reaction is neutral or slightly alkaline.

Some pedons have lenses of sand and/or gravel.

The Columbia taxadjunct is a taxadjunct because it has aquic conditions, chroma of 2 or less, and redoximorphic concentrations at a depth of 16 to 20 inches (41 to 51 cm), which is higher in the profile than is defined as the range for the series. These differences do not significantly affect the use, management, and interpretations of the soils.

Conejo Series

The Conejo series consists of very deep, well drained soils that formed in alluvium derived from mixed rock sources. These soils are on distal alluvial fans. Slopes range from 0 to 2 percent. The mean annual precipitation is about 21 inches (533 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Pachic Haploxerolls

Typical Pedon

Conejo clay loam, in an area of milo, at an elevation of 135 feet (41 m); redescribed on 7/20/1993. (Colors are for dry soil unless otherwise noted.)

- Ap—0 to 5 inches (0 to 13 cm); dark gray (10YR 4/1) clay loam, very dark gray (10YR 3/1) moist; 31 percent clay; moderate medium and coarse subangular blocky and strong medium granular structure; very hard, friable, moderately sticky, moderately plastic; many fine and medium irregular pores; slightly alkaline, pH 7.5 by Hellige-Truog; abrupt wavy boundary.
- A1—5 to 19 inches (13 to 48 cm); very dark grayish brown (10YR 3/2) clay loam, very dark brown (10YR 2/2) moist; 31 percent clay; moderate coarse subangular blocky structure; very hard, friable, moderately sticky, moderately plastic; common very fine roots; many very fine and fine tubular and many fine irregular pores; slightly alkaline, pH 7.5 by Hellige-Truog; clear wavy boundary.
- A2—19 to 30 inches (48 to 76 cm); very dark grayish brown (10YR 3/2) clay loam, very dark grayish brown (10YR 3/2) moist; 31 percent clay; moderate medium subangular blocky structure; very hard, friable, moderately sticky, moderately plastic; common very fine roots; many very fine and few fine tubular pores; few pressure faces; common fine iron-manganese nodules about 1 mm in diameter; 1 percent gravel; slightly alkaline, pH 7.5 by Hellige-Truog; gradual wavy boundary.
- Bw1—30 to 48 inches (76 to 122 cm); dark grayish brown (10YR 4/2) clay loam, very dark grayish brown (10YR 3/2) moist; 29 percent clay; moderate coarse subangular blocky structure; very hard, friable, moderately sticky, moderately plastic; common very fine roots; many very fine and fine tubular and many fine irregular pores; many pressure faces; few fine iron-manganese nodules about 1 mm in diameter; 2 percent gravel; slightly alkaline, pH 7.5 by Hellige-Truog; clear wavy boundary.
- Bw2—48 to 70 inches (122 to 178 cm); brown (10YR 5/3) sandy loam, dark yellowish brown (10YR 4/4) moist; 19 percent clay; weak fine and medium subangular blocky structure; slightly hard, weakly brittle but friable, nonsticky, slightly plastic; common very fine roots; many very fine and few fine and medium tubular pores; slightly effervescent in seams; common medium oxidized iron masses; 1 percent gravel; moderately alkaline, pH 8.0 by Hellige-Truog.

Type location: Butte County, California; about 6 miles south of Chico, on the west side of Aquas Frias Road, approximately 800 feet south of northeast corner of sec. 33, T. 21 N., R. 1 E.; 39 degrees, 38 minutes, 10 seconds north latitude and 121 degrees, 51 minutes, 40 seconds west longitude; NAD27; USGS Quad: Chico, California.

Range in Characteristics

The depth of the soils is more than 80 inches (203 cm). The mean annual soil temperature is 59 to 62 degrees F (15 to 17 degrees C). The soil moisture control section is dry in all parts from about May to October (about 140 to 160 days) The particle-size control section averages 27 to 35 percent clay and has some gravel.

Some pedons have overwash of fine sandy loam or loam less than 20 inches (51 cm) thick. These pedons are clay loam or loam in the Ab horizon and in the upper part of the Bw horizon and have 0 to 5 percent gravel and average 18 to 35 percent clay in the particle-size control section. The extent of this overwash phase is about 600 to 700 acres. The overwash is the result of hydraulic mine deposits splaying out of the early levees on Butte Creek, north of Durham.

The Ap and A horizons have dry colors of 10YR 3/2, 4/1, 5/2, or 5/3. Moist color is 10YR 2/2, 3/1, or 3/2. Texture is clay loam. The content of clay ranges from 27 to 35 percent. The content of gravel is 0 to 2 percent. The content of organic matter is 3 to 6 percent. Reaction ranges from slightly acid to slightly alkaline.

The upper part of the Bw horizon has dry colors of 10YR 4/2, 4/3, 5/2, or 5/3. Moist color is 10YR 3/2, 3/3, 4/2, or 4/3 or 7.5YR 3/2 or 4/2. Texture is clay loam. The content of clay ranges from 27 to 35 percent. The content of gravel is 0 to 2 percent. Reaction ranges from slightly acid to slightly alkaline.

The lower part of the Bw horizon has dry colors of 10YR 5/3 or 7.5YR 4/2 or 6/4. Moist color is 10YR 4/2, 4/3, 4/4, 5/3, or 5/4. Texture is sandy loam, fine sandy loam, loam, or clay loam. The content of clay ranges from 15 to 35 percent. The content of gravel is 0 to 2 percent. Reaction ranges from neutral to moderately alkaline. In some pedons segregated or secondary lime is at a depth of more than 30 inches (76 cm). Some pedons have redoximorphic features within 40 inches (102 cm) of the surface, and a few pedons have redoximorphic features within 30 inches (76 cm) of the surface.

Coonhollow Series

The Coonhollow series consists of deep, well drained soils that formed in colluvium derived from basalt. These soils are on convex side slopes on basalt plateaus on volcanic Sierra Nevada foothills. Slopes range from 5 to 50 percent. The mean annual precipitation is about 30 inches (762 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Loamy-skeletal, parasquic, thermic Pachic Ultic Argixerolls

Typical Pedon

Coonhollow gravelly loam, on a northwest-facing slope of 45 percent, under a cover of hardwoods, shrubs, and annual grasses, at an elevation of 1,020 feet (311 m). When described on 10/31/2000, the soil was moist throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 3 inches (0 to 8 cm); brown (7.5YR 4/3) gravelly loam, dark brown (7.5YR 3/2) moist; 16 percent clay; weak fine granular structure; soft, very friable, nonsticky, nonplastic; many fine roots throughout; many fine irregular pores; 10 percent basalt cobbles and 15 percent basalt gravel; neutral, pH 5.5 by pH meter 1:1 water; clear smooth boundary.

ABt—3 to 11 inches (8 to 28 cm); brown (7.5YR 4/3) very cobbly loam, dark reddish brown (5YR 3/3) moist; 19 percent clay; weak medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common fine and medium roots throughout and few coarse roots between peds; few fine tubular and common fine irregular pores; 10 percent discontinuous distinct clay films on

- surfaces along pores; 15 percent basalt gravel and 30 percent basalt cobbles; neutral, pH 5.9 by pH meter 1:1 water; gradual wavy boundary.
- Bt1—11 to 22 inches (28 to 56 cm); brown (7.5YR 4/3) very cobbly loam, dark reddish brown (5YR 3/3) moist; 23 percent clay; moderate medium subangular blocky structure; slightly hard, friable, moderately sticky, slightly plastic; common fine and very coarse roots throughout; common fine tubular and common medium irregular pores; 20 percent discontinuous distinct clay films on surfaces along pores; 15 percent basalt gravel and 40 percent basalt cobbles; neutral, pH 6.1 by pH meter 1:1 water; clear wavy boundary.
- Bt2—22 to 32 inches (56 to 81 cm); brown (7.5YR 4/3) extremely cobbly loam, dark reddish brown (5YR 3/3) moist; 26 percent clay; moderate medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common fine and few very fine roots between peds and few very coarse roots throughout; common medium tubular pores; 35 percent discontinuous distinct clay films on surfaces along pores; 15 percent basalt gravel and 50 percent basalt cobbles; slightly acid, pH 6.4 by pH meter 1:1 water; clear wavy boundary.
- Bt3—32 to 45 inches (81 to 114 cm); brown (7.5YR 5/3) extremely cobbly clay loam, brown (7.5YR 4/3) moist; 29 percent clay; moderate medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; few fine and common medium roots between peds and common very coarse roots throughout; common medium tubular pores; 45 percent discontinuous distinct clay films on surfaces along pores; 20 percent basalt gravel and 55 percent basalt cobbles; slightly acid, pH 6.4 by pH meter 1:1 water; clear wavy boundary.
- Cr—45 to 50 inches (114 to 127 cm); moderately cemented basalt bedrock; abrupt wavy boundary.
- R—50 inches (127 cm); indurated basalt bedrock.

Type location: Butte County, California; about 5.1 miles north of downtown Oroville, approximately 1,750 feet east and 1,800 feet north of the southwest corner of sec. 18, T. 20 N., R. 4 E.; 39 degrees, 35 minutes, 18 seconds north latitude and 121 degrees, 34 minutes, 15 seconds west longitude; NAD83; USGS Quad: Oroville, California.

Range in Characteristics

The depth to paralithic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 61 to 64 degrees F (16 to 18 degrees C). The particle-size control section averages 18 to 27 percent clay and 35 to 60 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. The content of organic matter is 1 to 13 percent to a depth of 32 inches (81 cm) and is less than 1 percent from 32 to 50 inches (81 to 127 cm). By ammonium acetate, base saturation ranges from 78 to 91 percent throughout the profile. By sum of cations, it ranges from 55 to 58 percent. Rock fragments on the surface range from 10 to 60 percent gravel, 5 to 65 percent cobbles, 0 to 25 percent stones, and 0 to 20 percent boulders. Some pedons have silty textures.

The A horizon has dry color of 7.5YR 3/4 or 4/3 or 10YR 3/3, 4/3, or 5/3. Moist color is 7.5YR 3/2 or 3/3 or 10YR 2/2, 3/2, or 3/3. Texture is gravelly loam, loam, very gravelly loam, or very cobbly loam. The content of clay ranges from 16 to 22 percent. The horizon has 10 to 55 percent gravel, 5 to 35 percent cobbles, 0 to 45 percent stones, and 0 to 15 percent boulders. Reaction ranges from strongly acid to neutral.

The ABt horizon has dry color of 7.5YR 4/3 or 10YR 5/3 or 5/4. Moist color is 5YR 3/3, 7.5YR 4/3, or 10YR 3/2 or 3/3. Texture is very cobbly loam, loam, gravelly loam, or very gravelly loam. The content of clay ranges from 18 to 22 percent. The horizon has 10 to 50 percent gravel, 5 to 40 percent cobbles, 0 to 55 percent stones, and 0 to 15 percent boulders. Reaction ranges from moderately acid to neutral.

The Bt horizon has dry color of 7.5YR 4/3, 5/3, or 5/4 or 10YR 3/4, 4/3, 4/4, 5/2, or 5/3. Moist color is 5YR 3/3 or 7.5YR 4/3, 3/2, 3/3, or 3/4. Texture is very cobbly loam,

extremely cobbly loam, very cobbly clay loam, extremely cobbly clay loam, gravelly loam, very gravelly loam, gravelly clay loam, very gravelly clay loam, or extremely gravelly clay loam. The content of clay ranges from 18 to 38 percent. The horizon has 15 to 80 percent gravel, 5 to 60 percent cobbles, 0 to 60 percent stones, and 0 to 15 percent boulders. Reaction is slightly acid or neutral.

Coridge Series

The Coridge series consists of moderately deep, moderately well drained soils that formed in residuum derived from basalt. These soils are on the top of ridges on Cascade foothills. Slopes range from 3 to 15 percent. The mean annual precipitation is about 29 inches (736 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Loamy-skeletal, mixed, superactive, thermic Ultic Haploxeralfs

Typical Pedon

Coridge bouldery loam, on a southwest-facing slope of 7 percent, under a cover of Mediterranean barley, soft chess, grasspink, dandelion, and scattered blue oak and foothill pine, at an elevation of 1,030 feet (314 m). When described on 5/20/1998, the soil was moist throughout. (Colors are for dry soil unless otherwise noted.)

- A—0 to 1 inch (0 to 3 cm); brown (7.5YR 5/4) bouldery loam, brown (7.5YR 4/2) moist; 22 percent clay; moderate medium platy structure parting to moderate fine and medium subangular blocky; hard, friable, slightly sticky, slightly plastic; many very fine roots; few very fine and fine irregular and tubular pores; 10 percent medium irregular oxidized iron masses lining pores; 5 percent gravel and 10 percent boulders; moderately acid, pH 6.0 by Hellige-Truog; clear smooth boundary.
- Bt1—1 to 6 inches (3 to 15 cm); reddish brown (5YR 5/4) gravelly loam, reddish brown (5YR 4/3) moist; 25 percent clay; moderate fine and medium subangular blocky structure; hard, friable, slightly sticky, slightly plastic; common very fine roots; common very fine and fine tubular pores; 60 percent discontinuous distinct clay films; 5 percent medium irregular iron-manganese masses between peds; 10 percent boulders and 20 percent gravel; slightly acid, pH 6.4 by Hellige-Truog; gradual smooth boundary.
- Bt2—6 to 12 inches (15 to 30 cm); reddish brown (5YR 5/4) gravelly clay loam, reddish brown (5YR 4/3) moist; 29 percent clay; moderate fine and medium subangular blocky structure; extremely hard, friable, slightly sticky, moderately plastic; common very fine and fine and few medium roots; many very fine and fine tubular pores; 60 percent discontinuous distinct clay films; 10 percent boulders and 15 percent gravel; neutral, pH 6.7 by Hellige-Truog; clear smooth boundary.
- Bt3—12 to 19 inches (30 to 48 cm); reddish brown (5YR 5/4) very gravelly clay loam, reddish brown (5YR 4/3) moist; 35 percent clay; moderate fine and medium subangular blocky structure; extremely hard, friable, moderately sticky, moderately plastic; few very fine to medium roots; common very fine and fine irregular and tubular pores; 60 percent discontinuous distinct clay films; 10 percent boulders, 10 percent cobbles, and 15 percent gravel; neutral, pH 6.7 by Hellige-Truog; clear smooth boundary.
- Bt4—19 to 24 inches (48 to 61 cm); brown (7.5YR 5/4) very gravelly clay, brown (7.5YR 4/4) moist; 40 percent clay; moderate fine and medium subangular blocky structure; extremely hard, firm, very sticky, very plastic; few very fine to coarse roots; few very fine and fine irregular and tubular pores; 90 percent continuous distinct clay films; 5 percent cobbles, 10 percent boulders, and 35 percent gravel; neutral, pH 6.7 by Hellige-Truog; abrupt smooth boundary.
- R—24 inches (61 cm); indurated basalt bedrock.

Type location: Butte County, California; about 1.3 miles west of Richardson Springs, approximately 300 feet north and 850 feet east of the southwest corner of sec. 18, T. 23 N., R. 2 E.; 39 degrees, 50 minutes, 31 seconds north latitude and 121 degrees, 48 minutes, 10 seconds west longitude; NAD27; USGS Quad: Richardson Springs, California.

Range in Characteristics

The depth to lithic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 59 to 67 degrees F (15 to 19 degrees C). The particle-size control section averages 27 to 35 percent clay and 35 to 60 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur between the top of the bedrock and 10 inches (25 cm) below the surface of the soil from December through April. Redoximorphic features occur as soft oxidized iron masses in the A horizon, iron-manganese masses in the upper part of the Bt horizon, and iron-manganese masses and nodules in the lower part of the Bt horizon. Rock fragments on the surface range from 5 to 25 percent gravel, 5 to 15 percent cobbles, 5 to 15 percent stones, and 2 to 20 percent boulders.

The A horizon has dry color of 5YR 5/4 or 7.5YR 5/4. Moist color is 5YR 3/3 or 4/3 or 7.5YR 4/2. Texture is gravelly loam, very gravelly loam, or bouldery loam. The content of clay ranges from 20 to 27 percent. The horizon has 5 to 35 percent gravel, 0 to 10 percent cobbles, 0 to 10 percent stones, and 0 to 20 percent boulders. Reaction ranges from moderately acid to neutral.

The upper part of the Bt horizon has dry color of 5YR 4/4, 5/4, or 5/6. Moist color is 5YR 4/3 or 4/4. Texture is gravelly loam, very gravelly loam, gravelly clay loam, or very gravelly clay loam. The content of clay ranges from 25 to 35 percent. The content of gravel is 15 to 30 percent, the content of cobbles is 0 to 15 percent, the content of stones is 0 to 15 percent, and the content of boulders is 0 to 10 percent. Reaction is slightly acid or neutral.

The lower part of the Bt horizon has dry color of 5YR 4/4 or 4/6 or 7.5YR 5/4. Moist color is 5YR 4/4, 7.5YR 4/4, or 2.5YR 3/4. Texture is very gravelly clay loam, very gravelly clay, or extremely stony clay. The content of clay ranges from 35 to 50 percent. The content of gravel is 10 to 35 percent, the content of cobbles is 5 to 20 percent, the content of stones is 0 to 35 percent, and the content of boulders is 0 to 10 percent. Reaction is slightly acid or neutral.

Craigsaddle Series

The Craigsaddle series consists of deep, well drained soils that formed in residuum and colluvium derived from trondhjemite. These soils are on ridgetops and side slopes on granitic Sierra Nevada foothills. Slopes range from 2 to 70 percent. The mean annual precipitation is about 48 inches (1,219 mm), and the mean annual air temperature is about 58 degrees F (14 degrees C).

Taxonomic class: Fine-loamy, mixed, active, thermic Ultic Haploxeralfs

Typical Pedon

Craigsaddle coarse sandy loam, on a southwest-facing slope of 7 percent, under a cover of hardwoods, conifers, and shrubs, at an elevation of 980 feet (299 m). When described on 11/18/1998, the soil was slightly moist to a depth of 21 inches (53 cm) and dry from 21 to 80 inches (53 to 203 cm). (Colors are for dry soil unless otherwise noted.)

A—0 to 5 inches (0 to 13 cm); pale brown (10YR 6/3) coarse sandy loam, brown (10YR 4/3) moist; 6 percent clay; weak fine subangular blocky structure parting to single grain; loose, very friable, nonsticky, nonplastic; few fine and common very

- fine roots; many very fine interstitial pores; 2 percent gravel; strongly acid, pH 5.5 by pH meter 1:1 water; abrupt smooth boundary.
- Bw1—5 to 11 inches (13 to 28 cm); light gray (10YR 7/2) sandy loam, brown (10YR 4/3) moist; 10 percent clay; weak fine subangular blocky structure parting to single grain; loose, very friable, nonsticky, nonplastic; common fine and few very fine roots; many very fine interstitial pores; 2 percent gravel; strongly acid, pH 5.4 by pH meter 1:1 water; abrupt smooth boundary.
- Bw2—11 to 17 inches (28 to 43 cm); pale brown (10YR 6/3) sandy loam, brown (7.5YR 5/4) moist; 10 percent clay; moderate fine subangular blocky structure; loose, very friable, nonsticky, nonplastic; common fine and coarse and many medium roots; common very fine and fine tubular pores; 5 percent gravel; strongly acid, pH 5.5 by pH meter 1:1 water; abrupt smooth boundary.
- Bw3—17 to 21 inches (43 to 53 cm); very pale brown (10YR 7/3) sandy loam, brown (7.5YR 5/4) moist; 12 percent clay; moderate fine subangular blocky structure; slightly hard, friable, nonsticky, slightly plastic; few fine and common medium and coarse roots; common very fine and fine tubular pores; 10 percent discontinuous faint clay films on faces of peds; 5 percent gravel; strongly acid, pH 5.5 by pH meter 1:1 water; clear smooth boundary.
- Bt1—21 to 31 inches (53 to 79 cm); pink (7.5YR 7/4) sandy loam, brown (7.5YR 5/4) moist; 19 percent clay; moderate medium subangular blocky structure; hard, friable, slightly sticky, slightly plastic; few fine and medium roots; many very fine tubular pores; 20 percent discontinuous distinct clay films on faces of peds and in pores; 5 percent gravel; moderately acid, pH 5.7 by pH meter 1:1 water; clear smooth boundary.
- Bt2—31 to 51 inches (79 to 130 cm); reddish yellow (7.5YR 7/6) sandy loam, yellowish red (5YR 5/6) moist; 20 percent clay; strong medium subangular blocky structure; very hard, firm, slightly sticky, slightly plastic; few fine and medium roots; many very fine tubular pores; 30 percent discontinuous distinct clay films on faces of peds and in pores; 10 percent gravel; moderately acid, pH 5.8 by pH meter 1:1 water; clear smooth boundary.
- BCt—51 to 58 inches (130 to 147 cm); pink (7.5YR 8/3) gravelly sandy loam, light brown (7.5YR 6/4) moist; 14 percent clay; moderate medium subangular blocky structure; hard, firm, nonsticky, slightly plastic; few fine roots; common very fine tubular pores; 20 percent discontinuous prominent clay films on faces of peds; 1 percent mica flakes; 25 percent gravel; moderately acid, pH 5.6 by pH meter 1:1 water; gradual wavy boundary.
- Cdt—58 to 80 inches (147 to 203 cm); weathered, densic trondhjemite bedrock; pink (7.5YR 8/4) gravelly sandy loam, light brown (7.5YR 6/4) moist; 12 percent clay; massive; very hard, firm, nonsticky, nonplastic; few fine roots; few very fine tubular pores; 25 percent discontinuous prominent clay films on faces of peds; 5 percent mica flakes; 25 percent gravel; moderately acid, pH 5.9 by pH meter 1:1 water.

Type location: Butte County, California; about 2.5 miles east of Bidwell Bar Bridge, approximately 2,150 feet east and 2,000 feet north of the southwest corner of sec. 35, T. 20 N., R. 5 E.; 39 degrees, 32 minutes, 49 seconds north latitude and 121 degrees, 22 minutes, 58 seconds west longitude; NAD83; USGS Quad: Oroville Dam, California.

Range in Characteristics

The depth to densic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 59 to 64 degrees F (15 to 18 degrees C). The particle-size control section averages 18 to 27 percent clay and 5 to 10 percent rock fragments, mostly gravel. Mineralogy is mixed. The content of organic matter is 1 to 2.5 percent to a depth of 5 inches (13 cm) and is less than 1 percent from 5 to 80 inches (13 to 203 cm). By sum of cations, base saturation is less than 75 percent throughout the profile.

Rock fragments on the surface range from 0 to 10 percent gravel. Some pedons do not have a BCt horizon. Some have an O horizon at the surface.

The A horizon has dry color of 10YR 5/2, 6/2, or 6/3. Moist color is 10YR 3/2, 3/3, or 4/3. Texture is coarse sandy loam or sandy loam. The content of clay ranges from 5 to 10 percent. The content of fine gravel is 2 to 10 percent. Reaction ranges from strongly acid to slightly acid.

The Bw horizon has dry color of 10YR 6/2, 6/3, 7/2, or 7/3. Moist color is 10YR 4/2, 4/3, 5/3, or 5/4 or 7.5YR 5/4. Texture is sandy loam, coarse sandy loam, or gravelly coarse sandy loam. The content of clay ranges from 8 to 12 percent. The content of gravel is 2 to 30 percent. Reaction ranges from strongly acid to slightly acid. This horizon is 9 to 32 inches (23 to 81 cm) thick.

The Bt horizon has dry color of 7.5YR 6/4, 6/6, 7/4, or 7/6; 5YR 6/4; or 10YR 7/4. Moist color is 7.5YR 4/6, 5/4, 5/6, or 6/4; 5YR 4/6 or 5/6; or 10YR 5/4. Texture is sandy loam, sandy clay loam, gravelly sandy loam, or gravelly sandy clay loam. The content of clay ranges from 15 to 27 percent. The content of gravel is 0 to 30 percent. Reaction ranges from strongly acid to slightly acid.

The BCt horizon has dry color of 7.5YR 7/4 or 8/3 or 5YR 6/6. Moist color is 7.5YR 5/6 or 6/4 or 2.5YR 4/8. Texture is gravelly sandy loam or sandy clay loam. The content of clay ranges from 13 to 25 percent. The content of gravel is 0 to 25 percent. Reaction ranges from very strongly acid to slightly acid.

The Cdt horizon has dry color of 7.5YR 6/4 or 8/4 or 10YR 7/4. Moist color is 7.5YR 5/4 or 6/4. Texture is gravelly sandy loam or very gravelly sandy clay loam. The content of clay ranges from 12 to 23 percent. The content of gravel is 20 to 50 percent. Reaction is strongly acid or moderately acid.

Crystalhill Series

The Crystalhill series consists of very deep, somewhat excessively drained soils that formed in residuum and colluvium derived from trondhjemite. These soils are on ridgetops and side slopes on granitic Sierra Nevada foothills. Slopes range from 2 to 70 percent. The mean annual precipitation is about 48 inches (1,219 mm), and the mean annual air temperature is about 58 degrees F (14 degrees C).

Taxonomic class: Coarse-loamy, mixed, active, thermic Typic Haploxerepts

Typical Pedon

Crystalhill gravelly coarse sandy loam, on a northwest-facing slope of 45 percent, under a cover of shrubs, hardwoods, and conifers, at an elevation of 1,740 feet (530 m). When described on 7/17/2001, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 2 inches (0 to 5 cm); slightly decomposed plant material; abrupt smooth boundary.

A—2 to 7 inches (5 to 18 cm); light gray (10YR 7/2) gravelly coarse sandy loam, brown (10YR 5/3) moist; 5 percent clay; moderate fine subangular blocky structure; slightly hard, very friable, nonsticky, nonplastic; common fine roots; many very fine interstitial pores; 25 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

Bw1—7 to 14 inches (18 to 36 cm); pale brown (10YR 6/3) gravelly coarse sandy loam, brown (10YR 4/3) moist; 8 percent clay; moderate fine subangular blocky structure; slightly hard, very friable, nonsticky, nonplastic; common fine roots; common very fine interstitial pores; 20 percent gravel; slightly acid, pH 6.3 by Hellige-Truog; clear smooth boundary.

- Bw2—14 to 22 inches (36 to 56 cm); very pale brown (10YR 7/3) gravelly coarse sandy loam, brown (10YR 4/3) moist; 8 percent clay; moderate fine subangular blocky structure; slightly hard, very friable, nonsticky, nonplastic; few fine roots; common very fine interstitial pores; 25 percent gravel; slightly acid, pH 6.3 by Hellige-Truog; gradual smooth boundary.
- Bw3—22 to 33 inches (56 to 84 cm); very pale brown (10YR 7/3) gravelly sandy loam, brown (10YR 4/3) moist; 10 percent clay; moderate medium subangular blocky structure; slightly hard, very friable, nonsticky, nonplastic; few fine roots; common very fine interstitial pores; 20 percent gravel; moderately acid, pH 5.8 by Hellige-Truog; gradual smooth boundary.
- Bw4—33 to 44 inches (84 to 112 cm); very pale brown (10YR 7/3) gravelly sandy loam, brown (10YR 4/3) moist; 8 percent clay; moderate medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; few fine roots; common very fine interstitial pores; 30 percent gravel; strongly acid, pH 5.5 by Hellige-Truog; gradual smooth boundary.
- BC—44 to 66 inches (112 to 168 cm); very pale brown (10YR 7/3) sandy loam, brown (10YR 5/3) moist; 5 percent clay; moderate medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; few fine roots; common very fine interstitial pores; 10 percent gravel; strongly acid, pH 5.5 by Hellige-Truog; abrupt smooth boundary.
- Cdt—66 inches (168 cm); weathered, densic trondhjemite bedrock; 20 percent continuous prominent clay films in cracks.

Type location: Butte County, California; about 2.7 miles southwest of Featherfalls, approximately 600 feet west and 10 feet north of the southeast corner of sec. 27, T. 20 N., R. 6 E.; 39 degrees, 33 minutes, 24 seconds north latitude and 121 degrees, 16 minutes, 50 seconds west longitude; NAD83; USGS Quad: Forbestown, California.

Range in Characteristics

The depth to densic bedrock is 60 to 80 inches (152 to 203 cm) or more. The mean annual soil temperature is 59 to 64 degrees F (15 to 18 degrees C). The particle-size control section averages 8 to 18 percent clay and 20 to 30 percent rock fragments, mostly gravel. Mineralogy is mixed. The content of organic matter is 1 to 2.5 percent to a depth of 7 inches (18 cm) and is less than 1 percent from 7 to 66 inches (18 to 168 cm). Rock fragments on the surface range from 0 to 10 percent gravel.

The A horizon has dry color of 10YR 5/2, 6/2, or 7/2 or 2.5Y 5/3. Moist color is 10YR 3/2, 4/2, 4/3, or 5/3. Texture is gravelly coarse sandy loam, gravelly sandy loam, coarse sandy loam, or sandy loam. The content of clay ranges from 5 to 8 percent. The content of gravel is 2 to 25 percent. Reaction ranges from very strongly acid to slightly acid.

The Bw horizon has dry color of 10YR 6/3, 6/4, 7/3, 7/4, or 8/3; 7.5YR 7/4; or 2.5Y 5/3 or 6/3. Moist color is 10YR 3/3, 4/2, 4/3, 4/4, 5/4, 5/6, or 6/4; 7.5YR 5/4; or 2.5Y 5/3 or 5/4. Texture is gravelly coarse sandy loam, gravelly sandy loam, coarse sandy loam, or sandy loam. The content of clay ranges from 5 to 12 percent. The content of gravel is 5 to 30 percent. Reaction ranges from strongly acid to slightly acid.

The BC horizon has dry color of 10YR 7/3, 7/4, 8/2, 8/3, or 8/4 or 2.5Y 7/3 or 7/4. Moist color is 10YR 5/3, 5/4, 6/3, or 7/4 or 2.5Y 6/4. Texture is sandy loam, gravelly loamy sand, very gravelly loamy coarse sand, loamy sand, coarse sandy loam, or gravelly coarse sandy loam. The content of clay ranges from 1 to 14 percent. The content of gravel is 5 to 55 percent. Reaction ranges from strongly acid to slightly acid.

Dejonah Series

The Dejonah series consists of very deep, well drained soils that formed in tephra-influenced colluvium and residuum derived from metamorphic rocks. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada mountains. Slopes range from 2 to 70 percent. The mean annual precipitation is about 78 inches (1,981 mm), and the mean annual air temperature is about 49 degrees F (9 degrees C).

Taxonomic class: Fine-loamy, mixed, active, frigid Andic Haplohumults

Typical Pedon

Dejonah gravelly loam, on a northeast-facing slope of 30 percent, under a cover of mixed conifers, red fir, and shrubs, at an elevation of 5,051 feet (1,540 m). When described on 7/14/1999, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 2.5 cm); fresh needles and twigs.

A—1 to 4 inches (2.5 to 10 cm); brown (7.5YR 4/4) gravelly loam, dark reddish brown (5YR 3/3) moist; 14 percent clay; weak fine subangular blocky structure parting to single grain; loose, very friable, nonsticky, nonplastic; many very fine and fine and common coarse roots; many very fine irregular pores; 20 percent gravel; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 10.5; abrupt smooth boundary.

Bt1—4 to 10 inches (10 to 25 cm); brown (7.5YR 5/4) loam, dark reddish brown (5YR 3/4) moist; 18 percent clay; moderate medium subangular blocky structure; soft, friable, nonsticky, slightly plastic; common very fine to medium roots; few very fine tubular pores; few faint discontinuous clay films on faces of peds; 5 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 9.5; clear smooth boundary.

2Bt2—10 to 16 inches (25 to 41 cm); brown (7.5YR 5/4) loam, brown (7.5YR 4/4) moist; 21 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few fine and common medium roots; few very fine tubular pores; few faint discontinuous clay films on faces of peds; 5 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 9.5; clear smooth boundary.

2Bt3—16 to 28 inches (41 to 71 cm); light brown (7.5YR 6/4) loam, brown (7.5YR 4/4) moist; 22 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few fine and coarse and common medium roots; common very fine and fine tubular pores; few faint discontinuous clay films on faces of peds and in pores; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 9.5; clear smooth boundary.

2Bt4—28 to 37 inches (71 to 94 cm); light brown (7.5YR 6/4) loam, brown (7.5YR 4/4) moist; 16 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few fine and coarse and common medium roots; many very fine tubular pores; few faint discontinuous clay films on faces of peds and in pores; moderately acid, pH 5.8 by Hellige-Truog; NaF pH 9.0; clear smooth boundary.

2BC1—37 to 53 inches (94 to 135 cm); light yellowish brown (10YR 6/4) sandy loam, dark yellowish brown (10YR 4/4) moist; 12 percent clay; weak fine subangular blocky structure; slightly hard, friable, nonsticky, nonplastic; common fine to medium roots; many very fine and fine tubular pores; 30 percent paragravel; moderately acid, pH 5.8 by Hellige-Truog; NaF pH 9.0; clear wavy boundary.

2BC2—53 to 60 inches (135 to 152 cm); light yellowish brown (10YR 6/4) loam, dark yellowish brown (10YR 4/4) moist; 14 percent clay; moderate fine subangular blocky structure; slightly hard, friable, nonsticky, nonplastic; few medium roots; many very fine and fine tubular pores; 50 percent paragravel; moderately acid, pH 5.8 by Hellige-Truog; NaF pH 9.0.

Type location: Plumas County, California; about 1.6 miles northwest of Camel Peak Lookout, approximately 1,300 feet west and 2,400 feet north of the southeast corner of sec. 30, T. 22 N., R. 8 E.; 39 degrees, 44 minutes, 11.1 seconds north latitude and 121 degrees, 7 minutes, 24.5 seconds west longitude; NAD83; USGS Quad: American House, California.

Range in Characteristics

The depth to paralithic bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 40 to 47 degrees F (4 to 8 degrees C). The soil moisture control section is dry in all parts from about August to October (about 60 days). The particle-size control section averages 18 to 27 percent clay and 5 to 30 percent rock fragments, mostly gravel. Mineralogy is mixed. The content of organic matter is 5 to 17 percent to a depth of 4 inches (10 cm), 2 to 10 percent from 4 to 16 inches (10 to 41 cm), 1 to 2 percent from 16 to 53 inches (41 to 135 cm), and less than 1 percent from 53 to 60 inches (135 to 152 cm). By sum of cations, base saturation ranges from 10 to 25 percent from 1 to 16 inches (2.5 to 41 cm) and is less than 10 percent from 16 to 60 inches (41 to 152 cm). Rock fragments on the surface range from 0 to 10 percent gravel and 0 to 10 percent cobbles. Some pedons have a C horizon.

The A horizon has dry color of 7.5YR 5/3, 5/4, 6/3, 6/4, or 7/4. Moist color is 7.5YR 3/2, 4/3, or 4/4 or 5YR 3/3, 3/4, 4/4, or 4/6. Texture is loam, sandy loam, gravelly loam, gravelly sandy loam, or very gravelly sandy loam. The content of clay ranges from 10 to 18 percent. The horizon has 5 to 40 percent gravel and 0 to 5 percent cobbles. Acid oxalate extractable Al plus $\frac{1}{2}$ Fe ranges from 1.4 to 2.0. P retention ranges from 80 to 85. The content of glass ranges from 5 to 10 percent. NaF pH is 10.0 to 11.5. Reaction ranges from slightly acid to strongly acid.

The Bt1 horizon has dry color of 7.5YR 5/3, 5/4, 6/3, 6/4, 6/6, or 7/6. Moist color is 7.5YR 4/3, 5/4, or 5/6 or 5YR 3/4, 4/3, 4/6, 5/4, or 5/6. Texture is gravelly loam, gravelly sandy loam, or loam. The content of clay ranges from 18 to 25 percent. The horizon has 5 to 20 percent gravel and 0 to 5 percent cobbles. Acid oxalate extractable Al plus $\frac{1}{2}$ Fe ranges from 1.0 to 1.8. P retention ranges from 65 to 85. The content of glass ranges from 2 to 10 percent. NaF pH is 9.5 to 10.5. Reaction ranges from slightly acid to very strongly acid.

The 2Bt horizon has dry color of 7.5YR 5/4, 6/4, 7/4, or 7/6 or 10YR 7/4, 7/6, 8/4, or 8/6. Moist color is 7.5YR 4/4, 5/4, 5/6, or 6/6 or 10YR 4/4, 5/4, 5/6, or 6/6. Texture is loam, gravelly loam, very gravelly loam, gravelly sandy clay loam, or very gravelly sandy clay loam. The content of clay ranges from 15 to 27 percent. The horizon has 0 to 30 percent gravel, 0 to 15 percent cobbles, and 0 to 30 percent paragravel. NaF pH is 9.0 to 10.0. Reaction ranges from slightly acid to very strongly acid.

The 2BC horizon has dry color of 10YR 6/4, 7/6, or 8/6. Moist color is 10YR 4/4 or 6/6 or 7.5YR 6/6 or 6/8. Texture is loam, sandy loam, gravelly loam, or extremely gravelly sandy loam. The content of clay ranges from 8 to 20 percent. The horizon has 0 to 80 percent gravel, 0 to 20 percent cobbles, and 0 to 50 percent paragravel. NaF pH is less than 9.0. Reaction ranges from moderately acid to very strongly acid.

Dixmine Series

The Dixmine series consists of deep, well drained soils that formed in residuum and colluvium derived from metavolcanic rocks. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada mountains. Slopes range from 3 to 70 percent. The mean annual precipitation is about 71 inches (1,803 mm), and the mean annual air temperature is about 53 degrees F (12 degrees C).

Taxonomic class: Clayey-skeletal, parasquic, mesic Typic Haploxerults

Typical Pedon

Dixmine very gravelly loam, on a west-southwest-facing slope of 36 percent, under a cover of Douglas-fir, ponderosa pine, sugar pine, white fir, California black oak, and tanoak, at an elevation of 2,970 feet (905 m). When described on 10/15/1997, the soil was dry to a depth of 17.5 inches (44 cm) and very slightly moist below that depth. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 3 cm); needles, leaves, and twigs.

Oe—1 to 2 inches (3 to 4 cm); partially decomposed needles, leaves, and twigs.

A—2 to 6 inches (4 to 14 cm); reddish yellow (7.5YR 6/6) very gravelly loam, brown (7.5YR 4/4) moist; 24 percent clay; strong fine granular structure; soft, friable, slightly sticky, slightly plastic; many very fine and common fine and medium roots; many very fine to medium and common coarse irregular and tubular pores; noneffervescent; 35 percent gravel; slightly acid, pH 6.2 by pH meter 1:1 water; clear smooth boundary.

Bt1—6 to 11 inches (14 to 29 cm); reddish yellow (7.5YR 6/6) very gravelly loam, brown (7.5YR 4/4) moist; 24 percent clay; strong fine and medium granular structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine to medium roots; many very fine to medium and common coarse irregular and tubular pores; many distinct discontinuous clay films on faces of peds; noneffervescent; 30 percent gravel and 5 percent cobbles; moderately acid, pH 5.9 by pH meter 1:1 water; gradual smooth boundary.

Bt2—11 to 17 inches (29 to 44 cm); reddish yellow (5YR 6/6) gravelly loam, reddish brown (5YR 4/4) moist; 23 percent clay; strong fine and medium granular structure; soft, friable, slightly sticky, slightly plastic; common very fine to medium and few coarse roots; many very fine to medium and common coarse irregular and tubular pores; many distinct discontinuous clay films on faces of peds; noneffervescent; 20 percent gravel and 10 percent cobbles; moderately acid, pH 5.8 by pH meter 1:1 water; clear smooth boundary.

Bt3—17 to 30 inches (44 to 75 cm); reddish yellow (5YR 6/6) very cobbly clay loam, yellowish red (5YR 4/6) moist; 35 percent clay; moderate medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine to medium and few coarse roots; many very fine and fine and common medium tubular pores; many distinct continuous clay films on faces of peds; noneffervescent; 20 percent gravel and 25 percent cobbles; strongly acid, pH 5.5 by pH meter 1:1 water; gradual smooth boundary.

Bt4—30 to 41 inches (75 to 103 cm); reddish yellow (5YR 6/6) very gravelly clay loam, yellowish red (5YR 4/6) moist; 35 percent clay; moderate medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine and fine and common medium tubular pores; many prominent continuous clay films on faces of peds; noneffervescent; 30 percent gravel and 25 percent cobbles; strongly acid, pH 5.4 by pH meter 1:1 water; gradual smooth boundary.

Bt5—41 to 54 inches (103 to 136 cm); reddish yellow (5YR 6/6) extremely cobbly clay loam, yellowish red (5YR 4/6) moist; 28 percent clay; moderate medium subangular blocky structure; soft, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine and fine and common medium tubular pores; many distinct continuous clay films on faces of peds; noneffervescent; 30 percent gravel and 35 percent cobbles; strongly acid, pH 5.3 by pH meter 1:1 water; abrupt wavy boundary.

Cr—54 inches (136 cm); very weathered, moderately cemented metatuff; beds occurring less than 4 inches (10 cm) apart; roots occurring more than 4 inches (10 cm) apart.

Type location: Butte County, California; about 2.1 miles north-northeast of Platte Mountain, approximately 1,500 feet north and 1,500 feet east of the southwest corner of sec. 3, T. 24 N., R. 3 E.; 39 degrees, 57 minutes, 49.77 seconds north latitude and 121 degrees, 37 minutes, 52.52 seconds west longitude; NAD83; USGS Quad: Cohasset, California

Range in Characteristics

The depth to paralithic bedrock is 40 to 60 (102 to 152 cm) inches. The mean annual soil temperature is 50 to 57 degrees F (10 to 14 degrees C). The soil moisture control section is dry in all parts from about July to October (about 90 days). The particle-size control section averages 35 to 40 percent clay and 35 to 60 percent rock fragments, mostly gravel. Mineralogy is parasesquic. Rock fragments on the surface range from 5 to 25 percent gravel, 0 to 10 percent cobbles, and 0 to 10 percent stones.

The A horizon has dry color of 7.5YR 5/4, 6/4, 6/6, or 7/4. Moist color is 7.5YR 3/4 or 4/4 or 5YR 4/3. Texture is very gravelly loam or gravelly loam. The content of clay ranges from 18 to 27 percent. The horizon has 15 to 50 percent gravel and 0 to 5 percent cobbles. The content of organic matter is 4 to 8 percent. Reaction is moderately acid or slightly acid.

The upper part of the Bt horizon has dry color of 7.5YR 5/4, 6/4, 6/6, or 7/6 or 5YR 5/6, 6/4, or 6/6. Moist color is 7.5YR 3/4, 4/4, 4/6, 5/4, or 5/6 or 5YR 4/3, 4/4, or 4/6. Texture is gravelly loam, very gravelly loam, or gravelly clay loam. The content of clay ranges from 20 to 30 percent. The content of gravel is 15 to 35 percent, and the content of cobbles is 0 to 20 percent. The content of organic matter is 2 to 5 percent. Reaction ranges from strongly acid to slightly acid.

The lower part of the Bt horizon has dry color of 7.5YR 5/4, 6/6, or 7/6; 5YR 5/6 or 6/6; or 2.5YR 5/6 or 7/6. Moist color is 7.5YR 5/4, 5/6, or 6/6; 5YR 4/6 or 5/6; or 2.5YR 3/4 or 4/6. Texture is very gravelly clay loam, very cobbly clay loam, or extremely cobbly clay loam. The content of clay ranges from 27 to 40 percent. The content of gravel is 15 to 60 percent, and the content of cobbles is 0 to 35 percent. The content of organic matter is 0.2 to 2 percent. Reaction ranges from very strongly acid to moderately acid.

Dodgeland Series

The Dodgeland series consists of very deep, poorly drained soils that formed in alluvium derived from mixed rock sources. These soils are in overflow channels and flood basins. Slopes range from 0 to 5 percent. The mean annual precipitation is about 19 inches (483 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine, smectitic, thermic Xeric Endoaquerts

Typical Pedon

Dodgeland silty clay loam, on a slope of 1 percent, under a cover of rice stubble, at an elevation of 105 feet (32 m). When described on 9/13/1994, the soil was slightly moist below a depth of 8 inches (20 cm) and moist from 8 to 53 inches (20 to 135 cm). The water table was at a depth of 120 inches (305 cm). (Colors are for dry soil unless otherwise noted).

Ap1—0 to 4 inches (0 to 10 cm); light brownish gray (10YR 6/2) silty clay loam, dark gray (10YR 4/1) moist; 39 percent clay; moderate medium subangular blocky structure parting to moderate fine granular; slightly hard, very friable, moderately sticky, moderately plastic; many fine and common very fine roots; common fine irregular and common very fine tubular pores; common fine prominent strong brown (7.5YR 4/6 moist) irregular oxidized iron masses lining pores; common fine

prominent black (N 2/0 moist) irregularly shaped iron-manganese masses between peds; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.

- Ap2—4 to 8 inches (10 to 20 cm); gray (10YR 5/1) silty clay, very dark grayish brown (10YR 3/2) moist; 41 percent clay; moderate medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; common very fine and fine and few coarse roots; few very fine tubular pores; many medium prominent strong brown (7.5YR 4/6 moist) irregular oxidized iron masses throughout; common fine prominent black (N 2/0 moist) irregular iron-manganese masses between peds; 1 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.
- Bss1—8 to 18 inches (20 to 46 cm); grayish brown (10YR 5/2) silty clay, dark grayish brown (10YR 4/2) moist; 49 percent clay; weak medium prismatic structure parting to moderate fine angular blocky; extremely hard, extremely firm, very sticky, very plastic; few very fine and fine roots; few very fine tubular pores; common fine prominent brown (7.5YR 4/4 moist) irregular oxidized iron masses throughout; common fine prominent black (N 2/0 moist) irregular iron-manganese masses throughout; common fine prominent light brownish gray (10YR 6/2) irregular iron depletions throughout; few slickensides; 1 percent gravel; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.
- Bss2—18 to 33 inches (46 to 84 cm); brown (10YR 5/3) silty clay, dark grayish brown (10YR 4/2) moist; 51 percent clay; weak coarse prismatic structure parting to moderate fine angular blocky; extremely hard, extremely firm, very sticky, very plastic; few very fine and fine roots; few very fine tubular pores; common fine prominent brown (7.5YR 4/4 moist) irregular oxidized iron masses throughout; common fine prominent black (N 2/0 moist) irregular iron-manganese masses throughout; common fine prominent light brownish gray (10YR 6/2 moist) irregular iron depletions lining pores; common slickensides; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.
- Bss3—33 to 45 inches (84 to 114 cm); brown (10YR 5/3) silty clay, brown (10YR 4/3) moist; 49 percent clay; moderate medium angular blocky structure; very hard, very firm, moderately sticky, moderately plastic; few very fine roots; few very fine tubular pores; common fine prominent brown (7.5YR 4/4 moist) irregular oxidized iron masses of throughout; few fine prominent black (N 2/0 moist) iron-manganese masses throughout; common fine prominent light brownish gray (10YR 6/2 moist) irregular iron depletions lining pores; common slickensides; slightly alkaline, pH 7.5 by Hellige-Truog; clear smooth boundary.
- Bkss—45 to 53 inches (114 to 135 cm); light yellowish brown (10YR 6/4) silty clay, brown (10YR 4/3) moist; 41 percent clay; moderate fine angular blocky structure; very hard, very firm, moderately sticky, moderately plastic; few very fine roots; common very fine tubular pores; common fine prominent light brownish gray (10YR 6/2 moist) threadlike iron depletions lining pores; few slickensides; common fine distinct white (10YR 8/2) carbonate concretions between peds and common fine distinct white (10YR 8/2) carbonate threads on faces of peds and in pores; violently effervescent; slightly alkaline, pH 7.5 by Hellige-Truog; abrupt smooth boundary.
- 2Bw1—53 to 60 inches (135 to 152 cm); light yellowish brown (10YR 6/4) silty clay loam, brown (10YR 4/3) moist; 33 percent clay; moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; few very fine roots; few fine and common very fine tubular pores; common fine and medium prominent light brownish gray (10YR 6/2 moist) threadlike iron depletions lining pores; slightly alkaline, pH 7.8 by Hellige-Truog; clear smooth boundary.
- 2Bw2—60 to 70 inches (152 to 178 cm); very pale brown (10YR 7/4) silty clay loam, dark yellowish brown (10YR 4/4) moist; 29 percent clay; moderate medium subangular blocky structure; slightly hard, very friable, nonsticky, slightly plastic;

few very fine roots; common fine tubular pores; common fine and medium prominent light brownish gray (10YR 6/2 moist) threadlike iron depletions lining pores; slightly alkaline, pH 7.8 by Hellige-Truog; gradual smooth boundary.

2Bw3—70 to 80 inches (178 to 203 cm); very pale brown (10YR 7/4) silty clay loam, dark yellowish brown (10YR 4/4) moist; 33 percent clay; moderate medium subangular blocky structure; slightly hard, very friable, nonsticky, slightly plastic; few very fine roots; common very fine and few fine tubular pores; common fine distinct black (N 2/0 moist) irregular manganese masses throughout; slightly alkaline, pH 7.8 by Hellige-Truog.

Type location: Butte County, California; about 5.8 miles southwest of Dayton, approximately 14,620 feet north and 2,050 feet west of the northwest corner of sec. 1, T. 19 N., R. 1 W.; in an unsectionized area in the Llano Seco Land Grant; 39 degrees, 34 minutes, 7 seconds north latitude and 121 degrees, 56 minutes, 12 seconds west longitude; NAD27; USGS Quad: Llano Seco, California.

Range in Characteristics

Depth to the duripan is more than 80 inches (203 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry from May to October 15 (about 165 days). The particle-size control section averages 40 to 60 percent clay. Mineralogy is dominantly smectitic. The content of organic matter is 1 to 2 percent to a depth of 45 inches (114 cm). Reversible, surface-initiated cracks 0.25 to 1 inch wide extend to a depth of 33 inches (84 cm) from June 15 to October 1 (about 105 days) when the soils are not irrigated. Few or common intersecting slickensides occur in the Bss and Bkss horizons, from 8 to 53 inches (20 to 135 cm). A fluctuating water table can occur at a depth of 0 to 60 inches (0 to 152 cm) from December through April. Some pedons have thin strata of sandy loam between the Ap and Bss horizons.

The Ap1 horizon has dry color of 10YR 5/1, 5/2, 6/2, or 6/3. Moist color is 10YR 3/2, 3/3, 4/1, or 4/2. The content of clay ranges from 30 to 40 percent. The content of gravel is 0 to 5 percent. Redoximorphic features occur as oxidized iron masses and iron-manganese masses. Reaction is slightly acid or moderately acid because of applications of fertilizer.

The Ap2 horizon has dry color of 10YR 5/1, 5/2, or 5/3. Moist color is 10YR 3/2, 4/2, or 4/3. Texture is silty clay or clay. The content of clay ranges from 40 to 45 percent. The content of gravel is 0 to 5 percent. Redoximorphic features occur as oxidized iron masses, iron-manganese masses, manganese nodules, and iron depletions. Reaction is slightly acid or neutral.

The Bss horizon has dry color of 10YR 5/2, 5/3, or 6/3. Moist color is 10YR 4/2, 4/3, or 4/4. Texture is silty clay or clay. The content of clay ranges from 45 to 55 percent. The content of gravel is 0 to 5 percent. Redoximorphic features occur as oxidized iron masses, iron-manganese masses, manganese nodules, and iron depletions. Reaction is neutral or slightly alkaline.

The Bkss horizon has dry color of 10YR 6/3, 6/4, 5/3, 4/3, or 4/2. Moist color is 10YR 3/3, 3/4, or 4/3. Texture is silty clay or clay. The content of clay ranges from 40 to 55 percent. Redoximorphic features occur as iron-manganese masses and iron depletions. Electrical conductivity ranges from 0 to 2 mmhos/cm. The content of calcium carbonate is 0 to 1 percent. Reaction is slightly alkaline or moderately alkaline.

The 2Bw horizon has dry color of 10YR 6/4 or 7/4. Moist color is 4/3 or 4/4. Texture is silty clay loam or silt loam. The content of clay ranges from 18 to 35 percent. Redoximorphic features occur as iron-manganese masses and iron depletions. Reaction is slightly alkaline or moderately alkaline.

Doemill Series

The Doemill series consists of shallow, somewhat poorly drained soils that formed in residuum derived from volcanic mudflow breccia. These soils are on mounds and in convex areas on ridgetops and side slopes on volcanic ridges on Cascade foothills. Slopes range from 0 to 30 percent. The mean annual precipitation is about 26 inches (660 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Loamy, mixed, superactive, thermic Lithic Haploxeralfs

Typical Pedon

Doemill gravelly loam, on a west-facing slope of 3 percent, under a cover of annual grasses and forbs, at an elevation of 319 feet (97 m). When described on 3/26/1997, the soil was dry from 0 to 1 inch (0 to 2.5 cm) and slightly moist from 1 to 14 inches (2.5 to 36 cm). (Colors are for dry soil unless otherwise noted.)

A—0 to 1 inch (0 to 2.5 cm); strong brown (7.5YR 5/6) gravelly loam, dark reddish brown (2.5YR 3/4) moist; 19 percent clay; moderate thin and medium platy structure parting to moderate fine subangular blocky; slightly hard, friable, nonsticky, slightly plastic; many very fine and few fine roots; few very fine tubular and common very fine irregular pores; noneffervescent; 15 percent gravel; slightly acid, pH 6.1 by pH meter 1:1 water; clear smooth boundary.

Bt1—1 to 5 inches (2.5 to 13 cm); yellowish red (5YR 5/6) gravelly loam, dark reddish brown (2.5YR 3/4) moist; 23 percent clay; moderate medium subangular blocky structure; moderately hard, firm, slightly sticky, slightly plastic; common very fine and few fine roots; common very fine vesicular and tubular pores; common distinct discontinuous clay films on faces of peds; noneffervescent; 20 percent gravel; neutral, pH 6.8 by pH meter 1:1 water; gradual smooth boundary.

Bt2—5 to 9 inches (13 to 23 cm); yellowish red (5YR 5/6) gravelly loam, dark reddish brown (2.5YR 3/4) moist; 24 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine and few fine roots; common very fine and few fine vesicular and tubular pores; common distinct discontinuous clay films on faces of peds; noneffervescent; 15 percent gravel; neutral, pH 6.7 by pH meter 1:1 water; gradual smooth boundary.

Bt3—9 to 14 inches (23 to 36 cm); yellowish red (5YR 5/6) gravelly loam, dark reddish brown (2.5YR 3/4) moist; 26 percent clay; moderate medium subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; few very fine and fine roots; many very fine and common fine vesicular and tubular pores; common distinct discontinuous clay films on faces of peds; noneffervescent; 20 percent gravel and 10 percent cobbles; neutral, pH 6.7 by pH meter 1:1 water; abrupt smooth boundary.

R—14 inches (36 cm); indurated volcanic mudflow breccia; matted roots on the surface of the bedrock; $\frac{1}{16}$ -inch (2-mm) manganese capping.

Type location: Butte County, California; about 0.7 mile north of Rock Creek Road and about 2.8 miles east of Meridian Road, approximately 1,600 feet south and 750 feet west of the northeast corner of sec. 16, T. 23 N., R. 1 E.; 39 degrees, 51 minutes, 3.57 seconds north latitude and 121 degrees, 51 minutes, 54.65 seconds west longitude; NAD83; USGS Quad: Richardson Springs, California.

Range in Characteristics

The depth to lithic bedrock is 10 to 20 inches (25 to 51 cm). The mean annual soil temperature is 59 to 64 degrees F (15 to 18 degrees C). The soil moisture control section is dry in all parts from about May to October (about 150 to 200 days). The particle-size control section averages 18 to 27 percent clay and 2 to 35 percent rock

fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur between the top of the bedrock and 2 inches (5 cm) below the surface of the soil from November through March. Redoximorphic features, such as iron-manganese masses, occur in the Bt horizon. Also, manganese accumulations occur in layers $\frac{1}{16}$ to $\frac{1}{8}$ inch thick on top of the bedrock. Rock fragments on the surface range from 0 to 20 percent gravel, 2 to 10 percent cobbles, 0 to 10 percent stones, and 0 to 5 percent boulders. Some pedons have an organic mat, $\frac{1}{16}$ inch (2 mm) thick, on the surface.

The A horizon has dry color of 5YR 4/6 or 5/6 or 7.5YR 5/6. Moist color is 2.5YR 3/4; 5YR 3/3, 3/4, 4/3, or 4/4; or 7.5YR 3/3. Texture is loam or gravelly loam. The content of clay ranges from 15 to 24 percent. The horizon has 1 to 15 percent gravel, 0 to 10 percent cobbles, and 0 to 10 percent stones. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 5YR 5/6 or 7.5YR 5/6. Moist color is 2.5YR 3/3 or 3/4 or 5YR 3/3, 3/4, or 4/4. Texture is loam, gravelly loam, cobbly loam, gravelly clay loam, or very gravelly clay loam. The content of clay ranges from 18 to 30 percent. The horizon has 2 to 20 percent gravel, 0 to 20 percent cobbles, and 0 to 10 percent stones. Reaction is slightly acid or neutral.

Dunstone Series

The Dunstone series consists of shallow, well drained soils that formed in residuum and colluvium derived from metavolcanic rocks, mainly greenschist and metasedimentary rocks. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada foothills. Slopes range from 1 to 90 percent. The mean annual precipitation is about 30 inches (762 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Loamy, mixed, superactive, thermic, shallow Ultic Haploxeralfs

Typical Pedon

Dunstone loam, on a west-facing slope of 6 percent, under a cover of annual grasses and forbs, at an elevation of 725 feet (223 m). When described on 7/12/1999, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

- A—0 to 2 inches (0 to 5 cm); brown (7.5YR 5/4) loam, dark brown (7.5YR 3/4) moist; 15 percent clay; moderate very fine and fine subangular blocky structure; slightly hard, very friable, nonsticky, nonplastic; many very fine roots; common very fine tubular pores; 20 percent fine irregular yellowish red (5YR 5/6) oxidized iron masses throughout; 2 percent subangular metavolcanic gravel; very strongly acid, pH 5.0 by Hellige-Truog; abrupt smooth boundary.
- BAt—2 to 7 inches (5 to 18 cm); strong brown (7.5YR 5/6) loam, yellowish red (5YR 4/6) moist; 17 percent clay; moderate fine subangular blocky structure; moderately hard, very friable, slightly sticky, slightly plastic; many very fine roots; many very fine and fine tubular pores; 5 percent discontinuous faint clay films on faces of peds and in pores; 3 percent subangular metavolcanic gravel; slightly acid, pH 6.6 by Hellige-Truog; clear wavy boundary.
- Bt1—7 to 10 inches (18 to 25 cm); strong brown (7.5YR 5/6) loam, yellowish red (5YR 4/6) moist; 22 percent clay; moderate fine subangular blocky structure; moderately hard, very friable, slightly sticky, slightly plastic; many very fine roots; many very fine and fine tubular pores; 10 percent discontinuous faint clay films on faces of peds and in pores; 3 percent subangular metavolcanic gravel; neutral, pH 6.7 by Hellige-Truog; clear wavy boundary.
- Bt2—10 to 16 inches (25 to 41 cm); strong brown (7.5YR 5/6) loam, yellowish red (5YR 4/6) moist; 24 percent clay; moderate medium subangular blocky structure; moderately hard, very friable, slightly sticky, slightly plastic; common very fine

roots; many very fine and fine tubular pores; 10 percent discontinuous faint clay films on faces of peds and in pores; 5 percent subangular metavolcanic gravel; neutral, pH 6.8 by Hellige-Truog; clear wavy boundary.

Cr—16 to 20 inches (41 to 51 cm); moderately cemented, weathered greenschist.

Type location: Butte County, California; about 1.5 miles north of Wyandotte, approximately 2,500 feet south and 1,950 feet east of the northwest corner of sec. 30, T. 19 N., R. 5 E.; 39 degrees, 28 minutes, 33.42 seconds north latitude and 121 degrees, 27 minutes, 20.99 seconds west longitude: NAD83; USGS Quad: Bangor, California.

Range in Characteristics

The depth to paralithic bedrock is 10 to 20 inches (25 to 51 cm). The mean annual soil temperature is 59 to 65 degrees F (15 to 18 degrees C). The soil moisture control section is dry in all parts from about June 1 to October 15 (about 150 days). The particle-size control section averages 18 to 27 percent clay and 3 to 30 percent rock fragments, mostly gravel. The content of silt can be as high as 50 percent. Mineralogy is mixed. Rock fragments on the surface range from 0 to 5 percent cobbles, 0 to 2 percent stones, and 0 to 1 percent boulders. Some pedons have a BCt horizon.

The A horizon has dry color of 7.5YR 4/4, 4/6, 5/4, 5/6, 6/4, or 6/6 or 5YR 4/4 or 4/6. Moist color is 7.5YR 3/3, 3/4, 4/3, or 4/4 or 5YR 3/3, 3/4, or 4/4. Texture is loam, silt loam, gravelly silt loam, or gravelly loam. The content of clay ranges from 12 to 22 percent. The horizon has 0 to 30 percent gravel and 0 to 5 percent cobbles. By sum of cations, base saturation ranges from 60 to 70 percent. The content of organic matter is 1 to 8 percent. Reaction ranges from very strongly acid to slightly acid.

The BA_t horizon has dry color of 7.5YR 5/4 or 5/6 or 5YR 4/6. Moist color is 7.5YR 4/3 or 3/4 or 5YR 3/3, 3/4, 3/6, 4/4, or 4/6. Texture is loam or gravelly loam. The content of clay ranges from 16 to 22 percent. The horizon has 3 to 30 percent gravel and 0 to 5 percent cobbles. By sum of cations, base saturation ranges from 65 to 74 percent. The content of organic matter is 1 to 2 percent. Reaction ranges from moderately acid to neutral.

The upper part of the B_t horizon has dry color of 7.5YR 4/6, 5/4, 5/6, 6/4, or 6/6 or 5YR 4/6 or 5/6. Moist color is 7.5YR 3/4 or 4/4 or 5YR 3/4, 3/6, or 4/4. Texture is loam, gravelly loam, silt loam, gravelly silt loam, clay loam, or gravelly clay loam. The content of clay ranges from 15 to 27 percent. The content of gravel is 0 to 30 percent, and the content of cobbles is 0 to 5 percent. By sum of cations, base saturation ranges from 65 to 75 percent. The content of organic matter is 0.5 to 2 percent. Reaction ranges from moderately acid to neutral.

The lower part of the B_t horizon has dry color of 7.5YR 4/6, 5/6, or 6/6; 5YR 4/6 or 5/6; or 2.5YR 5/6. Moist color is 7.5YR 4/6, 5YR 3/4 or 4/4, or 2.5YR 3/6. Texture is loam, silt loam, gravelly loam, very gravelly loam, clay loam, gravelly clay loam, or very gravelly clay loam. The content of clay ranges from 18 to 35 percent. The content of gravel is 0 to 45 percent, and the content of cobbles is 0 to 5 percent. By sum of cations, base saturation ranges from 74 to 85 percent. The content of organic matter is 0.5 to 2 percent. Reaction ranges from moderately acid to neutral.

Duraquerts

Duraquerts consist of moderately deep, poorly drained soils that formed in alluvium derived from igneous rocks. These soils are in swales on fan terraces. Slopes are 0 to 1 percent. The mean annual precipitation is about 26 inches (660 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Fine, smectitic, thermic Xeric Duraquerts

Typical Pedon

Duraquerts gravelly clay, on a slope of 1 percent, under a cover of annual grasses and forbs, at an elevation of 194 feet (59 m). When described on 4/25/2001, the soil was slightly moist from the surface to 3 inches (0 to 8 cm) and moist from 3 to 23 inches (8 to 58 cm). (Colors are for dry soil unless otherwise noted.)

- A1—0 to 3 inches (0 to 8 cm); very dark gray (10YR 3/1) gravelly clay, very dark grayish brown (10YR 3/2) moist; 45 percent clay; moderate medium subangular blocky structure parting to moderate very fine granular; very hard, very firm, very sticky, very plastic; many very fine roots; common fine irregular pores; 15 percent oxidized iron masses on surfaces along root channels; 2 percent well rounded mixed cobbles and 20 percent well rounded mixed gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.
- A2—3 to 6 inches (8 to 15 cm); dark gray (10YR 4/1) gravelly silty clay, very dark gray (10YR 3/1) moist; 50 percent clay; moderate medium subangular blocky structure parting to moderate very fine granular; extremely hard, extremely firm, very sticky, very plastic; few fine and common very fine roots; few very fine tubular pores; oxidized iron masses; 20 percent well rounded mixed gravel; slightly acid, pH 6.3 by Hellige-Truog; abrupt smooth boundary.
- Bss1—6 to 15 inches (15 to 38 cm); dark gray (10YR 4/1) silty clay, dark grayish brown (10YR 4/2) moist; 55 percent clay; moderate coarse prismatic structure parting to moderate fine angular blocky; extremely hard, extremely firm, very sticky, very plastic; few very fine roots; few very fine tubular pores; 20 percent slickensides; 10 percent well rounded mixed gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.
- Bss2—15 to 21 inches (38 to 53 cm); dark gray (10YR 4/1) silty clay, dark grayish brown (10YR 4/2) moist; 55 percent clay; weak medium angular blocky structure; extremely hard, extremely firm, very sticky, very plastic; few very fine roots; few very fine tubular pores; 10 percent slickensides; 10 percent well rounded mixed gravel; neutral, pH 7.0 by Hellige-Truog; abrupt smooth boundary.
- Bw—21 to 23 inches (53 to 58 cm); brown (10YR 5/3) very gravelly silty clay, brown (10YR 4/3) moist; 55 percent clay; weak fine angular blocky structure; extremely hard, extremely firm, very sticky, very plastic; few very fine roots; few very fine tubular pores; 40 percent very fine irregular manganese masses around rock fragments; 50 percent well rounded mixed gravel; neutral, pH 7.0 by Hellige-Truog; abrupt smooth boundary.
- 2Bq1—23 to 27 inches (58 to 69 cm); weakly cemented duripan; yellow (10YR 7/6) very gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; 10 percent clay; massive; weakly cemented by silica; 50 percent well rounded mixed gravel; abrupt smooth boundary.
- 2Bq2—27 to 32 inches (69 to 81 cm); extremely weakly cemented duripan; yellow (10YR 7/6) extremely gravelly sandy loam, dark yellowish brown (10YR 4/6) moist; 10 percent clay; massive; extremely weakly cemented by silica; 65 percent well rounded mixed gravel; abrupt smooth boundary.
- 2Bq3—32 to 39 inches (81 to 99 cm); very weakly cemented duripan; yellow (10YR 7/6) extremely gravelly sandy loam, dark yellowish brown (10YR 4/6) moist; 10 percent clay; massive; very weakly cemented by silica; 10 percent well rounded mixed cobbles and 60 percent well rounded mixed gravel; abrupt smooth boundary.
- 2Bq4—39 to 60 inches (99 to 152 cm); very weakly cemented duripan; yellow (10YR 7/6) extremely gravelly sandy loam, dark yellowish brown (10YR 4/6) moist; 10 percent clay; massive; very weakly cemented by silica; 10 percent well rounded mixed cobbles and 60 percent well rounded mixed gravel.

Type location: Butte County, California; about 4.5 miles northwest of Oroville, approximately 1,500 feet east and 500 feet north of the southwest corner of sec. 27,

T. 20 N., R. 3 E.; 39 degrees, 33 minutes, 15 seconds north latitude and 121 degrees, 37 minutes, 40 seconds west longitude; NAD83; USGS Quad: Shippee, California.

Range in Characteristics

Depth to the duripan is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The particle-size control section averages 50 to 55 percent clay and 10 to 20 percent rock fragments, mostly gravel. Mineralogy is smectitic. The content of organic matter is 1 to 2 percent in the A horizon and less than 1 percent in the Bss and Bw horizons. Reversible, surface-initiated cracks 1 to 1.5 inches (3 to 4 cm) wide extend to a depth of 21 inches (53 cm) from May to October. Slickensides range from 10 to 20 percent in the Bss horizon, from 6 to 21 inches (15 to 53 cm). A fluctuating water table can occur between the top of the duripan and the surface of the soil from December through May. Rock fragments on the surface range from 0 to 10 percent gravel and 2 to 25 percent cobbles.

The A horizon has dry color of 10YR 3/1, 4/1, or 5/2. Moist color is 10YR 3/1, 3/2, or 4/2. Texture is gravelly clay, gravelly silty clay, or clay. The content of clay ranges from 40 to 50 percent. The horizon has 5 to 20 percent gravel and 0 to 2 percent cobbles. Redoximorphic features range from 15 to 20 percent oxidized iron masses. Reaction is moderately acid or slightly acid.

The Bss horizon has dry color of 10YR 4/1 or 5/2. Moist color is 10YR 4/1 or 4/2. Texture is silty clay or clay. The content of clay ranges from 45 to 55 percent. The horizon has 5 to 10 percent gravel and 0 to 2 percent cobbles. Redoximorphic features range from 0 to 2 percent iron-manganese nodules, 0 to 10 percent oxidized iron masses, and 10 to 35 percent iron-manganese masses. Reaction ranges from slightly acid to moderately alkaline.

The Bw horizon has dry color of 10YR 5/3, 6/3, or 6/4. Moist color is 10YR 4/3, 4/4, or 5/4. Texture is very gravelly silty clay or gravelly clay. The content of clay ranges from 50 to 55 percent. The horizon has 20 to 50 percent gravel and 0 to 10 percent cobbles. Redoximorphic features range from 0 to 2 percent iron-manganese masses and 0 to 2 percent iron-manganese nodules. Reaction ranges from neutral to moderately alkaline.

The 2Bq horizon has dry color of 10YR 7/6. Moist color is 10YR 4/3 or 5/4. Texture is very gravelly or extremely gravelly sandy loam. The content of clay ranges from 5 to 10 percent. The horizon has 50 to 65 percent gravel and 0 to 10 percent cobbles. Redoximorphic features range from 2 to 5 percent manganese surface coatings on top of the horizon. Reaction ranges from neutral to moderately alkaline. Cementation ranges from extremely weak to weak.

Duric Xerarents

Duric Xerarents consist of shallow to deep, moderately well drained to poorly drained, anthropogenic (altered) soils that formed during the process of land-leveling. The cut and fill material (human-altered and human-transported material) is reworked alluvium weathered from igneous and metamorphic rocks. These soils are on anthropogenic-altered intermediate and low terraces. Slopes are 0 to 1 percent. The mean annual precipitation is about 22 inches (559 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Thermic Duric Xerarents

Reference Pedon

Duric Xerarents fine sandy loam, on a slope of less than 1 percent, in a fallowed field, under a cover of annual grasses and forbs, at an elevation of 135 feet (41 m). When

described on 5/28/1992, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

- Ap—0 to 5 inches (0 to 13 cm); brownish yellow (10YR 6/6) fine sandy loam, dark yellowish brown (10YR 4/4) moist; 18 percent clay; moderate very fine and fine subangular blocky structure; loose, very friable, nonsticky, nonplastic; many very fine roots; few very fine tubular pores; 10 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.
- C/Bt/Bqm—5 to 12 inches (13 to 30 cm); brownish yellow (10YR 6/6) and reddish yellow (7.5YR 6/6) very gravelly sandy loam, yellowish brown (10YR 5/4) moist; 12 percent clay; moderate fine angular blocky structure; very hard, firm, nonsticky, nonplastic; brittle; common very fine roots; 5 percent clay films on faces of pedis; 50 percent gravel; up to 20 percent duripan fragments; neutral, pH 7.0 by Hellige-Truog; abrupt irregular boundary.
- 2Bqmb—12 to 19 inches (30 to 46 cm); indurated duripan; yellowish brown (5YR 5/6), cemented extremely gravelly material, dark reddish brown (5YR 3/4) moist; extremely hard, brittle; few very fine roots; 20 percent manganese coatings; 80 percent gravel; slightly alkaline, pH 7.7 by Hellige-Truog.

The reference pedon is an example of the soils within this category. It is not necessarily representative of the soils throughout the survey area. The texture, color, content of rock fragments, and thickness of layers vary considerably from one area to another.

Type location: Butte County, California; about 5.3 miles northwest of Oroville, approximately 2,100 feet north and 1,100 feet east of the southwest corner of sec. 5, T. 19 N., R. 3 E.; 39 degrees, 31 minutes, 47 seconds north latitude and 121 degrees, 39 minutes, 55 seconds west longitude; NAD27; USGS Quad: Shippee, California.

Range in Characteristics

In cut areas depth to the duripan ranges from 4 to 22 inches (15 to 56 cm), and in fill areas it ranges from 24 to 80 inches (61 to 203 cm). The mean annual soil temperature is 61 to 64 degrees F (16 to 18 degrees C). The particle-size control section averages 12 to 50 percent clay and 10 to 50 percent rock fragments, mostly gravel. Mineralogy is mixed or smectitic. Texture varies because of cutting and filling. The content of organic matter is 0 to 2 percent to a depth of 80 inches (203 cm). A fluctuating water table can occur between the surface of the soil and a depth of 80 inches (0 to 203 cm) from December through April. Redoximorphic features, such as manganese coatings and oxidized iron masses, may occur in all horizons. Rock fragments on the surface range from 0 to 10 percent gravel.

The Ap or Ab horizon has dry color of 10YR 5/2, 5/3, 6/3, 6/4, or 6/6. Moist color is 10YR 3/1, 3/2, 3/3, 3/4, 4/2, 4/3, or 4/4 or 7.5YR 4/6. Texture is fine sandy loam, gravelly sandy loam, clay loam, sandy clay loam, sandy loam, clay, loam, or gravelly sandy clay loam. The content of clay ranges from 10 to 45 percent. The content of gravel is 0 to 35 percent. Reaction ranges from strongly acid to neutral.

The C/Bt/Bqm horizon has dry color of 10YR 6/4 or 6/6 or 7.5YR 6/4. Moist color is 10YR 3/3 or 5/4 or 7.5YR 4/2, 3/4, or 4/4. Texture is very gravelly sandy loam, sandy clay loam, sandy clay, or clay. The content of clay ranges from 12 to 55 percent. The content of gravel is 10 to 50 percent. Reaction ranges from neutral to moderately alkaline.

The Bt or Btb horizon, where it occurs, has dry color of 10YR 5/3, 6/3, 6/4, 6/6, or 7/3 or 7.5YR 5/3, 6/3, or 6/4. Moist color is 10YR 3/3, 3/4, 3/6, 4/2, 4/3, 4/4, 5/4, or 5/6 or 7.5YR 3/2, 3/4, 4/2 4/3, 4/4, or 4/6. Texture is very gravelly sandy loam, sandy loam, clay loam, sandy clay loam, sandy clay, or clay. The content of clay ranges from 12 to 55 percent. The content of gravel is 0 to 50 percent. Reaction ranges from slightly acid to moderately alkaline.

The 2Bt horizon, where it occurs, has dry color of 10YR 4/3, 5/4, 6/4, or 6/6 or 7.5YR 6/4. Moist color is 10YR 4/2, 4/4, or 5/4 or 7.5YR 3/4, 4/2, 4/3, 4/4, or 4/6. Texture is sandy clay or clay. The content of clay ranges from 40 to 55 percent. The content of gravel is 0 to 5 percent. Reaction ranges from slightly acid to moderately alkaline.

Durixeralfs

Durixeralfs consist of very shallow to moderately deep, somewhat poorly drained or moderately well drained soils that formed in alluvium derived from basalt. These soils are on mounds and in swales on strath terraces on Cascade foothills and on fan terraces. Slopes range from 0 to 5 percent. The mean annual precipitation is about 25 inches (635 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Durixeralfs

Reference Pedon

Durixeralfs gravelly fine sandy loam, on a slope of 1 percent, under a cover of annual grasses and forbs, at an elevation of 194 feet (59 m). When described on 5/20/1997, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

- A—0 to 1 inch (0 to 3 cm); light brown (7.5YR 6/4) gravelly fine sandy loam, brown (7.5YR 4/3) moist; 15 percent clay; moderate thin platy structure parting to moderate fine subangular blocky; hard, friable, nonsticky, slightly plastic; common very fine roots; few very fine tubular pores; 10 percent very fine irregular strong brown (7.5YR 4/6 dry) oxidized iron masses throughout; 25 percent rounded gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.
- Bt1—1 to 5 inches (3 to 13 cm); brown (7.5YR 5/4) gravelly fine sandy loam, brown (7.5YR 4/3) moist; 18 percent clay; moderate medium subangular blocky structure; hard, friable, slightly sticky, slightly plastic; few very fine roots; few very fine tubular pores; 10 percent clay films on surfaces along pores; 30 percent rounded gravel; moderately acid, pH 6.0 by Hellige-Truog; clear smooth boundary.
- Bt2—5 to 10 inches (13 to 25 cm); brown (7.5YR 5/4) gravelly loam, reddish brown (5YR 4/4) moist; 24 percent clay; moderate fine subangular blocky structure; hard, friable, slightly sticky, slightly plastic; few very fine roots; many very fine tubular pores; 30 percent clay films on faces of peds; 25 percent rounded gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.
- Bt3—10 to 18 inches (25 to 46 cm); light brown (7.5YR 6/4) gravelly loam, reddish brown (5YR 4/3) moist; 26 percent clay; moderate fine subangular blocky structure; hard, friable, slightly sticky, moderately plastic; few very fine roots; many very fine tubular pores; 50 percent clay films on faces of peds; 25 percent rounded gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.
- Bt4—18 to 24 inches (46 to 61 cm); light brown (7.5YR 6/4) very gravelly clay loam, reddish brown (5YR 4/3) moist; 28 percent clay; moderate medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; few very fine roots; many very fine tubular pores; 60 percent clay films on faces of peds; 25 percent well rounded cobbles and 30 percent well rounded gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.
- 2Bt5—24 to 27 inches (61 to 69 cm); pale brown (10YR 6/3) very gravelly sandy clay, brown (10YR 5/3) moist; 45 percent clay; weak fine angular blocky structure; extremely hard, very firm, very sticky, very plastic; few very fine roots; few very fine tubular pores; 30 percent very fine irregular black (N 2/0 dry) manganese

masses throughout; 50 percent rounded gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

3Bqm—27 inches (69 cm); indurated duripan; few very fine roots on top of the horizon; 20 percent very fine irregular black (N 2/0 dry) manganese masses at the top of the horizon; cemented by silica; 10 percent rounded basalt cobbles and 40 percent rounded basalt gravel; discontinuous silica- and manganese-cemented capping $\frac{1}{16}$ to $\frac{1}{8}$ inch thick; rock fragments protruding through the top of the duripan.

The reference pedon is an example of the soils within this category. The properties represented in map units 321 and 377 vary. The particle-size classes represented by this description include fine-loamy, clayey-skeletal, and loamy-skeletal. The subgroups represented include Haplic and Typic.

Type location: Butte County, California; about 3.6 miles northwest of Oroville, approximately 3,150 feet west and 250 feet north of the southeast corner of sec. 34, T. 20 N., R. 3 E.; 39 degrees, 32 minutes, 19 seconds north latitude and 121 degrees, 37 minutes, 31 seconds west longitude; NAD83; USGS Quad: Oroville, California.

Range in Characteristics

Depth to the duripan is 9 to 40 inches (23 to 102 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The particle-size control section averages 24 to 43 percent clay and 30 to 45 percent rock fragments, mostly gravel. Mineralogy is mixed. The content of organic matter is 0 to 1 percent in the A horizon and is less than 1 percent below the A horizon. A fluctuating water table can occur between the top of the duripan and the surface of the soil from December through April. Rock fragments on the surface range from 0 to 20 percent gravel, 0 to 20 percent cobbles, and 0 to 1 percent stones. Some pedons do not have a 2Bt horizon.

The A horizon has dry color of 7.5YR 4/3, 4/4, 5/3, 5/4, or 6/4 or 10YR 4/2, 4/4, 5/3, or 6/3. Moist color is 7.5YR 3/2, 3/3, 4/2, or 4/3 or 10YR 2/2, 3/1, 3/3, 4/2, or 4/3. Texture is gravelly sandy loam, gravelly loam, fine sandy loam, loam, cobbly loam, or gravelly fine sandy loam. The content of clay ranges from 12 to 15 percent. The horizon has 2 to 30 percent gravel and 0 to 10 percent cobbles. Redoximorphic features range from 0 to 60 percent oxidized iron masses and 5 to 10 percent iron-manganese masses. Reaction ranges from strongly acid to slightly acid.

The upper part of the Bt horizon has dry color of 7.5YR 4/4, 5/3, 5/4, 6/4, 4/6, or 5/6 or 10YR 4/2, 4/4, 5/3, 5/4, 6/2, or 6/3. Moist color is 7.5YR 3/3, 4/3, 3/4, or 4/4; 10YR 3/2, 3/3, 4/2, or 4/3; or 5YR 4/3, 3/4, or 4/4. Texture is gravelly fine sandy loam, gravelly loam, gravelly clay loam, gravelly sandy clay loam, fine sandy loam, loam, sandy clay loam, very gravelly loam, cobbly loam, or clay loam. The content of clay ranges from 15 to 30 percent. The content of gravel is 5 to 45 percent, and the content of cobbles is 0 to 15 percent. Redoximorphic features range from 0 to 50 percent oxidized iron masses and 0 to 20 percent iron-manganese masses. Reaction is moderately acid or slightly acid.

The lower part of the Bt horizon has dry color of 7.5YR 4/4, 5/3, 5/4, 5/6, 6/4, 7/4, or 4/6 or 10YR 5/3, 6/3, or 6/4. Moist color is 5YR 4/3 or 3/4; 7.5YR 3/3, 4/3, 3/4, or 4/4; or 10YR 4/3 or 5/3. Texture is very gravelly clay loam, gravelly clay loam, sandy clay loam, clay loam, very cobbly clay loam, or cobbly clay loam. The content of clay ranges from 28 to 38 percent. The content of gravel is 0 to 45 percent, and the content of cobbles is 0 to 25 percent. Redoximorphic features range from 0 to 30 percent oxidized iron masses, 0 to 20 percent iron-manganese masses, and 0 to 15 percent manganese masses. Reaction is moderately acid or slightly acid.

The 2Bt horizon has dry color of 10YR 4/2, 5/2, 5/3, 6/3, or 6/4 or 7.5YR 4/3, 5/3, 5/4, 6/4, or 6/6. Moist color is 10YR 3/2, 4/2, 4/3, or 5/3 or 7.5YR 3/3, 3/4, 4/3, 4/6, or

5/3. Texture is very gravelly sandy clay, very gravelly clay, very gravelly clay loam, gravelly clay, very gravelly silty clay, extremely gravelly clay, extremely gravelly sandy clay, or cobbly clay. The content of clay ranges from 35 to 50 percent. The horizon has 5 to 60 percent gravel and 0 to 25 percent cobbles. Redoximorphic features range from 0 to 50 percent iron-manganese masses, 0 to 10 percent oxidized iron masses, and 0 to 10 percent manganese masses. Reaction is slightly acid or neutral.

The 3Bqm horizon has 25 to 80 percent gravel and 0 to 45 percent cobbles. It ranges from indurated to very weakly cemented. Redoximorphic features range from 5 to 40 percent iron-manganese masses. The horizon is as much as 10 feet thick and overlies sandstone.

Durixerolls

Durixerolls consist of moderately deep, somewhat poorly drained soils that formed in alluvium derived from volcanic rocks. These soils are on alluvial fans. Slopes range from 0 to 2 percent. The mean annual precipitation is about 23 inches (584 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Durixerolls

Typical Pedon

Durixerolls clay loam, on a slope of less than 1 percent, in a disked grain field, at an elevation of 157 feet (48 m). When described on 7/8/1993, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Ap1—0 to 6 inches (0 to 15 cm); brown (10YR 5/3) clay loam, dark brown (10YR 3/3) moist; 35 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common fine and many very fine roots; common fine irregular and few very fine tubular pores; 5 percent very fine oxidized iron masses; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.

Ap2—6 to 12 inches (15 to 30 cm); brown (10YR 5/3) clay loam, dark brown (10YR 3/3) moist; 31 percent clay; moderate fine and medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; few fine and common very fine roots; few very fine and fine tubular pores; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.

Bw1—12 to 24 inches (30 to 61 cm); yellowish brown (10YR 5/4) clay loam, dark brown (10YR 3/3) moist; 31 percent clay; moderate medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; few fine and common very fine roots; few very fine and fine tubular pores; neutral, pH 7.1 by Hellige-Truog; gradual smooth boundary.

Bw2—24 to 33 inches (61 to 84 cm); brown (7.5YR 5/4) clay loam, dark brown (7.5YR 3/4) moist; 31 percent clay; moderate medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; few very fine roots; few very fine and fine tubular pores; 2 percent very fine oxidized iron masses and 5 percent very fine manganese masses; neutral, pH 7.2 by Hellige-Truog; abrupt smooth boundary.

2Bqm—33 inches (84 cm); indurated duripan; cemented by silica; 25 percent fine manganese coatings on top of the duripan.

Type location: Butte County, California; about 1.8 miles north of Nord, approximately 1,535 feet west and 1,215 feet south of the northeast corner of sec. 34, T. 23 N., R. 1 W.; 39 degrees, 48 minutes, 25 seconds north latitude and 121 degrees, 57 minutes, 40 seconds west longitude; NAD27; USGS Quad: Nord, California.

Range in Characteristics

Depth to the duripan is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 60 to 64 degrees F (16 to 18 degrees C). The soil moisture control section is dry in all parts from about June 1 to October 15 (about 130 to 150 days). The particle-size control section averages 27 to 35 percent clay. Mineralogy is mixed. The content of organic matter is 1 to 4 percent to a depth of 12 inches (30 cm) and 0.1 to 1 percent below that depth. A fluctuating water table can occur between the top of the duripan and 12 inches (30 cm) below the surface of the soil from December through April.

The Ap horizon has dry color of 10YR 5/2 or 5/3. Moist color is 10YR 3/2 or 3/3. Texture is loam, clay loam, or silty clay loam. The content of clay ranges from 18 to 40 percent. The content of gravel is 0 to 15 percent. Redoximorphic features range from 0 to 15 percent oxidized iron masses. Reaction ranges from moderately acid to moderately alkaline.

The Bw horizon has dry color of 10YR 5/3 or 5/4 or 7.5YR 5/4 or 6/4. Moist color is 10YR 3/3 or 7.5YR 3/3 or 3/4. Texture is loam, clay loam, silty clay loam, silt loam, or sandy loam. The content of clay ranges from 17 to 35 percent. The content of gravel is 0 to 10 percent. Redoximorphic features range from 0 to 20 percent manganese masses and 0 to 10 percent oxidized iron masses. Reaction ranges from neutral to moderately alkaline.

Dystroxerepts

Dystroxerepts consist of moderately deep or deep, well drained soils that formed in colluvium derived from metavolcanic and metasedimentary rocks. These soils are on backslopes in canyons on Sierra Nevada foothills. Slopes range from 70 to 110 percent. The mean annual precipitation is about 62 inches (1,575 mm), and the mean annual air temperature is about 56 degrees F (13 degrees C).

Taxonomic class: Loamy-skeletal, mixed, active, thermic Typic Dystroxerepts

Typical Pedon

Dystroxerepts, on a west-facing slope of 92 percent, under a cover of canyon live oak, Pacific poison oak, toyon, California laurel, and buckbrush, at an elevation of 1,260 feet (384 m). When described on 6/30/1998, the soil was dry to a depth of 12 inches (30 cm) and slightly moist below that depth. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 3 cm); slightly decomposed plant material; abrupt smooth boundary.

A—1 to 4 inches (3 to 10 cm); very pale brown (10YR 7/3) extremely gravelly loam, brown (10YR 4/3) moist; 26 percent clay; moderate fine and medium subangular blocky structure parting to moderate fine granular; slightly hard, friable, moderately sticky, slightly plastic; many very fine and fine roots; many very fine to coarse irregular and tubular pores; 10 percent cobbles, 15 percent stones, and 40 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

Bt1—4 to 12 inches (10 to 30 cm); very pale brown (10YR 7/4) extremely gravelly clay loam, yellowish brown (10YR 5/4) moist; 30 percent clay; moderate fine subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine to medium tubular and irregular pores; 60 percent discontinuous faint clay films; 15 percent cobbles, 15 percent stones, and 25 percent gravel; moderately acid, pH 6.0 by Hellige-Truog; gradual smooth boundary.

- Bt2**—12 to 22 inches (30 to 56 cm); very pale brown (10YR 7/4) extremely gravelly clay loam, yellowish brown (10YR 5/4) moist; 28 percent clay; moderate fine subangular blocky structure; slightly hard, friable, moderately sticky, slightly plastic; common very fine to coarse roots; many very fine to coarse tubular and irregular pores; 60 percent discontinuous faint clay films; 20 percent cobbles and 40 percent gravel; very strongly acid, pH 5.1 by Hellige-Truog; gradual smooth boundary.
- Bt3**—22 to 28 inches (56 to 71 cm); very pale brown (10YR 7/4) extremely gravelly loam, yellowish brown (10YR 5/4) moist; 27 percent clay; weak fine subangular blocky structure; slightly hard, friable, moderately sticky, slightly plastic; common very fine to medium roots; many very fine and fine tubular and irregular pores; 60 percent discontinuous faint clay films; 30 percent cobbles and 40 percent gravel; strongly acid, pH 5.6 by Hellige-Truog; clear smooth boundary.
- Bt4**—28 to 38 inches (71 to 97 cm); very pale brown (10YR 7/4) extremely cobbly sandy clay loam, yellowish brown (10YR 5/4) moist; 27 percent clay; weak fine subangular blocky structure; slightly hard, friable, moderately sticky, slightly plastic; few very fine to coarse roots; many very fine to medium tubular and irregular pores; 60 percent discontinuous faint clay films; 40 percent gravel and 45 percent cobbles; moderately acid, pH 5.8 by Hellige-Truog; clear wavy boundary.
- R**—38 inches (97 cm); indurated metavolcanic bedrock.

Type location: Butte County, California; about 1.1 miles south of Bear Lake, approximately 200 feet south and 2,000 feet east of the northwest corner of sec. 31, T. 24 N., R. 3 E.; 39 degrees, 54 minutes, 10 seconds north latitude and 121 degrees, 41 minutes, 15 seconds west longitude; NAD83; USGS Quad: Cohasset, California.

Range in Characteristics

The depth to lithic bedrock is 20 to 60 inches (51 to 152 cm). The mean annual soil temperature is 59 to 69 degrees F (15 to 21 degrees C). The soil moisture control section is dry in all parts from about June to November (about 150 days). The particle-size control section averages 17 to 30 percent clay and 50 to 80 percent rock fragments, mostly gravel. Mineralogy is mixed. Rock fragments on the surface range from 10 to 50 percent gravel, 10 to 30 percent cobbles, 10 to 30 percent stones, and 0 to 30 percent boulders.

The A horizon has dry color of 10YR 6/3, 6/4, 7/3, or 7/4. Moist color is 10YR 4/2 or 4/3. Texture is very gravelly loam, extremely gravelly loam, very gravelly fine sandy loam, or extremely gravelly fine sandy loam. The content of clay ranges from 12 to 27 percent. The horizon has 30 to 40 percent gravel, 5 to 15 percent cobbles, 5 to 15 percent stones, and 0 to 10 percent boulders. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 10YR 6/3, 6/4, or 7/4. Moist color is 10YR 4/2, 4/3, 4/4, or 5/4. Texture is extremely gravelly fine sandy loam, extremely gravelly loam, very cobbly fine sandy loam, extremely cobbly fine sandy loam, extremely cobbly sandy clay loam, or extremely gravelly clay loam. The content of clay ranges from 10 to 30 percent. The horizon has 15 to 50 percent gravel, 15 to 50 percent cobbles, 0 to 25 percent stones, and 0 to 5 percent boulders. Reaction ranges from strongly acid to neutral.

Earlal Series

The Earlal series consists of shallow, well drained soils that formed in residuum and colluvium derived from serpentinized ultramafic rocks. These soils are on ridgetops and side slopes on ultramafic Sierra Nevada mountains. Slopes range from 3 to 80 percent. The mean annual precipitation is about 52 inches (1,321 mm), and the mean annual air temperature is about 57 degrees F (14 degrees C).

Taxonomic class: Loamy-skeletal, magnesian, mesic Lithic Haploxeralfs

Typical Pedon

Earlal very gravelly loam, on a south-facing slope of 20 percent, under a cover of foothill pine, whiteleaf manzanita, blue oak, buckbrush, and canyon live oak, at an elevation of 2,305 feet (703 m). When described on 10/19/2000, the soil was dry to a depth of 3 inches (8 cm) and very slightly moist below that depth. (Colors are for dry soil unless otherwise noted.)

- A—0 to 3 inches (0 to 8 cm); brown (7.5YR 5/3) very gravelly loam, dark brown (7.5YR 3/2) moist; 25 percent clay; moderate fine granular structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine and fine and few medium roots; many very fine to medium irregular and tubular pores; 10 percent cobbles and 25 percent gravel; neutral, pH 7.2 by Hellige-Truog; clear smooth boundary.
- Bt1—3 to 7 inches (8 to 18 cm); brown (7.5YR 5/3) very gravelly clay loam, brown (7.5YR 4/2) moist; 34 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; many very fine to medium roots; many very fine to medium tubular pores; 60 percent continuous distinct clay films; 20 percent cobbles and 25 percent gravel; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.
- Bt2—7 to 14 inches (18 to 36 cm); brown (7.5YR 5/4) extremely gravelly clay loam, dark brown (7.5YR 3/3) moist; 37 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; many very fine to medium and common coarse roots; many very fine to medium tubular pores; 80 percent continuous distinct clay films; 35 percent cobbles and 40 percent gravel; neutral, pH 7.0 by Hellige-Truog; abrupt wavy boundary.
- R—14 inches (36 cm); indurated serpentinite bedrock.

Type location: Butte County, California; about 1.12 miles east of Concow School, approximately 1,250 feet north and 550 feet west of the southeast corner of sec. 27, T. 22 N., R. 4 E.; 39 degrees 43 minutes, 47 seconds north latitude and 121 degrees, 30 minutes, 26 seconds west longitude; NAD83; USGS Quad: Cherokee, California.

Range in Characteristics

The depth to lithic bedrock is 10 to 20 inches (25 to 51 cm). The mean annual soil temperature is 57 to 59 degrees F (14 to 15 degrees C). The particle-size control section averages 27 to 35 percent clay and 50 to 70 percent rock fragments, mostly gravel and cobbles. Mineralogy is magnesian. Rock fragments on the surface range from 20 to 50 percent gravel, 20 to 30 percent cobbles, 10 to 20 percent stones, and 5 to 15 percent boulders.

The A horizon has dry color of 7.5YR 5/3, 6/3, or 6/4 or 10YR 6/4. Moist color is 7.5YR 3/2, 3/3, or 3/4 or 10YR 4/3. Texture is very gravelly loam, extremely gravelly loam, very cobbly loam, or very stony loam. The content of clay ranges from 18 to 27 percent. The horizon has 20 to 50 percent gravel, 10 to 25 percent cobbles, 0 to 10 percent stones, and to 0 to 10 percent boulders. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 5YR 5/3, 5/4, or 6/4; 7.5YR 6/4; or 10YR 7/4. Moist color is 5YR 3/3 or 4/2; 7.5YR 3/4, 4/3, 4/4, or 4/6; or 10YR 4/3, 4/4, or 5/4. Texture is very gravelly clay loam, extremely gravelly clay loam, very cobbly clay loam, extremely cobbly clay loam, or very gravelly loam. The content of clay ranges from 24 to 40 percent. The horizon has 20 to 40 percent gravel, 20 to 40 percent cobbles, 0 to 10 percent stones, and to 0 to 10 percent boulders. Reaction is slightly acid or neutral.

Eastbiggs Series

The Eastbiggs series consists of moderately deep, somewhat poorly drained soils that formed in alluvium derived from igneous and metamorphic rocks. These soils are on mounds on low terraces. Slopes range from 0 to 3 percent. The mean annual precipitation is about 22 inches (559 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine, mixed, active, thermic Abruptic Durixeralfs

Typical Pedon

Eastbiggs loam, on a west-facing slope of 2 percent, under a cover of annual grasses and forbs, at an elevation of 90 feet (27 m). When described on 5/11/1992, the soil was dry to a depth of 4 inches (10 cm) and slightly moist below that depth. (Colors are for dry soil unless otherwise noted.)

- A1—0 to 3 inches (0 to 8 cm); strong brown (7.5YR 4/6) loam, dark brown (7.5YR 3/4) moist; 23 percent clay; weak fine subangular blocky structure; hard, friable, slightly sticky, slightly plastic; many very fine roots; few fine and many very fine tubular pores; 10 percent fine black (N 2/0 moist) iron-manganese nodules; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.
- A2—3 to 10 inches (8 to 25 cm); strong brown (7.5YR 4/6) loam, dark brown (7.5YR 3/4) moist; 23 percent clay; weak fine subangular blocky structure; hard, friable, slightly sticky, slightly plastic; common very fine roots; few fine and many very fine tubular pores; 10 percent fine black (N 2/0 moist) manganese masses; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.
- BAt—10 to 17 inches (25 to 43 cm); strong brown (7.5YR 4/6) loam, dark brown (7.5YR 3/4) moist; 26 percent clay; weak fine subangular blocky structure; hard, friable, slightly sticky, slightly plastic; common very fine roots; few fine and many very fine tubular pores; 10 percent fine black (N 2/0 moist) iron-manganese nodules and 15 percent fine black (N 2/0 moist) manganese masses; neutral, pH 7.0 by Hellige-Truog; abrupt smooth boundary.
- 2Bt—17 to 27 inches (43 to 69 cm); brown (7.5YR 5/4) clay, brown (7.5YR 4/4) moist; 50 percent clay; strong coarse prismatic structure; very hard, firm, very sticky, very plastic; common very fine roots; common very fine tubular pores; 2 percent pressure faces; 10 percent fine black (N 2/0 moist) iron-manganese nodules and 15 percent fine black (N 2/0 moist) manganese masses; neutral, pH 7.0 by Hellige-Truog; abrupt smooth boundary.
- 3Bqm1—27 to 34 inches (69 to 86 cm); duripan with indurated laminar capping $\frac{1}{4}$ to $\frac{1}{2}$ inch (6 to 12 mm) thick; strong thin platy structure; very rigid, indurated, cemented by silica; roots matted on top of the capping; black (N 2/0 moist) manganese coatings, $\frac{1}{8}$ inch (3 mm) thick, on top of the laminar capping; abrupt smooth boundary.
- 3Bqm2—34 to 60 inches (86 to 152 cm); duripan; rigid, strongly cemented by silica.

Type location: Butte County, California; about 1.4 miles west of Honcut, approximately 1,450 feet west and 1,500 feet south of the northeast corner of sec. 18, T. 17 N., R. 4 E.; 39 degrees, 19 minutes, 55 seconds north latitude and 121 degrees, 33 minutes, 43 seconds west longitude; NAD27; USGS Quad: Honcut, California.

Range in Characteristics

Depth to the duripan is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 60 to 64 degrees F (16 to 18 degrees C). The soil moisture control section is dry from June to November (170 to 190 days). The particle-size control section averages 35 to 50 percent clay. There is an abrupt boundary at the top of the argillic horizon with an absolute clay increase of at least 15 percent. Mineralogy is

mixed. Redoximorphic features, such as manganese nodules, manganese masses with color of N 2/0 moist, and oxidized iron masses with color of 7.5YR 4/6 or 5/6 moist, occur at a depth of 3 to 34 inches (8 to 86 cm). A fluctuating water table can occur between the top of the duripan and 14 inches (36 cm) below the surface of the soil from December through April. Some pedons have lime in the 2Bt horizon.

The A horizon has dry color of 7.5YR 4/4, 4/6, 5/4, or 6/2 or 10YR 5/4, 6/2, 6/3, or 6/4. Moist color is 7.5YR 3/4 or 4/4 or 10YR 3/2, 3/3, or 3/4. Texture is loam or fine sandy loam. The content of clay ranges from 15 to 27 percent. The content of organic matter is 0.2 to 1 percent. Reaction ranges from moderately acid to neutral.

The BA_t, B_t, or B_{tb} horizon has dry color of 7.5YR 4/6, 5/3, or 6/3 or 10YR 5/4. Moist color is 7.5YR 3/4, 4/3, or 5/3; 10YR 4/3; or 5YR 4/4. Texture is loam, clay loam, or sandy clay loam. The content of clay ranges from 20 to 35 percent. The content of organic matter is 0.1 to 0.5 percent. Reaction is slightly acid or neutral.

The 2B_t horizon has dry color of 7.5YR 4/4, 5/4, 5/6, or 6/4. Moist color is 7.5YR 4/3 or 4/4 or 5YR 4/6. Texture is clay. The content of clay ranges from 40 to 50 percent. The content of organic matter is 0.1 to 0.3 percent. Reaction is neutral.

Edjobe Series

The Edjobe series consists of very deep, poorly drained soils that formed in alluvium derived from mixed rock sources. These soils are on basin rims. Slopes are 0 to 1 percent. The mean annual precipitation is about 21 inches (533 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine, smectitic, thermic Xeric Epiaquerts

Typical Pedon

Edjobe silty clay, on a slope of less than 1 percent, under a cover of weeds in a fallow field, at an elevation of 122 feet (37 m). When described on 7/15/1993, the soil was slightly moist throughout. (Colors are for dry soil unless otherwise noted).

Ap—0 to 8 inches (0 to 20 cm); very dark gray (10YR 3/1) silty clay, black (10YR 2/1) moist; 55 percent clay; strong medium angular blocky structure parting to strong fine granular; extremely hard, firm, very sticky, very plastic; common fine roots; common fine irregular pores; slightly alkaline, pH 7.5 pH by Hellige-Truog; abrupt smooth boundary.

B_{ssg}—8 to 25 inches (20 to 64 cm); dark gray (10YR 4/1) silty clay, very dark gray (10YR 3/1) moist; 55 percent clay; strong very coarse prismatic structure parting to strong medium angular blocky; extremely hard, firm, very sticky, very plastic; few very fine and fine roots; few very fine tubular pores; many slickensides; slightly alkaline, pH 7.5 pH by Hellige-Truog; clear wavy boundary.

B_{kssg}—25 to 32 inches (64 to 81 cm); dark gray (10YR 4/1) silty clay, very dark gray (10YR 3/1) moist; 42 percent clay; strong medium angular blocky structure; extremely hard, firm, very sticky, very plastic; few very fine roots; common very fine tubular pores; many slickensides; few fine round carbonate concretions; common fine spherical and irregular soft masses of carbonate throughout; moderately alkaline, pH 8.0 pH by Hellige-Truog; gradual wavy boundary.

B_{w1}—32 to 48 inches (81 to 122 cm); dark gray (10YR 4/1) silty clay loam, dark grayish brown (10YR 4/2) moist; 37 percent clay; moderate fine and medium angular blocky structure; very hard, firm, sticky, plastic; few very fine roots; common very fine and few medium tubular pores; slightly effervescent throughout; moderately alkaline, pH 8.0 pH by Hellige-Truog; gradual smooth boundary.

2B_{w2}—48 to 60 inches (122 to 152 cm); light brownish gray (10YR 6/2) clay loam, grayish brown (10YR 5/2) moist; 30 percent clay; weak fine and medium angular

blocky structure; hard, firm, moderately sticky, moderately plastic; few very fine roots; common very fine and fine and few medium tubular pores; many fine faint brown (10YR 4/3 moist) irregular soft oxidized iron masses throughout and few fine patchy prominent black (N 2/0 moist) manganese masses on faces of peds; slightly effervescent; moderately alkaline, pH 8.0 pH by Hellige-Truog; gradual smooth boundary.

2Bq—60 to 69 inches (152 to 175 cm); pale brown (10YR 6/3) clay loam, brown (10YR 5/3) moist; 28 percent clay; massive; hard, firm, slightly sticky, slightly plastic; few very fine roots; common fine and very fine and few medium tubular pores; many fine distinct brown (7.5YR 4/4 moist) irregular soft oxidized iron masses throughout; 5 percent weakly cemented durinodes; slightly effervescent throughout; moderately alkaline, pH 8.0 pH by Hellige-Truog; abrupt smooth boundary.

2Bkqm—69 to 75 inches (175 to 190 cm); pale brown (10YR 6/3), moderately cemented duripan, brown (7.5YR 4/4) moist; indurated capping with continuous silica cementation; weak thin platy structure; very rigid, nonsticky, nonplastic; common fine and medium carbonate threads; moderately alkaline, pH 8.0 pH by Hellige-Truog.

Type location: Butte County, California; about 3 miles south of Durham, approximately 5,050 feet west and 4,950 feet south of the intersection of Grainland Road and Durham Nelson Road; in an unsectionized area in the Aquas Frias Land Grant; 39 degrees, 35 minutes, 48 seconds north latitude and 121 degrees, 49 minutes, 2 seconds west longitude; NAD27; USGS Quad: Nelson, California.

Range in Characteristics

Depth to the duripan is 60 to 80 inches (152 to 203 cm). The mean annual soil temperature is 60 to 62 degrees F (16 to 17 degrees C). The soil moisture control section is dry from July to November (120 to 125 days). The particle-size control section averages 40 to 50 percent clay. Mineralogy is smectitic. The soils are calcareous at a depth of 25 to 72 inches (64 to 183 cm). Surface-initiated, reversible cracks 1 to 2 inches (2.54 to 5 cm) wide extend to a depth of 31 inches (79 cm) from about May 15 to October 15 (140 to 160 days) when the soils are not irrigated. Common or many intersecting slickensides occur in the Bssg and Bkssg horizons, from 8 to 50 inches (20 to 127 cm). A fluctuating water table can occur between the top of the duripan and 10 inches (25 cm) below the surface of the soil from December through May. Redoximorphic features, such as a reduced matrix, occur in the overlying basin material, and oxidized iron masses and manganese masses occur in the underlying loamy material. Some pedons do not have gleyed matrix colors. In some pedons, oxidized iron masses, manganese masses, and/or iron-manganese concretions occur in the overlying basin material and iron-manganese concretions occur in the underlying loamy material. Some pedons do not have accumulations of calcium carbonate.

The Ap horizon has dry color of 10YR 3/1, 4/1, 4/2, 5/1, or 5/2. Moist color is 10YR 2/1, 3/1, or 3/2. The content of clay ranges from 40 to 55 percent. Reaction ranges from slightly acid to slightly alkaline.

The Bssg horizon has dry color of 10YR 4/1, 5/1, 5/2, or 4/2. Moist color is 10YR 3/1, 4/1, or 4/2. Texture is silty clay or clay. The content of clay ranges from 40 to 55 percent. Reaction ranges from neutral to moderately alkaline.

The Bkssg horizon has dry color of 10YR 4/1, 5/1, 5/2, or 4/2. Moist color is 10YR 3/1, 4/1, or 4/2. Texture is silty clay or clay. The content of clay ranges from 40 to 50 percent. Reaction is slightly alkaline or moderately alkaline.

The Bw horizon has dry color of 10YR 4/1, 5/1, 5/2, or 4/2. Moist color is 10YR 3/1, 4/1, or 4/2. Texture is silty clay loam or clay loam. The content of clay ranges from 27 to 40 percent. Reaction is slightly alkaline or moderately alkaline.

The 2Bw horizon has dry color of 10YR 6/2 or 4/2. Moist color is 10YR 5/2 or 4/2. Texture is clay loam or loam. The content of clay ranges from 25 to 40 percent. Redoximorphic features, such as oxidized iron masses (10YR 4/4 or 7.5YR 3/4, 4/4, or 4/6 moist), manganese masses (N 2/0 moist), and/or iron-manganese concretions (N 2/0 moist), occur on faces of peds, in pores, and throughout the horizon. Reaction is slightly alkaline or moderately alkaline.

The 2Bq horizon has dry color of 10YR 6/3 or 5/3. Moist color is 10YR 4/3 or 5/3. Texture is clay loam or loam. The content of clay ranges from 25 to 35 percent. Redoximorphic features, such as oxidized iron masses (10YR 4/4 or 7.5YR 3/4, 4/4, or 4/6 moist), manganese masses (N 2/0 moist), and/or iron-manganese concretions (N 2/0 moist), occur on faces of peds, in pores, and throughout the horizon. Rupture resistance ranges from weakly cemented to moderately cemented. Reaction is slightly alkaline or moderately alkaline.

The 2Bkqm horizon has dry color of 10YR 6/3 or 6/4. Moist color is 10YR 4/3 or 4/4 or 7.5YR 4/4. Rupture resistance ranges from indurated to strongly cemented. The horizon has alternating layers that are weakly cemented and moderately cemented with silica and carbonates. Reaction is moderately alkaline.

Elsey Series

The Elsey series consists of moderately deep, somewhat poorly drained soils that formed in residuum weathered from basalt. These soils are on mounds on the top of basalt plateaus on volcanic Sierra Nevada foothills. Slopes range from 2 to 15 percent. The mean annual precipitation is about 35 inches (889 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Oxyaquic Haplohumults

Typical Pedon

Elsey loam, on a north-facing slope of 3 percent, under a cover of annual grasses, at an elevation of 1,330 feet (405 m). When described on 10/18/2000, the soil was moist from 0 to 17 inches (0 to 43 cm) and dry below 17 inches. (Colors are for dry soil unless otherwise noted.)

- A—0 to 3 inches (0 to 8 cm); brown (10YR 5/3) loam, dark brown (7.5YR 3/2) moist; 16 percent clay; weak fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many fine roots throughout; many fine irregular pores; 10 percent subangular basalt gravel; strongly acid, pH 5.5 by Hellige-Truog; clear smooth boundary.
- BAt—3 to 8 inches (8 to 20 cm); brown (10YR 5/3) gravelly loam, dark brown (7.5YR 3/2) moist; 18 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many fine roots throughout; many fine irregular pores; 5 percent patchy faint clay films on surfaces along pores; 15 percent subangular basalt gravel; strongly acid, pH 5.5 by Hellige-Truog; clear smooth boundary.
- Bt1—8 to 17 inches (20 to 43 cm); brown (10YR 4/3) cobbly loam, dark brown (7.5YR 3/2) moist; 24 percent clay; moderate medium subangular blocky structure; slightly hard, firm, slightly sticky, slightly plastic; many fine roots throughout and common medium roots between peds; common fine irregular and tubular pores; 10 percent discontinuous faint clay films on surfaces along pores; 10 percent subangular basalt gravel and 20 percent subangular basalt cobbles; moderately acid, pH 5.8 by Hellige-Truog; clear smooth boundary.
- Bt2—17 to 25 inches (43 to 64 cm); brown (10YR 4/3) cobbly loam, dark brown (7.5YR 3/2) moist; 26 percent clay; moderate medium subangular blocky structure; slightly hard, friable, moderately sticky, slightly plastic; common fine and

few medium roots between peds; common fine irregular and tubular pores; 15 percent discontinuous faint clay films on surfaces along pores; 10 percent subangular basalt gravel and 20 percent subangular basalt cobbles; moderately acid, pH 6.0 by Hellige-Truog; clear wavy boundary.

Bt3—25 to 32 inches (64 to 81 cm); brown (10YR 4/3) very cobbly clay loam, dark brown (7.5YR 3/2) moist; 26 percent clay; moderate medium and fine subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common fine and few very fine roots between peds; few fine tubular pores; 20 percent discontinuous faint clay films on surfaces along pores; 10 percent subangular basalt gravel and 30 percent basalt cobbles; moderately acid, pH 6.0 by Hellige-Truog; clear wavy boundary.

Bt4—32 to 38 inches (81 to 97 cm); brown (10YR 4/3) very cobbly loam, dark brown (7.5YR 3/2) moist; 25 percent clay; moderate fine subangular blocky structure; slightly hard, friable, moderately sticky, slightly plastic; common fine roots between peds; few fine tubular pores; 20 percent discontinuous faint clay films on surfaces along pores; 15 percent subangular basalt gravel and 40 percent basalt cobbles; moderately acid, pH 6.0 by Hellige-Truog; abrupt wavy boundary.

R—38 inches (97 cm); indurated basalt bedrock.

Type location: Butte County, California; about 5 miles north of Oroville, approximately 1,200 feet south and 750 feet west of the northeast corner of sec. 17, T. 20 N., R. 4 E.; 39 degrees, 35 minutes, 41.1 seconds north latitude and 121 degrees, 32 minutes, 31.9 seconds west longitude; NAD83; USGS Quad: Oroville, California.

Range in Characteristics

The depth to lithic basalt bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 61 to 64 degrees F (16 to 18 degrees C). The soil moisture control section is dry in all parts from about May to November (about 150 to 200 days). The particle-size control section averages 24 to 27 percent clay and 15 to 30 percent rock fragments, mostly gravel. Mineralogy is mixed. By sum of cations, base saturation ranges from 1.6 to 7 percent. A fluctuating water table can occur between the top of the bedrock and 15 inches (38 cm) below the surface of the soil from December through April. Rock fragments on the surface range from 5 to 15 percent gravel and 0 to 5 percent cobbles.

The A horizon has dry color of 7.5YR 4/4 or 10YR 3/4, 4/3, 4/4, or 5/3. Moist color is 7.5YR 2/2, 3/2, or 3/3; 10YR 2/2, 3/2, or 3/3; or 5YR 2/2. Texture is loam or gravelly loam. The content of clay ranges from 15 to 22 percent. The horizon has 5 to 15 percent gravel and 0 to 5 percent cobbles. The content of organic matter is 4 to 8 percent. Reaction is strongly acid or moderately acid.

The BA horizon has dry color of 7.5YR 3/4 or 4/4 or 10YR 3/4, 4/4, or 5/3. Moist color is 7.5YR 3/2 or 3/3, 10YR 3/2 or 3/3, or 5YR 3/2. Texture is loam or gravelly loam. The content of clay ranges from 18 to 24 percent. The horizon has 5 to 20 percent gravel and 0 to 10 percent cobbles. The content of organic matter is 3 to 6 percent. Reaction is strongly acid or moderately acid.

The Bt1 and Bt2 horizons have dry color of 7.5YR 4/3 or 4/4 or 10YR 3/4, 4/3, 4/4, 5/3, or 5/4. Moist color is 7.5YR 3/2 or 3/3, 10YR 3/2 or 3/3, or 5YR 3/2. Texture is loam, gravelly loam, or cobbly loam. The content of clay ranges from 19 to 27 percent. The horizons have 5 to 20 percent gravel and 5 to 20 percent cobbles. The content of organic matter is 1 to 3 percent. Reaction is strongly acid or moderately acid.

The Bt3 and Bt4 horizons have dry color of 7.5YR 4/3 or 4/4 or 10YR 3/4, 4/3, or 4/4. Moist color is 7.5YR 3/2, 3/3, or 4/3; 10YR 3/2, 3/3, or 3/4; or 5YR 3/3. Texture is cobbly loam, cobbly clay loam, very cobbly loam, very cobbly clay loam, gravelly loam, gravelly clay loam, or very gravelly clay loam. The content of clay ranges from 25 to 33 percent. The horizons have 5 to 25 percent gravel and 10 to 40 percent

cobbles. The content of organic matter is 0.2 to 1 percent. Reaction is strongly acid or moderately acid.

Endoaquolls

Endoaquolls consist of very deep, poorly drained soils that formed in alluvium derived from volcanic and metamorphic rocks. These soils are in meadows in Sierra Nevada and Cascade mountain valleys. Slopes range from 0 to 8 percent. The mean annual precipitation is about 70 inches (1,778 mm), and the mean annual air temperature is about 50 degrees F (10 degrees C).

Taxonomic class: Endoaquolls

Typical Pedon

Endoaquolls, on a west-facing slope of 3 percent, under a cover of sedges, rushes, forbs, and grasses, at an elevation of 4,236 feet (1,291 m). When described on 11/5/2003, the soil was moist to a depth of 3 inches (8 cm), dry from 3 to 28 inches (8 to 71 cm), and wet below 28 inches (71 cm). (Colors are for dry soil unless otherwise noted.)

- A1—0 to 3 inches (0 to 8 cm); dark grayish brown (10YR 4/2) loam, black (10YR 2/1) moist; 25 percent clay; moderate fine granular structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine and fine and common medium roots; many very fine and fine irregular pores; NaF pH 9.0; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.
- A2—3 to 8 inches (8 to 20 cm); dark grayish brown (10YR 4/2) loam, black (10YR 2/1) moist; 27 percent clay; strong fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine to medium roots; many very fine and fine irregular pores; NaF pH 9.0; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.
- A3—8 to 17 inches (20 to 43 cm); dark grayish brown (10YR 4/2) clay loam, black (10YR 2/1) moist; 29 percent clay; strong fine to coarse subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; many very fine to medium roots; many very fine and fine irregular pores; NaF pH 9.0; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.
- Bw—17 to 28 inches (43 to 71 cm); grayish brown (10YR 5/2) silty clay, very dark grayish brown (10YR 3/2) moist; 40 percent clay; moderate coarse prismatic structure parting to strong medium and coarse angular blocky; very hard, friable, very sticky, very plastic; common very fine to medium roots; many very fine to medium irregular and tubular pores; NaF pH 9.0; slightly acid, pH 6.6 by Hellige-Truog; gradual smooth boundary.
- Ab—28 to 43 inches (71 to 109 cm); dark grayish brown (10YR 4/2) silty clay, black (10YR 2/1) moist; 43 percent clay; moderate medium and coarse subangular blocky structure; very hard, friable, very sticky, very plastic; common very fine to medium roots; many very fine and fine irregular and common very fine tubular pores; neutral, pH 6.8 by Hellige-Truog; clear smooth boundary.
- 2Bg1—43 to 58 inches (109 to 147 cm); light gray (10YR 7/2) loam, dark grayish brown (10YR 4/2) moist; 24 percent clay; weak medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine to medium roots; common very fine and fine irregular and tubular pores; 10 percent medium prominent irregular oxidized iron masses that have sharp boundaries and are on surfaces along root channels; slightly acid, pH 6.6 by Hellige-Truog; clear smooth boundary.
- 2Bg2—58 to 73 inches (147 to 185 cm); light gray (2.5Y 7/2) sandy clay loam, dark grayish brown (2.5Y 4/2) moist; 23 percent clay; weak medium subangular blocky

structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine and fine roots; common very fine and fine tubular and irregular pores; neutral, pH 6.8 by Hellige-Truog.

Type location: Butte County, California; about 1 mile north of Butte Meadows, approximately 2,600 feet east and 1,500 feet south of the northwest corner of sec. 20, T. 26 N., R. 4 E.; 40 degrees, 5 minutes, 47 seconds north latitude and 121 degrees, 32 minutes, 49 seconds west longitude; NAD27; USGS Quad: Butte Meadows, California.

Range in Characteristics

The depth to bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 47 to 50 degrees F (8 to 10 degrees C). The soil moisture control section is dry in all parts from about July to October (about 120 days). The particle-size control section averages 30 to 45 percent clay and 0 to 10 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur from the surface of the soil to a depth of 43 inches (109 cm) from December through June and from a depth of 17 to 87 inches (43 to 220 cm) from July through November. Redoximorphic features, such as low chromas, occur in all horizons. Redoximorphic concentrations are in the lower part of the profile.

The A horizon has dry color of 10YR 4/2 or 2.5Y 5/2 or 6/1. Moist color is 10YR 2/1 or 3/2 or 2.5Y 3/1. Texture is loam, clay loam, silt loam, or fine sandy loam. The content of clay ranges from 16 to 30 percent. The content of gravel is 0 to 5 percent. Reaction is slightly acid or neutral.

The Bw horizon has dry color of 10YR 5/2 or 4/2. Moist color is 10YR 3/2 or 3/1. Texture is clay loam or silty clay. The content of clay ranges from 35 to 50 percent. The content of gravel is 0 to 5 percent. Reaction is neutral.

The Ab horizon has dry color of 10YR 4/2 or 5/2. Moist color is 10YR 2/1 or 3/1. Texture is clay loam or silty clay. The content of clay ranges from 35 to 50 percent. The content of gravel is 0 to 5 percent. Reaction is neutral.

The 2Bg horizon has dry color of 10YR 7/2, 2.5Y 7/2, or 2.5Y 5/1 or 6/1. Moist color is 10YR 4/2 or 2.5Y 4/1 or 4/2. Texture is loam, sandy clay loam, silty clay, or clay loam. The content of clay ranges from 20 to 50 percent. The horizon has 0 to 10 percent gravel and 0 to 10 percent cobbles. Reaction ranges from slightly acid to slightly alkaline.

Esquon Series

The Esquon series consists of deep, poorly drained soils that formed in alluvium derived from mixed rock sources. These soils are in flood basins. Slopes are 0 to 1 percent. The mean annual precipitation is about 20 inches (508 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Fine, smectitic, thermic Xeric Epiaquerts

Typical Pedon

Esquon clay, on a slope of less than 1 percent, under a cover of rice, at an elevation of 107 feet (33 m). When described on 5/3/1995, the soil was moist throughout. (Colors are for dry soil unless otherwise noted.)

Ap—0 to 5 inches (0 to 13 cm); dark grayish brown (10YR 4/2) clay, dark gray (10YR 4/1) moist; 47 percent clay; moderate medium subangular blocky structure parting to weak fine granular; extremely hard, firm, very sticky, very plastic; common very fine and fine roots; many fine irregular pores; common fine irregular brown (7.5YR

4/4 moist) oxidized iron masses; noneffervescent; very strongly acid, pH 4.5 by pH meter 1:1 water; abrupt smooth boundary.

Bssg—5 to 11 inches (13 to 28 cm); dark grayish brown (10YR 4/2) clay, dark gray (10YR 4/1) moist; 45 percent clay; moderate medium prismatic structure parting to weak fine angular blocky; extremely hard, firm, very sticky, very plastic; few very fine and fine roots; few very fine tubular pores; few slickensides; many fine irregular dark brown (7.5YR 3/4 moist) oxidized iron masses, common fine irregular black (2/0 moist) manganese masses, and common fine spherical black (N 2/0 moist) iron-manganese concretions; noneffervescent; slightly acid, pH 6.2 by pH meter 1:1 water; abrupt smooth boundary.

Bss1—11 to 22 inches (28 to 56 cm); dark grayish brown (10YR 4/2) clay, dark grayish brown (10YR 4/2) moist; 44 percent clay; moderate coarse prismatic structure parting to moderate fine angular blocky; extremely hard, firm, very sticky, very plastic; few very fine roots; few very fine tubular pores; few slickensides; common fine irregular dark gray (10YR 4/1 moist) iron depletions, many fine irregular brown (10YR 4/3 moist) oxidized iron masses, common fine irregular brown (7.5YR 4/4 moist) oxidized iron masses, and common fine spherical black (N 2/0 moist) manganese masses; noneffervescent; 1 percent subrounded gravel; neutral, pH 7.3 by pH meter 1:1 water; gradual smooth boundary.

Bss2—22 to 35 inches (56 to 89 cm); brown (10YR 4/3) clay, dark grayish brown (10YR 4/2) moist; 44 percent clay; moderate medium prismatic structure parting to weak fine angular blocky; extremely hard, very firm, very sticky, very plastic; few very fine roots; common very fine tubular pores; few slickensides; common fine threadlike dark gray (10YR 4/1 moist) iron depletions and few fine spherical black (N 2/0 moist) iron-manganese nodules; noneffervescent; 1 percent subrounded gravel; slightly alkaline, pH 7.5 by pH meter 1:1 water; gradual smooth boundary.

Bkss1—35 to 46 inches (89 to 117 cm); brown (10YR 5/3) clay, brown (10YR 4/3) moist; 41 percent clay; weak fine prismatic structure parting to weak fine angular blocky; very hard, firm, very sticky, very plastic; common very fine tubular pores; few slickensides; common fine threadlike gray (10YR 5/1 moist) iron depletions; finely disseminated carbonates; slightly effervescent; 1 percent subrounded gravel; slightly alkaline, pH 7.7 by pH meter 1:1 water; clear smooth boundary.

Bkss2—46 to 50 inches (117 to 127 cm); brown (10YR 5/3) silty clay, brown (10YR 4/3) moist; 42 percent clay; weak fine angular blocky structure; very hard, firm, very sticky, very plastic; common very fine and few fine tubular pores; few slickensides; few fine spherical black (N 2/0 moist) iron-manganese concretions; finely disseminated carbonates; slightly effervescent; slightly alkaline, pH 7.7 by pH meter 1:1 water; abrupt smooth boundary.

Bk—50 to 56 inches (127 to 142 cm); light yellowish brown (10YR 6/4) clay loam, brown (10YR 4/3) moist; 25 percent clay; weak fine subangular blocky structure; rigid, moderately sticky, moderately plastic; common very fine tubular pores; few fine spherical black (N 2/0 moist) iron-manganese concretions; common fine threadlike carbonate masses; slightly effervescent; slightly alkaline, pH 7.7 by pH meter 1:1 water; abrupt smooth boundary.

2Bkqm—56 to 67 inches (142 to 170 cm); moderately cemented duripan; very pale brown (10YR 7/4) loam, brown (10YR 4/3) moist; 18 percent clay; massive; rigid, nonsticky, slightly plastic; common very fine tubular pores; common fine threadlike carbonate masses; strongly effervescent; 5 percent subrounded gravel; moderately alkaline, pH 8.1 by pH meter 1:1 water; $\frac{1}{32}$ -inch (1-mm) platy silica capping on the duripan.

Type location: Butte County, California; about 1.4 miles east of Richvale, approximately 2,150 feet east and 100 feet south of the northwest corner of sec. 23,

T. 19 N., R. 2 E.; 39 degrees, 29 minutes, 36 seconds north latitude and 121 degrees, 43 minutes, 4 seconds west longitude; NAD27; USGS Quad: Biggs, California.

Range in Characteristics

Depth to the duripan is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 62 to 66 degrees F (17 to 19 degrees C). The soil moisture control section is dry from June to October (120 to 125 days). The particle-size control section averages 50 to 55 percent clay. By ammonium acetate, base saturation ranges from 90 to 100 percent throughout the profile. Reversible, surface-initiated cracks 1 to 2 inches (2.54 to 5 cm) wide extend to a depth of 30 to 35 inches (76 to 89 cm) from May 15 to October 15 (150 days) when the soils are not irrigated. The depth to calcium carbonate ranges from 20 to 60 inches (51 to 152 cm). Effervescence ranges from none to strong. Electrical conductivity is less than 1 mmho/cm throughout the profile. Common or many slickensides are in the Bssg, Bss, and Bkss horizons, at a depth of 5 to 50 inches (13 to 127 cm). A fluctuating water table can occur between the top of the duripan and the surface of the soil from December through May. In some areas it can occur between the top of the duripan and the surface of the soil from November through June and from the top of the duripan to a depth of 36 inches (91 cm) from July through October. Redoximorphic features, such as manganese nodules, oxidized iron masses with color of 7.5YR 4/6 moist, manganese masses with color of N 2/0 moist, iron depletions with color of 10YR 4/1 or 5/1 moist, and a reduced matrix with chroma of 2 or less, occur in the horizons above the duripan. Some pedons have overwash of silt loam, silty clay loam, or stratified very fine sandy loam to silt loam. The overwash ranges from 6 to 12 inches (15 to 51 cm) in thickness and has a clay content of 12 to 40 percent.

The Ap or Ab horizon has dry color of 10YR 3/1, 4/1, 4/2, 5/1, or 5/2. Moist color is 10YR 3/1 or 3/2. Texture is clay or silty clay. The content of clay ranges from 40 to 60 percent. The content of organic matter is 1 to 2.5 percent. Reaction ranges from very strongly acid to neutral.

The Bssg and Bss horizons have dry color of 10YR 4/1, 4/2, or 5/2. Moist color is 10YR 3/1 or 3/2. Texture is silty clay or clay. The content of clay ranges from 40 to 60 percent. The content of gravel is 0 to 2 percent. The content of organic matter is 0.4 to 1 percent. Reaction ranges from slightly acid to moderately alkaline.

The Bkss horizon has dry color of 10YR 5/3 or 6/3. Moist color is 10YR 3/3 or 4/3. Texture is silty clay or clay. The content of clay ranges from 40 to 60 percent. The content of gravel is 0 to 2 percent. The content of organic matter is 0.1 to 0.5 percent. Reaction ranges from neutral to moderately alkaline.

The Bk horizon has dry color of 10YR 5/3 or 4/3. Moist color is 10YR 3/3 or 4/3. Texture is silty clay, clay loam, or silty clay loam. The content of clay ranges from 25 to 60 percent. The content of organic matter is 0.1 to 0.5 percent. Reaction is slightly alkaline or moderately alkaline.

The 2Bkqm horizon has dry color of 10YR 5/3 or 4/3. Moist color is 10YR 4/3. Rupture resistance ranges from indurated to strongly cemented. The horizon has alternating layers that are weakly cemented and moderately cemented with silica and lime. Reaction is moderately alkaline.

Fallager Series

The Fallager series consists of very shallow, poorly drained soils that formed in alluvium derived from volcanic rocks. These soils are in swales on strath terraces on Cascade foothills and on fan terraces in the Sacramento Valley. Slopes range from 0 to 3 percent. The mean annual precipitation is about 26 inches (660 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Clayey, mixed, superactive, thermic, shallow Typic Durixeralfs

Typical Pedon

Fallager loam, on a south-facing slope of 1 percent, under a cover of goldfields, navarretia, ryegrass, brodiaea, Mediterranean barley, cowbag clover, popcorn flowers, and tarweed, at an elevation of 237 feet (72 m). When described on 3/27/2001, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 1 inch (0 to 3 cm); light reddish brown (5YR 6/3) loam, reddish brown (5YR 4/3) moist; 25 percent clay; moderate fine and medium subangular blocky structure; hard, friable, slightly sticky, slightly plastic; many very fine roots; many very fine and fine tubular pores; 40 percent medium irregular oxidized iron masses along faces of peds; 5 percent cobbles and 5 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

Bt1—1 to 3 inches (3 to 8 cm); reddish yellow (5YR 6/6) gravelly clay loam, reddish brown (5YR 4/3) moist; 35 percent clay; moderate fine and medium subangular blocky structure; very hard, friable, moderately sticky, moderately plastic; common very fine roots; common very fine tubular pores; 60 percent continuous distinct clay films; 15 percent fine spherical manganese masses throughout; 10 percent cobbles and 15 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.

2Bt2—3 to 7 inches (8 to 18 cm); reddish brown (5YR 5/3) gravelly clay, reddish brown (5YR 4/3) moist; 43 percent clay; moderate fine and medium subangular blocky structure; very hard, friable, very sticky, very plastic; common very fine roots; common very fine and fine tubular pores; 80 percent continuous distinct clay films; 15 percent fine irregular manganese masses throughout; 10 percent cobbles and 15 percent gravel; neutral, pH 6.7 by Hellige-Truog; abrupt smooth boundary.

3Bqm—7 inches (18 cm); very strongly cemented duripan; cemented by silica; 10 percent medium platy manganese masses at the top of the horizon; 20 percent cobbles and 60 percent gravel; slightly alkaline, pH 7.5 by Hellige-Truog.

Type location: Butte County, California; about 1.1 miles east of the intersection of Highway 99 and Highway 149, approximately 1,350 feet south and 600 feet west of the northeast corner of sec. 6, T. 20 N., R. 3 E.; 39 degrees, 37 minutes, 18 seconds north latitude and 121 degrees, 40 minutes, 18 seconds west longitude; NAD83; USGS Quad: Shippee, California.

Range in Characteristics

Depth to the duripan is 4 to 10 inches (10 to 25 cm). The duripan is underlain by volcanic sediments or volcanic sandstone and tuff. The mean annual soil temperature is 62 to 65 degrees F (17 to 18 degrees C). The particle-size control section averages 35 to 40 percent clay and 10 to 35 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur between the top of the duripan and the surface of the soil from November through March. Redoximorphic features occur as oxidized iron and iron-manganese masses in the A, Bt, and 2Bt horizons and as an iron-manganese capping 1 to 3 mm thick on top of the 3Bqm horizon. Rock fragments on the surface range from 0 to 10 percent gravel and 0 to 25 percent cobbles.

The A horizon has dry color of 7.5YR 5/3, 6/4, or 6/6 or 5YR 6/3. Moist color is 7.5YR 4/3 or 5/4 or 5YR 4/3. Texture is loam, gravelly loam, cobbly loam, cobbly clay loam, or gravelly silty clay loam. The content of clay ranges from 20 to 30 percent. The horizon has 5 to 15 percent gravel and 0 to 10 percent cobbles. Reaction is slightly acid.

The Bt horizon has dry color of 7.5YR 5/3, 5/4, or 6/4 or 5YR 4/3, 5/4, or 6/6. Moist color is 5YR 3/3, 4/3, or 4/4 or 7.5YR 4/3. Texture is gravelly clay loam, clay loam,

cobbly clay loam, or silty clay loam. The content of clay ranges from 35 to 40 percent. The horizon has 5 to 15 percent gravel and 0 to 10 percent cobbles. Reaction is slightly acid or neutral.

The 2Bt horizon has dry color of 7.5YR 5/3 or 5/4, 5YR 5/3, or 10YR 5/3. Moist color is 5YR 4/3, 7.5YR 4/3, or 10YR 5/2. Texture is clay, gravelly clay, or very gravelly clay. The content of clay ranges from 40 to 60 percent. The horizon has 10 to 30 percent gravel and 0 to 15 percent cobbles. Reaction ranges from neutral to moderately alkaline.

Farwell Series

The Farwell series consists of very deep, moderately well drained soils that formed in alluvium derived from mixed rock sources. These soils are on flood plains. Slopes range from 0 to 2 percent. The mean annual precipitation is about 22 inches (559 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Fluventic Haploxerepts

Typical Pedon

Farwell clay loam, on a slope of less than 1 percent, under a cover of beans, at an elevation of 145 feet (44 m). When described on 10/24/1988, the soil was moist below a depth of 10 inches (25 cm). (Colors are for dry soil unless otherwise noted.)

- Ap—0 to 5 inches (0 to 13 cm); brown (10YR 5/3) clay loam, very dark grayish brown (10YR 3/2) moist; 29 percent clay; moderate very fine subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; few very fine roots; many very fine and fine irregular pores; 2 percent fine gravel; slightly alkaline, pH 7.7 by pH meter 1:1 water; abrupt smooth boundary.
- ABt—5 to 9 inches (13 to 23 cm); grayish brown (10YR 5/2) clay loam, dark grayish brown (10YR 4/2) moist; 29 percent clay; moderate fine subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; few very fine roots; many very fine tubular pores; few thin clay films on faces of peds; 2 percent fine gravel; slightly alkaline, pH 7.5 by pH meter 1:1 water; clear smooth boundary.
- Bt1—9 to 18 inches (23 to 46 cm); dark grayish brown (10YR 4/2) clay loam, very dark grayish brown (10YR 3/2) moist; 29 percent clay; moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; few very fine roots; many very fine and common fine tubular pores; common thin clay films on faces of peds; 2 percent fine gravel; slightly alkaline, pH 7.4 by pH meter 1:1 water; clear smooth boundary.
- Bt2—18 to 26 inches (46 to 66 cm); brown (10YR 5/3) clay loam, dark brown (10YR 3/3) and very dark brown (10YR 2/2) moist; 27 percent clay; moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; few very fine roots; many very fine and common fine tubular pores; 2 percent fine gravel; common thin clay films on faces of peds; neutral, pH 7.2 by pH meter 1:1 water; clear smooth boundary.
- Bt3—26 to 33 inches (66 to 84 cm); brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; 28 percent clay; moderate fine subangular blocky structure; slightly hard, friable, sticky, slightly plastic; few very fine roots; many very fine and common fine tubular pores; common thin clay films on faces of peds; 2 percent fine gravel; neutral, pH 7.3 by pH meter 1:1 water; clear smooth boundary.
- 2Btb1—33 to 43 inches (84 to 109 cm); light yellowish brown (10YR 6/4) clay loam, brown (10YR 4/3) moist; 35 percent clay; weak medium prismatic structure parting to moderate fine angular blocky; slightly hard, friable, sticky, plastic; few very fine and common fine roots; many very fine and few fine and medium tubular

pores; nearly continuous thin clay films on faces of peds; 2 percent fine gravel; neutral, pH 7.3 by pH meter 1:1 water; clear smooth boundary.

2Btb2—43 to 57 inches; (109 to 145 cm) light yellowish brown (10YR 6/4) clay loam, brown (10YR 4/3) moist; 34 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine roots; few very fine tubular pores; common thin clay films on faces of peds; 2 percent fine gravel; slightly alkaline, pH 7.6 by pH meter 1:1 water; clear smooth boundary.

2Btb3—57 to 72 inches (145 to 183 cm); dark grayish brown (10YR 4/2) clay loam, very dark grayish brown (10YR 3/2) moist; 31 percent clay; massive; slightly hard, friable, slightly sticky, slightly plastic; few very fine roots; few very fine tubular pores; few thin clay films on faces of peds; 2 percent fine gravel; slightly alkaline, pH 7.5 by pH meter 1:1 water; clear smooth boundary.

3Bwb—72 to 81 inches (183 to 205 cm); dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; 20 percent clay; massive; slightly hard, friable, slightly sticky, slightly plastic; few very fine roots; few very fine tubular pores; few thin clay films on faces of peds; 2 percent fine gravel; slightly alkaline, pH 7.6 by pH meter 1:1 water.

Type location: Butte County, California; about 0.2 mile south of Wilson Landing Road, about 2 miles east of the west end of the road, approximately 175 feet south of the fourth power pole south of the road, 1,000 feet south and 2,500 feet west of the northwest corner of sec. 3, T. 22 N., R. 1 W.; in an unsectioned area in the Bosquejo Land Grant; 39 degrees, 47 minutes, 42 seconds north latitude and 121 degrees, 0 minutes, 2 seconds west longitude; NAD27; USGS Quad: Nord, California.

Range in Characteristics

Depth to the buried soil is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 60 to 62 degrees F (16 to 17 degrees C). The soil moisture control section is dry from about May 15 to October 31 (approximately 150 to 180 days). The particle-size control section averages 27 to 35 percent clay. Mineralogy is mixed. The content of organic matter decreases irregularly with increasing depth. The content of rock fragments is 0 to 5 percent. In some pedons the soils have no clay films.

The A or Ap horizon has dry color of 10YR 4/2, 4/3, 5/2, 5/3, or 6/3. Moist color is 10YR 2/2, 3/2, 3/3, or 4/3 or 7.5YR 3/2, 3/3, or 3/4. Texture is clay loam, loam, or silt loam. The content of clay ranges from 12 to 35 percent. The content of gravel is 0 to 2 percent. The content of organic matter is 1 to 2.5 percent. Reaction ranges from slightly acid to slightly alkaline.

The ABt horizon, the Bw horizon (where it occurs), and the Bt horizon have dry color of 10YR 5/2, 5/3, or 5/4 or 7.5YR 4/2 or 5/2. Moist color is 10YR 3/2, 3/3, or 4/3 or 7.5YR 3/2, 3/3, or 3/4. Texture is clay loam, silty clay loam, loam, or silt loam. The content of clay ranges from 20 to 35 percent. The content of gravel is 0 to 3 percent. The content of organic matter is 1 to 2.5 percent. Reaction ranges from neutral to moderately alkaline.

The 2Btb or Btb horizon has dry color of 10YR 3/2, 4/2, 5/2, or 5/3 or 7.5YR 5/2. Moist color is 10YR 3/2, 3/3, or 4/3 or 7.5YR 3/2, 3/3, or 3/4. Texture is clay loam or silty clay loam. The content of clay ranges from 27 to 40 percent. The content of gravel is 0 to 5 percent. The content of organic matter is 0.1 to 2 percent. Reaction is neutral or slightly alkaline.

The 3Bwb horizon, where it occurs, has dry color of 10YR 3/2, 4/2, 5/2, or 5/3 or 7.5YR 5/2. Moist color is 10YR 3/2, 3/3, 4/3, 4/4, or 5/4 or 7.5YR 3/2, 3/3, or 3/4. Texture is loam, silt loam, clay loam, or silty clay loam. The content of clay ranges from 20 to 30 percent. The content of gravel is 0 to 5 percent. The content of organic matter is 0.1 to 2 percent. The horizon is noneffervescent or slightly effervescent. Reaction is neutral or slightly alkaline.

Featherfalls Series

The Featherfalls series consists of very deep, well drained soils that formed in residuum and colluvium derived from coarse grained intrusive igneous rocks, mainly trondhjemite and quartz diorite. These soils are on ridgetops and side slopes on granitic Sierra Nevada mountains. Slopes range from 2 to 70 percent. The mean annual precipitation is about 58 inches (1,473 mm), and the mean annual air temperature is about 55 degrees F (13 degrees C).

Taxonomic class: Fine-loamy, mixed, active, mesic Ultic Palexeralfs

Typical Pedon

Featherfalls sandy loam, on a northwest-facing slope of 28 percent, under a cover of conifers, hardwoods, and shrubs, at an elevation of 2,840 feet (866 m). When described on 7/14/1998, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

- Oi—0 to 1 inch (0 to 3 cm); slightly decomposed leaves, needles, and twig litter; abrupt smooth boundary.
- A1—1 to 4 inches (3 to 10 cm); pale brown (10YR 6/3) sandy loam, brown (7.5YR 4/3) moist; 14 percent clay; moderate fine subangular blocky structure; slightly hard, firm, slightly sticky, slightly plastic; many very fine roots; many very fine irregular pores; 10 percent subangular gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 9.0; abrupt smooth boundary.
- A2—4 to 7 inches (10 to 18 cm); very pale brown (10YR 7/4) sandy loam, brown (7.5YR 5/4) moist; 18 percent clay; moderate fine subangular blocky structure; slightly hard, firm, slightly sticky, moderately plastic; common fine and medium roots; many very fine irregular pores; 2 percent mica flakes; 10 percent subrounded gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 9.8; clear smooth boundary.
- Bt1—7 to 17 inches (18 to 43 cm); light brown (7.5YR 6/4) sandy clay loam, strong brown (7.5YR 4/6) moist; 24 percent clay; moderate medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; common fine and medium and few coarse roots; common very fine tubular pores; 5 percent discontinuous prominent clay films on faces of peds and in pores; 10 percent mica flakes; 10 percent subrounded gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 9.8; gradual smooth boundary.
- Bt2—17 to 24 inches (43 to 61 cm); reddish yellow (7.5YR 7/6) sandy clay loam, yellowish red (5YR 4/6) moist; 29 percent clay; moderate medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; few medium and coarse roots; common very fine tubular pores; 60 percent discontinuous prominent clay films on faces of peds and in pores; 10 percent fine irregular black (N 2/0) iron-manganese masses; 20 percent mica flakes; 5 percent subrounded gravel; moderately acid, pH 6.0 by Hellige-Truog; NaF pH 10.0; gradual smooth boundary.
- Bt3—24 to 32 inches (61 to 81 cm); reddish yellow (7.5YR 7/6) sandy clay loam, yellowish red (5YR 5/6) moist; 30 percent clay; moderate medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; few fine and medium roots; common very fine tubular pores; 60 percent discontinuous prominent clay films on faces of peds and in pores; 25 percent mica flakes; 5 percent subrounded gravel; moderately acid, pH 6.0 by Hellige-Truog; gradual smooth boundary.
- Bt4—32 to 42 inches (81 to 107 cm); reddish yellow (7.5YR 7/6) sandy clay loam, strong brown (7.5YR 4/6) moist; 33 percent clay; moderate medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; few fine and

medium roots; common very fine tubular pores; 50 percent discontinuous prominent clay films on faces of peds and in pores; 25 percent mica flakes; moderately acid, pH 6.0 by Hellige-Truog; gradual smooth boundary.

BCt1—42 to 61 inches (107 to 155 cm); reddish yellow (7.5YR 7/6) paracobbly sandy clay loam, strong brown (7.5YR 4/6) moist; 34 percent clay; moderate medium subangular blocky structure; hard, very firm, moderately sticky, moderately plastic; few fine and medium roots; few very fine tubular pores; 80 percent continuous prominent clay films on faces of peds and in pores; 25 percent mica flakes; 33 percent paracobbles; moderately acid, pH 6.0 by Hellige-Truog; gradual smooth boundary.

BCt2—61 to 72 inches (155 to 183 cm); reddish yellow (7.5YR 7/6) paracobbly sandy clay loam, strong brown (7.5YR 4/6) moist; 33 percent clay; weak medium subangular blocky structure; hard, very firm, moderately sticky, moderately plastic; few fine and medium roots; few very fine tubular pores; 60 percent continuous prominent clay films on faces of peds and in pores; 10 percent mica flakes; 33 percent paracobbles; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.

Crt—72 to 80 inches (183 to 203 cm); pink (7.5YR 8/4) very paragravelly sandy clay loam, brown (7.5YR 5/4) moist; 25 percent clay; massive parting to weak medium subangular blocky structure; hard, very firm, slightly sticky, slightly plastic; few fine and medium roots; few very fine tubular pores; 50 percent discontinuous prominent clay films on faces of peds and in pores; 10 percent mica flakes; 45 percent paragravel; moderately acid, pH 6.0 by Hellige-Truog; rock structure is evident; slakes in water.

Type location: Butte County, California; about 0.8 mile north of Feather Falls, approximately 750 feet east and 200 feet north of the southeast corner of sec. 12, T. 20 N., R. 6 E.; 39 degrees, 36 minutes, 22 seconds north latitude and 121 degrees, 15 minutes, 26 seconds west longitude; NAD83; USGS Quad: Forbestown, California.

Range in Characteristics

The depth to paralithic bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 53 to 59 degrees F (12 to 15 degrees C). The particle-size control section averages 20 to 27 percent clay and 0 to 25 percent rock fragments, mostly gravel. Mineralogy is mixed. NaF pH is less than 9.0 to 10.0 throughout the profile. Rock fragments on the surface range from 0 to 10 percent gravel and 0 to 25 percent boulders.

The A horizon has dry color of 10YR 5/3, 5/4, 6/3, 6/4, 7/2, 7/3, 7/4, or 8/3 or 7.5YR 6/4. Moist color is 10YR 3/2, 3/3, 4/2, 4/3, 4/4, 5/2, 5/4, or 6/4 or 7.5YR 3/3, 4/2, 4/3, 4/4, or 5/4. Texture is sandy loam, coarse sandy loam, loam, sandy clay loam, or gravelly coarse sandy loam. The content of clay ranges from 8 to 23 percent. The content of gravel is 0 to 30 percent. The content of organic matter is 1 to 4 percent. Reaction ranges from strongly acid to slightly acid.

The Bt horizon has dry color of 10YR 7/3, 7/4, 7/6, 8/3, or 8/4; 7.5YR 6/4, 6/6, or 7/6; or 5YR 5/4, 5/6, or 6/6. Moist color is 10YR 5/3, 5/4, 5/6, 6/6, or 7/4; 7.5YR 4/3, 4/4, 4/6, 5/6, 6/6, or 5/8; 5YR 4/4, 4/6, 5/6, or 5/8; or 2.5YR 4/6, 5/6, or 5/8. Texture is sandy clay loam, clay loam, loam, sandy loam, or gravelly sandy clay loam. The content of clay ranges from 16 to 33 percent. The content of gravel is 0 to 30 percent. The content of organic matter is 0.1 to 1.5 percent. Reaction ranges from strongly acid to neutral.

The BCt horizon has dry color of 10YR 8/4 or 7.5YR 5/4, 6/6, 7/6, or 8/2. Moist color is 10YR 7/6, 7.5YR 4/6 or 7/6, or 5YR 4/4 or 5/6. Texture is sandy clay loam, sandy clay, or paracobbly sandy clay loam. The content of clay ranges from 25 to 38 percent. The horizon has 0 to 10 percent gravel and 5 to 35 percent paracobbles. The

content of organic matter is 0 to 0.2 percent. Reaction is moderately acid or slightly acid.

The Crt horizon has dry color of 7.5YR 8/4 or 10YR 8/4. Moist color is 7.5YR 5/4 or 10YR 7/6. Texture is sandy clay loam, sandy loam, very paragravelly sandy clay loam, extremely paragravelly loamy coarse sand, or loamy coarse sand. The content of clay ranges from 2 to 27 percent. The content of paragravel is 0 to 70 percent. Reaction ranges from very strongly acid to moderately acid.

Fernandez Series

The Fernandez series consists of very deep, moderately well drained soils that formed in alluvium derived from metamorphic and igneous rocks. These soils are on intermediate terraces. Slopes range from 0 to 9 percent. The mean annual precipitation is about 24 inches (610 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, active, thermic Ultic Palexeralfs

Typical Pedon

Fernandez sandy loam, on a west-facing slope of 1 percent, under a cover of annual grasses and forbs, at an elevation of 190 feet (58 m). When described on 4/30/1997, the soil was dry to a depth of 18 inches (46 cm) and slightly moist from 18 to 73 inches (46 to 185 cm). (Colors are for dry soil unless otherwise noted.)

- A—0 to 2 inches (0 to 5 cm); brown (7.5YR 5/4) sandy loam, dark reddish brown (5YR 3/4) moist; 18 percent clay; strong thin platy structure parting to moderate fine subangular blocky; slightly hard, friable, nonsticky, slightly plastic; many very fine roots; few very fine tubular pores; 10 percent well rounded gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.
- Bt1—2 to 6 inches (5 to 15 cm); yellowish red (5YR 5/6) sandy clay loam, dark red (2.5YR 3/6) moist; 24 percent clay; strong medium subangular blocky structure; extremely hard, friable, slightly sticky, moderately plastic; common very fine roots; few very fine tubular pores; 10 percent clay films on all faces of peds; 10 percent well rounded gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.
- Bt2—6 to 18 inches (15 to 46 cm); yellowish red (5YR 5/6) sandy clay loam, dark reddish brown (2.5YR 3/4) moist; 28 percent clay; moderate medium subangular blocky structure parting to strong fine granular; slightly hard, firm, slightly sticky, moderately plastic; few very fine and fine roots; few fine and common very fine tubular pores; 10 percent clay films on faces of peds; 10 percent well rounded gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt wavy boundary.
- 2Bt3—18 to 28 inches (46 to 71 cm); red (2.5YR 5/6) clay loam, dark reddish brown (2.5YR 3/4) moist; 38 percent clay; strong medium angular blocky structure; extremely hard, very firm, moderately sticky, very plastic; few very fine and fine roots; common very fine tubular pores; 40 percent clay films on faces of peds; 10 percent well rounded gravel; moderately acid, pH 6.0 by Hellige-Truog; clear smooth boundary.
- 2Bt4—28 to 44 inches (71 to 112 cm); red (2.5YR 5/6) clay loam, reddish brown (2.5YR 4/4) moist; 38 percent clay; strong medium angular blocky structure; extremely hard, very firm, moderately sticky, very plastic; few fine roots; few fine and common very fine tubular pores; 50 percent clay films on faces of peds; 5 percent well rounded gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.
- 2Bt5—44 to 57 inches (112 to 145 cm); red (2.5YR 5/6) clay, dark red (2.5YR 3/6) moist; 42 percent clay; strong medium angular blocky structure; extremely hard,

- very firm, moderately sticky, very plastic; few very fine roots; few very fine tubular pores; 60 percent clay films on faces of peds; 5 percent fine distinct threadlike iron depletions having diffuse boundaries and lining pores; 10 percent well rounded gravel; moderately acid, pH 6.0 by Hellige-Truog; clear smooth boundary.
- 2Bt6—57 to 65 inches (145 to 165 cm); red (2.5YR 5/6) gravelly clay, dark red (2.5YR 3/6) moist; 45 percent clay; strong medium subangular blocky structure; extremely hard, very firm, moderately sticky, very plastic; few very fine roots; few very fine tubular pores; 40 percent clay films on faces of peds; 5 percent fine distinct threadlike iron depletions having diffuse boundaries and lining pores; 20 percent well rounded gravel; moderately acid, pH 6.0 by Hellige-Truog; clear wavy boundary.
- 2Bt7—65 to 73 inches (165 to 185 cm); red (10R 5/6) gravelly clay loam, dark red (10R 3/6) moist; 37 percent clay; strong medium subangular blocky structure; extremely hard, very firm, moderately sticky, very plastic; few very fine roots; few very fine tubular pores; 30 percent clay films on faces of peds; 20 percent very coarse distinct irregular iron depletions that have diffuse boundaries and are around rock fragments; 25 percent well rounded gravel; slightly acid, pH 6.2 by Hellige-Truog; abrupt wavy boundary.
- 3Btq—73 to 85 inches (185 to 216 cm); duripan; yellowish red (5YR 5/6) gravelly sandy loam, dark reddish brown (5YR 3/4) moist; 5 percent clay; massive; extremely hard, very firm, weakly cemented by silica, nonsticky, nonplastic; few very fine tubular pores; 20 percent clay films on rock fragments; 20 percent fine mica flakes throughout; 20 percent well rounded gravel; slightly acid, pH 6.2 by Hellige-Truog; does not slake in water after 2 hours; about 75 percent weakly cemented and 25 percent moderately cemented.

Type location: Butte County, California; about 6.43 miles southeast of Nelson, approximately 500 feet west and 2,700 feet south of the northeast corner of sec. 8, T. 19 N., R. 3 E.; 39 degrees, 30 minutes, 59 seconds north latitude and 121 degrees, 39 minutes, 8 seconds west longitude; NAD83; USGS Quad: Shippee, California.

Range in Characteristics

Depth to a weakly cemented or moderately cemented duripan ranges from 60 to 80 inches (152 to 205 cm) or more, and depth to the 2Bt horizon ranges from 18 to 49 inches (46 to 124 cm). The mean annual soil temperature is 61 to 64 degrees F (16 to 18 degrees C). The particle-size control section averages 20 to 35 percent clay and 0 to 20 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur between the top of the duripan and 40 inches (102 cm) below the surface of the soil from December through April. Rock fragments on the surface range from 2 to 15 percent gravel.

The A horizon has dry color of 7.5YR 5/4, 5/6, or 6/4. Moist color is 5YR 3/3, 3/4, or 4/3 or 7.5YR 3/4 or 4/4. Texture is sandy loam, fine sandy loam, gravelly sandy loam, or gravelly loam. The content of clay ranges from 15 to 18 percent. The content of gravel is 5 to 20 percent. The content of organic matter is 0.5 to 1.2 percent. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 5YR 5/6 or 6/6 or 7.5YR 6/4 or 6/6. Moist color is 2.5YR 3/4, 3/6, or 4/4; 5YR 3/4 or 4/4; or 7.5YR 3/4 or 4/4. Texture is sandy clay loam, gravelly sandy clay loam, loam, clay loam, or sandy loam. The content of clay ranges from 18 to 30 percent. The content of gravel is 5 to 33 percent. Redoximorphic features range from 0 to 20 percent soft oxidized iron masses and 0 to 5 percent soft manganese masses. The content of organic matter is 0.1 to 0.5 percent. Reaction ranges from moderately acid to neutral.

The 2Bt horizon has dry color of 2.5YR 4/8 or 5/6, 10R 5/6, 5YR 5/6 or 6/6, or 7.5YR 5/4, 6/6, or 7/6. Moist color is 2.5YR 3/4, 3/6, 4/4, or 4/6; 10R 3/6 or 4/6; 5YR 4/6; or 7.5YR 4/4 or 4/6. Texture is clay loam, clay, sandy clay, gravelly clay, or very

gravelly sandy clay. The content of clay ranges from 35 to 50 percent. The content of gravel is 2 to 45 percent. Redoximorphic features range from 0 to 5 percent iron depletions, 0 to 15 percent soft oxidized iron masses, and 0 to 10 percent soft manganese masses. The content of organic matter is 0.1 to 0.5 percent. Reaction ranges from moderately acid to neutral.

Flagcanyon Series

The Flagcanyon series consists of moderately deep, moderately well drained soils that formed in alluvium derived from basalt. These soils are on alluvial fans on Table Mountain. Slopes range from 2 to 5 percent. The mean annual precipitation is about 28 inches (711 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Loamy-skeletal, mixed, superactive, thermic Haplic Durixeralfs

Typical Pedon

Flagcanyon gravelly loam, on a west-facing slope of 4 percent, under a cover of olive trees, at an elevation of 380 feet (116 m). When described on 7/16/2001, the soil was dry to a depth of 30 inches (76 cm) and moist from 30 to 65 inches (76 to 165 cm). (Colors are for dry soil unless otherwise noted.)

- A—0 to 3 inches (0 to 8 cm); brown (10YR 4/3) gravelly loam, dark brown (10YR 3/3) moist; 18 percent clay; moderate fine subangular blocky structure; hard, friable, slightly sticky, slightly plastic; many very fine roots; many fine irregular pores; 10 percent subrounded cobbles and 20 percent subrounded basalt gravel; very strongly acid, pH 5.1 by Hellige-Truog; clear smooth boundary.
- Bt1—3 to 9 inches (8 to 23 cm); brown (10YR 4/3) very gravelly loam, dark yellowish brown (10YR 3/4) moist; 25 percent clay; moderate medium and coarse subangular blocky structure; hard, firm, slightly sticky, moderately plastic; common fine and medium roots between peds; common fine and medium irregular pores; 20 percent discontinuous faint clay films on surfaces along pores; 10 percent subrounded basalt cobbles and 30 percent subrounded basalt gravel; strongly acid, pH 5.5 by Hellige-Truog; clear wavy boundary.
- Bt2—9 to 14 inches (23 to 36 cm); dark yellowish brown (10YR 4/4) very gravelly loam, dark yellowish brown (10YR 3/4) moist; 27 percent clay; moderate medium and coarse subangular blocky structure; hard, firm, moderately sticky, moderately plastic; common very fine to coarse roots between peds; common very fine to medium and few coarse tubular pores; 30 percent discontinuous distinct clay films on surfaces along pores; 10 percent subrounded basalt cobbles and 40 percent subrounded basalt gravel; moderately acid, pH 6.0 by Hellige-Truog; clear wavy boundary.
- 2Bt3—14 to 30 inches (36 to 76 cm); dark yellowish brown (10YR 4/4) very gravelly clay loam, dark yellowish brown (10YR 3/4) moist; 30 percent clay; moderate medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; common fine and medium roots around fragments; common fine and medium irregular pores; 40 percent discontinuous distinct clay films on surfaces along pores; 20 percent subrounded basalt cobbles and 40 percent subrounded basalt gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt wavy boundary.
- 3Btq1—30 to 53 inches (76 to 135 cm); duripan; yellowish brown (10YR 5/4) extremely gravelly sandy clay loam, dark yellowish brown (10YR 4/4) moist; 34 percent clay; moderate medium angular blocky structure; very hard, very firm, moderately cemented by silica, moderately sticky, moderately plastic; common very fine and fine roots around fragments; few fine irregular pores; 60 subrounded

basalt cobbles and 50 percent subrounded basalt gravel; neutral, pH 6.8 by Hellige-Truog; abrupt wavy boundary.

3Btq2—53 to 65 inches (135 to 165 cm); duripan; yellowish brown (10YR 5/4) extremely gravelly sandy clay, 40 percent dark yellowish brown (10YR 4/6) and 60 percent dark yellowish brown (10YR 4/4) moist; 36 percent clay; moderate medium angular blocky structure; very hard, very firm, moderately cemented by silica, moderately sticky, moderately plastic; few very fine roots around fragments; few very fine irregular pores; 45 percent continuous distinct clay films on rock fragments; 20 percent subrounded basalt cobbles and 60 percent subrounded basalt gravel; neutral, pH 7.0 by Hellige-Truog.

Type location: Butte County, California; about 6.1 miles northwest of Oroville, approximately 1,000 feet east and 1,400 feet south of the northwest corner of sec. 14, T. 20 N., R. 3 E.; 39 degrees, 35 minutes, 34 seconds north latitude and 121 degrees, 36 minutes, 31 seconds west longitude; NAD83; USGS Quad: Oroville, California.

Range in Characteristics

Depth to the duripan is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The particle-size control section averages 27 to 35 percent clay and 35 to 60 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur between the top of the duripan and 11 inches (28 cm) below the surface of the soil from December through April. Redoximorphic features, such as soft manganese masses with color of N 2/0, occur in the Bt and 2Bt horizons. Rock fragments on the surface range from 0 to 10 percent gravel and 0 to 15 percent cobbles.

The A horizon has dry color of 10YR 4/3 or 7.5YR 4/3 or 5/3. Moist color is 10YR 3/2 or 3/3 or 7.5YR 3/2 or 3/3. Texture is gravelly loam, loam, or fine sandy loam. The content of clay ranges from 15 to 22 percent. The horizon has 0 to 20 percent gravel and 0 to 10 percent cobbles. The content of organic matter is 4 to 8 percent. Reaction ranges from strongly acid to slightly acid.

The Bt horizon has dry color of 10YR 4/3, 4/4, or 5/3; 7.5YR 4/3, 4/4, or 5/3; or 5YR 4/4. Moist color is 10YR 3/4; 7.5YR 3/4, 4/2, 4/3, or 4/4; or 5YR 3/4. Texture is very gravelly loam, very gravelly clay loam, extremely gravelly clay loam, or gravelly loam. The content of clay ranges from 22 to 60 percent. The horizon has 15 to 60 percent gravel and 0 to 30 percent cobbles. The content of organic matter is 1 to 4 percent. Reaction ranges from strongly acid to neutral.

The 2Bt horizon has dry color of 10YR 4/3, 4/4, or 5/3; 7.5YR 4/3 or 4/4; or 5YR 4/4. Moist color is 10YR 3/4 or 4/3, 7.5YR 3/4 or 4/3, or 5YR 3/4. Texture is very gravelly clay loam, extremely gravelly clay loam, or extremely gravelly clay. The content of clay ranges from 35 to 50 percent. The horizon has 40 to 60 percent gravel and 0 to 20 percent cobbles. The content of organic matter is 1 to 2 percent. Reaction ranges from moderately acid to neutral.

The 3Btq horizon has dry color of 10YR 5/4, 5/6, 8/4, or 8/6 or 7.5YR 4/4. Moist color is 10YR 4/4, 4/6, or 7/6 or 7.5YR 3/4. Texture is extremely gravelly sandy clay loam or extremely gravelly sandy clay. The content of clay ranges from 22 to 50 percent. The horizon has 45 to 60 percent gravel and 20 to 40 percent cobbles. The horizon is slightly cemented or moderately cemented. The content of organic matter is 0.2 to 1 percent. Reaction ranges from neutral to moderately alkaline.

Flagcanyon Taxadjunct

The Flagcanyon taxadjunct consists of moderately deep, moderately well drained soils that formed in alluvium derived from basalt. These soils are on mounds on fan terraces. Slopes range from 0 to 5 percent. The mean annual precipitation is about 26

inches (660 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Haplic Durixeralfs

Typical Pedon

Flagcanyon taxadjunct fine sandy loam, on a southwest-facing slope of 2 percent, under a cover of annual grasses and forbs, at an elevation of 342 feet (104 m). When described on 5/8/2001, the soil was dry to a depth of 7 inches (0 to 18 cm), slightly moist from 7 to 31 inches (18 to 79 cm), and dry from 31 to 63 inches (79 to 160 cm). (Colors are for dry soil unless otherwise noted.)

A—0 to 3 inches (0 to 8 cm); brown (7.5YR 4/3) fine sandy loam, dark brown (7.5YR 3/2) moist; 18 percent clay; moderate thick platy structure parting to moderate fine subangular blocky; slightly hard, friable, slightly sticky, nonplastic; many very fine roots; many very fine irregular pores; 10 percent very fine irregular oxidized iron masses throughout; 10 percent mixed gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.

Bt1—3 to 7 inches (8 to 18 cm); brown (7.5YR 4/3) loam, dark brown (7.5YR 3/2) moist; 24 percent clay; moderate medium subangular blocky structure; hard, friable, slightly sticky, slightly plastic; common very fine roots; few fine tubular pores; 15 percent discontinuous distinct clay films on faces of peds; 10 percent mixed gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.

Bt2—7 to 16 inches (18 to 41 cm); brown (7.5YR 4/3) clay loam, dark reddish brown (5YR 3/2) moist; 29 percent clay; moderate medium subangular blocky structure; hard, firm, slightly sticky, moderately plastic; common very fine roots; common fine, few medium, and many very fine tubular pores; 40 percent discontinuous distinct clay films on faces of peds; 10 percent mixed gravel; moderately acid, pH 6.0 by Hellige-Truog; clear wavy boundary.

2Bt3—16 to 23 inches (41 to 58 cm); brown (10YR 5/3) very gravelly clay, brown (10YR 4/3) moist; 45 percent clay; moderate fine subangular blocky structure; very hard, very firm, very sticky, very plastic; few very fine roots; common very fine tubular pores; 60 percent continuous prominent clay films on faces of peds; 40 percent very fine irregular manganese masses throughout; 5 percent basalt cobbles and 50 percent basalt gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual wavy boundary.

2Bt4—23 to 31 inches (58 to 79 cm); light yellowish brown (10YR 6/4) extremely gravelly clay, dark yellowish brown (10YR 4/4) moist; 50 percent clay; moderate fine subangular blocky structure; very hard, very firm, extremely weakly cemented, moderately sticky, very plastic; few very fine roots; few very fine tubular pores; 80 percent continuous prominent clay films on faces of peds; 30 percent very fine irregular manganese masses around rock fragments; 5 percent basalt cobbles and 50 percent basalt gravel; neutral, pH 7.0 by Hellige-Truog; clear wavy boundary.

3Bq—31 to 63 inches (79 to 160 cm); extremely weakly cemented duripan; very pale brown (10YR 7/4) extremely gravelly sand, yellowish brown (10YR 5/4) moist; 2 percent clay; extremely weakly cemented by silica; 30 percent very fine irregular manganese masses around rock fragments; 20 percent basalt cobbles and 65 percent basalt gravel; neutral, pH 7.0 by Hellige-Truog;

Type location: Butte County, California; about 3.8 miles northwest of Oroville, approximately 350 feet west and 2,100 feet south of the northeast corner of sec. 26, T. 20 N., R. 3 E.; 39 degrees, 33 minutes, 42 seconds north latitude and 121 degrees, 35 minutes, 50 seconds west longitude; NAD83; USGS Quad: Oroville, California.

Range in Characteristics

Depth to the duripan is 20 to 40 inches (51 to 102 cm). Depth to an indurated duripan is more than 40 inches (102 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The particle-size control section averages 28 to 35 percent clay and 20 to 35 percent rock fragments, mostly gravel. Mineralogy is mixed. The content of organic matter is 0.5 to 1.5 percent in the A horizon and is less than 1 percent in the Bt and 2Bt horizons. A fluctuating water table can occur at a depth of 16 to 40 inches (41 to 102 cm) from December through April. Rock fragments on the surface range from 0 to 5 percent gravel.

The A horizon has dry color of 7.5YR 4/3 or 10YR 4/3, 4/4, or 5/3. Moist color is 7.5YR 3/2 or 3/3. Texture is fine sandy loam, loam, or gravelly fine sandy loam. The content of clay ranges from 15 to 18 percent. The content of gravel is 5 to 20 percent. Redoximorphic features range from 0 to 10 percent oxidized iron masses. Reaction is moderately acid.

The Bt horizon has dry color of 7.5YR 4/3 or 5/3 or 10YR 4/4 or 5/3. Moist color is 7.5YR 3/2, 3/3, or 4/3 or 5YR 3/2. Texture is loam, clay loam, gravelly loam, or gravelly clay loam. The content of clay ranges from 24 to 32 percent. The content of gravel is 5 to 30 percent. Reaction ranges from strongly acid to slightly acid.

The 2Bt horizon has dry color of 10YR 5/3, 6/3, or 6/4 or 7.5YR 5/3 or 5/4. Moist color is 10YR 4/3, 4/4, 5/3, or 5/4; 7.5YR 4/3; or 5YR 4/4. Texture is very gravelly clay, very gravelly clay loam, extremely gravelly sandy clay, or extremely gravelly clay. The content of clay ranges from 35 to 50 percent. The horizon has 45 to 65 percent gravel and 0 to 20 percent cobbles. Redoximorphic features range from 0 to 40 percent manganese masses. Reaction ranges from moderately acid to neutral.

The 3Bq horizon has dry color of 10YR 7/4 or 7.5YR 6/3. Moist color is 10YR 5/4 or 5/6 or 7.5YR 4/3. Texture is extremely gravelly sand or extremely gravelly coarse sand. The content of clay ranges from 2 to 5 percent. The horizon has 60 to 65 percent gravel and 10 to 20 percent cobbles. Redoximorphic features range 30 to 60 percent manganese masses. Reaction is slightly acid or neutral. Cementation ranges from extremely weak to strong.

The Flagcanyon taxadjunct in map unit 377 is a taxadjunct because it has a fine-loamy particle-size control section, whereas the Flagcanyon series is loamy-skeletal. The main limitation is depth to the duripan. The difference does not significantly affect the use, management, or interpretations of the soil.

Flanly Series

The Flanly series consists of moderately deep, well drained soils that formed in colluvium and residuum derived from intrusive igneous rocks, mainly quartz diorite. These soils are on ridgetops and side slopes on Sierra Nevada foothills. Slopes range from 2 to 50 percent. The mean annual precipitation is about 35 inches (889 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, active, thermic Ultic Haploxeralfs

Typical Pedon

Flanly loam, on a north-facing slope of 8 percent, under a cover of blue oak and scattered foothill pine, whiteleaf manzanita, wild oat, annual fescue, and soft chess, at an elevation of 1,800 feet (549 m). When described on 6/11/2002, the soil was slightly moist below the surface layer. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); yellowish brown (10YR 5/4) loam, dark brown (10YR 3/3) moist; 14 percent clay; moderate very fine and fine subangular blocky structure; soft, very friable, nonsticky, slightly plastic; many very fine roots

throughout; many very fine and fine tubular pores; 5 percent fine spherical oxidized iron masses between peds; 3 percent subangular gravel; strongly acid, pH 5.5 by Hellige-Truog; abrupt smooth boundary.

BA—2 to 5 inches (5 to 13 cm); dark yellowish brown (10YR 4/6) sandy loam, dark yellowish brown (10YR 3/4) moist; 15 percent clay; moderate very fine and fine subangular blocky structure; soft, very friable, nonsticky, slightly plastic; many very fine roots throughout; many very fine and fine tubular pores; 5 percent fine threadlike and 10 percent fine spherical oxidized iron masses; 3 percent subangular gravel; moderately acid, pH 6.0 by Hellige-Truog; clear smooth boundary.

Bt1—5 to 10 inches (13 to 25 cm); dark yellowish brown (10YR 4/6) sandy loam, dark yellowish brown (10YR 3/4) moist; 18 percent clay; strong very fine and fine subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; few fine and medium and many very fine roots throughout; many very fine and fine tubular pores; 10 percent patchy faint clay films on faces of peds; 2 percent subangular gravel; moderately acid, pH 6.1 by Hellige-Truog; clear wavy boundary.

Bt2—10 to 23 inches (25 to 58 cm); strong brown (7.5YR 4/6) sandy clay loam, dark brown (7.5YR 3/4) moist; 23 percent clay; strong fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; few fine and coarse and many very fine roots throughout; many very fine and fine tubular pores; 15 percent patchy distinct clay films on faces of peds; 5 percent subangular gravel; moderately acid, pH 6.1 by Hellige-Truog; clear wavy boundary.

Crt—23 to 26 inches (58 to 66 cm); moderately cemented quartz diorite bedrock; few very fine roots throughout; 15 percent patchy distinct clay films.

Type location: Butte County, California; about 2 miles northwest of Rackerby, approximately 2,500 feet north and 600 feet east of the southwest corner of sec. 31, T. 19 N., R. 6 E.; 39 degrees, 27 minutes, 38 seconds north latitude and 121 degrees, 21 minutes, 00 seconds west longitude; NAD83; USGS Quad: Rackerby, California.

Range in Characteristics

The depth to paralithic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 59 to 63 degrees F (15 to 17 degrees C). The soil moisture control section is dry in all parts from about June through October (about 165 days). The particle-size control section averages 22 to 30 percent clay and 4 to 23 percent rock fragments, mostly gravel. Mineralogy is mixed. Rock fragments on the surface range from 0 to 5 percent gravel, 0 to 3 percent cobbles, and 0 to 10 percent stones.

The A horizon has dry color of 10YR 4/4, 5/2, 5/3, 5/4, 5/6, or 6/4 or 7.5YR 4/4 or 5/6. Moist color is 10YR 3/2, 3/3, 3/4, or 4/4 or 7.5YR 3/4. Texture is loam or sandy loam. The content of clay ranges from 12 to 18 percent. The content of gravel is 3 to 15 percent. By sum of cations, base saturation ranges from 60 to 70 percent. The content of organic matter is 3 to 5 percent. Reaction ranges from slightly acid to very strongly acid.

The BA horizon has dry color of 10YR 4/4 or 4/6 or 7.5YR 4/6, 5/4, or 5/6. Moist color is 10YR 3/3 or 3/4 or 7.5YR 3/4. Texture is loam or sandy loam. The content of clay ranges from 15 to 20 percent. The content of gravel is 3 to 15 percent. The content of organic matter is 1 to 3 percent. By sum of cations, base saturation ranges from 60 to 70 percent. Reaction ranges from slightly acid to strongly acid.

The upper part of the Bt horizon has dry color of 10YR 4/6; 7.5YR 4/4, 4/6, 5/4, 5/6, 6/4, 5/8, 6/6, or 7/6; or 5YR 5/6 or 5/8. Moist color is 10YR 3/4, 7.5YR 3/4 or 4/6, or 5YR 3/4 or 4/6. Texture is loam, sandy loam, sandy clay loam, or clay loam. The content of clay ranges from 18 to 28 percent. The content of gravel is 2 to 15 percent.

The content of organic matter is 1 to 3 percent. By sum of cations, base saturation ranges from 60 to 74 percent. Reaction is moderately acid or slightly acid.

The lower part of the Bt horizon has dry color of 7.5YR 4/6 or 5/6 or 5YR 4/4, 5/6, or 5/8. Moist color is 7.5YR 3/4, 4/6, 4/4, or 5/6 or 5YR 4/4 or 4/6. Texture is loam, sandy clay loam, gravelly sandy clay loam, or clay loam. The content of clay ranges from 22 to 35 percent. The content of gravel is 3 to 20 percent. The content of organic matter is 0.5 to 2 percent. By sum of cations, base saturation ranges from 75 to 85 percent. Reaction ranges from moderately acid to neutral.

Flumewall Series

The Flumewall series consists of shallow, well drained soils that formed in residuum and colluvium derived from coarse grained metamorphic rocks, mainly metadiorite. These soils are on canyon side slopes on metamorphic Sierra Nevada mountains. Slopes range from 70 to 100 percent. The mean annual precipitation is about 74 inches (1,880 mm), and the mean annual air temperature is about 52 degrees F (11 degrees C).

Taxonomic class: Loamy-skeletal, isotic, mesic Lithic Haploxerults

Typical Pedon

Flumewall gravelly sandy loam, on an east-facing slope of 82 percent, under a cover of canyon live oak, Douglas-fir, sugar pine, and ponderosa pine, at an elevation of 3,320 feet (1,012 m). When described on 6/1/2000, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 0.5 inch (0 to 1 cm); slightly decomposed plant material; abrupt smooth boundary.

A—0.5 inch to 2 inches (1 to 5 cm); light brown (7.5YR 6/4) gravelly sandy loam, brown (7.5YR 4/4) moist; 17 percent clay; moderate fine granular structure; soft, very friable, slightly sticky, slightly plastic; many very fine and fine roots; many very fine to medium irregular and tubular pores; 5 percent cobbles and 20 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 10.0; gradual smooth boundary.

Bt1—2 to 7 inches (5 to 17 cm); light brown (7.5YR 6/4) very gravelly sandy loam, brown (7.5YR 4/4) moist; 19 percent clay; weak fine subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; many very fine to medium roots; many very fine to medium irregular and tubular pores; 20 percent discontinuous faint clay films; 10 percent cobbles and 25 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 10.0; gradual smooth boundary.

Bt2—7 to 18 inches (17 to 46 cm); light brown (7.5YR 6/4) very stony sandy clay loam, strong brown (7.5YR 4/6) moist; 22 percent clay; weak fine subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; many very fine to coarse roots; many very fine to medium tubular and irregular pores; 20 percent discontinuous faint clay films; 20 percent cobbles, 20 percent stones, and 25 percent gravel; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 10.0; abrupt irregular boundary.

R—18 inches (46 cm); indurated metadiorite bedrock.

Type location: Butte County, California; about 0.68 mile east-northeast of Stirling City, approximately 1,000 feet south and 1,400 feet east of the northwest corner of sec. 27, T. 24 N., R. 4 E.; 39 degrees 54 minutes, 44 seconds north latitude and 121 degrees, 31 minutes, 2 seconds west longitude; NAD83; USGS Quad: Stirling City, California.

Range in Characteristics

The depth to lithic bedrock is 10 to 20 inches (25 to 51 cm). The mean annual soil temperature is 47 to 55 degrees F (8 to 13 degrees C). The particle-size control section averages 14 to 27 percent clay and 35 to 75 percent rock fragments, mostly gravel. Mineralogy is isotic. NaF pH is 11 to 9.5 in the A and Bt horizons. Rock fragments on the surface range from 10 to 25 percent gravel, 0 to 25 percent cobbles, 0 to 15 percent stones, and 0 to 10 percent boulders.

The A horizon has dry color of 7.5YR 6/3 or 6/4 or 10YR 6/3. Moist color is 7.5YR 4/3 or 4/4. Texture is gravelly fine sandy loam, gravelly sandy loam, cobbly fine sandy loam, or cobbly sandy loam. The content of clay ranges from 12 to 20 percent. The horizon has 15 to 80 percent gravel, 5 to 15 percent cobbles, 0 to 10 percent stones, and 0 to 10 percent boulders. Reaction is slightly acid or moderately acid.

The Bt horizon has dry color of 7.5YR 6/4 or 6/6 or 10YR 6/4. Moist color is 7.5YR 4/4 or 4/6, 10YR 5/4, or 5YR 4/6. Texture is gravelly fine sandy loam, very gravelly fine sandy loam, very gravelly sandy loam, very gravelly sandy clay loam, very stony sandy clay loam, or extremely stony sandy clay loam. The content of clay ranges from 14 to 27 percent. The horizon has 15 to 35 percent gravel, 10 to 25 percent cobbles, and 0 to 25 percent stones. Reaction ranges from slightly acid to strongly acid.

Fluvaquentic Humaquepts

Fluvaquentic Humaquepts consist of very deep, poorly drained soils that formed in alluvium derived from quartz diorite. These soils are in meadows in Sierra Nevada mountain valleys. Slopes range from 2 to 15 percent. The mean annual precipitation is about 80 inches (2,032 mm), and the mean annual air temperature is about 52 degrees F (11 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, mesic Fluvaquentic Humaquepts

Typical Pedon

Fluvaquentic Humaquepts very fine sandy loam, on a southwest-facing slope of 1 percent, under a cover of corn lily, rush, sedge, and arnica, at an elevation of 4,450 feet (1,356 m). When described on 9/23/1996, the soil was dry to a depth of 45 inches (114 cm) and very moist from 45 to 60 inches (114 to 152 cm). (Colors are for dry soil unless otherwise noted.)

A1—0 to 7 inches (0 to 18 cm); very dark grayish brown (10YR 3/2) very fine sandy loam, black (10YR 2/1) moist; 12 percent clay; weak very fine subangular blocky structure parting to moderate very fine granular; loose, very friable, nonsticky, nonplastic; many very fine roots; many very fine irregular pores; 2 percent mica flakes; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 10.0; abrupt smooth boundary.

A2—7 to 15 inches (18 to 38 cm); dark grayish brown (10YR 4/2) very fine sandy loam, black (10YR 2/1) moist; 15 percent clay; weak fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; common very fine roots; many very fine irregular pores; 2 percent mica flakes; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 11.0; clear smooth boundary.

Bw1—15 to 22 inches (38 to 56 cm); grayish brown (10YR 5/2) loam, black (10YR 2/1) moist; 20 percent clay; weak fine subangular blocky structure; soft, friable, nonsticky, slightly plastic; few very fine roots; common very fine tubular pores; 5 percent brown (7.5YR 4/4 moist) oxidized iron masses; 2 percent mica flakes; 2 percent gravel; moderately acid, pH 6.0 by Hellige-Truog; NaF pH 11.5; clear smooth boundary.

- Bw2**—22 to 29 inches (56 to 74 cm); grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; 25 percent clay; weak fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine roots; few very fine tubular pores; 5 percent brown (7.5YR 4/4 moist) oxidized iron masses; 2 percent mica flakes; 2 percent gravel; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 10.5; abrupt smooth boundary.
- Bw3**—29 to 36 inches (74 to 91 cm); very pale brown (10YR 7/3) loam, brown (10YR 4/3) moist; 25 percent clay; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine roots; few very fine tubular pores; 5 percent gray (10YR 5/1) iron depletions and 20 percent strong brown (7.5YR 4/8 moist) oxidized iron masses; 5 percent mica flakes; 5 percent gravel; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 9.0; abrupt smooth boundary.
- 2Bw**—36 to 45 inches (91 to 114 cm); very pale brown (10YR 7/3) gravelly clay loam, brown (10YR 5/3) moist; 28 percent clay; moderate medium subangular blocky structure; slightly hard, firm, slightly sticky, slightly plastic; common fine and few very fine tubular pores; 20 percent gray (10YR 5/1) iron depletions and 25 percent strong brown (7.5YR 4/8 moist) oxidized iron masses; 20 percent mica flakes; 20 percent gravel; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 9.5; abrupt smooth boundary.
- 2BC**—45 to 60 inches (114 to 152 cm); white (10YR 8/1) gravelly loam, gray (10YR 6/1) moist; 25 percent clay; moderate medium subangular blocky structure; slightly hard, firm, slightly sticky, slightly plastic; common fine, few medium, and few very fine tubular pores; 10 percent olive gray (5Y 5/2) iron depletions, 10 percent strong brown (7.5YR 4/6 moist) oxidized iron masses, and 60 percent gray (2.5Y 5/1 moist) iron depletions; 30 percent gravel; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 9.5.

Type location: Plumas County, California; about 1.5 miles southeast of Cascade, approximately 2,025 feet east and 2,200 feet south of the northwest corner of sec. 11, T. 21 N., R. 7 E.; 39 degrees, 41 minutes, 50 seconds north latitude and 121 degrees, 9 minutes, 4 seconds west longitude; NAD83; USGS Quad: Cascade, California.

Range in Characteristics

The depth to bedrock is more than 60 inches (152 cm), and depth to the 2BC horizon is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 52 to 56 degrees F (11 to 13 degrees C). The particle-size control section averages 20 to 25 percent clay and 0 to 1 percent rock fragments, mostly gravel. Mineralogy is mixed. The content of organic matter is 5 to 10 percent to a depth of 15 inches (38 cm). By ammonium acetate, base saturation is assumed to be 35 to 50 percent throughout the profile. A fluctuating water table can occur from the surface of the soil to a depth of 60 inches (152 cm) from November through August. Rock fragments on the surface range from 0 to 5 percent gravel.

The A horizon has dry color of 10YR 3/2 or 4/2. Moist color is 10YR 2/1 or 2/2. Texture is very fine sandy loam. The content of clay ranges from 12 to 15 percent. The content of gravel is 0 to 10 percent. NaF pH is 10.0 to 11.0. Reaction is moderately acid or strongly acid.

The Bw horizon has dry color of 10YR 5/2, 6/2, 7/2, or 7/3. Moist color is 10YR 2/1, 3/2, 3/3, 4/3, or 5/3. Texture is loam. The content of clay ranges from 20 to 25 percent. The content of gravel is 0 to 5 percent. Redoximorphic features occur as iron masses or iron depletions. NaF pH is 9.0 to 11.0. Reaction is moderately acid or strongly acid.

The 2Bw horizon has dry color of 10YR 6/3, 7/3, or 8/3. Moist color is 10YR 4/3, 5/3, or 6/3. Texture is gravelly clay loam. The content of clay ranges from 27 to 30 percent. Redoximorphic features occur as iron masses or iron depletions. NaF pH is 9.0 to 9.5. Reaction is moderately acid or strongly acid.

The 2BC horizon has dry color of 10YR 6/1, 7/1, or 8/1. Moist color is 10YR 5/1, 6/1, or 7/1. Texture is gravelly or very gravelly loam. The content of clay ranges from 20 to 27 percent. The content of gravel is 20 to 30 percent. Redoximorphic features occur as iron masses or iron depletions. NaF pH is 9.0 to 9.5. Reaction is moderately acid or strongly acid.

Fluvaquents, Loamy

Fluvaquents, loamy, consist of very deep, somewhat poorly drained soils that formed in alluvium derived from granitic and metamorphic rocks. These soils are on low terraces in Sierra Nevada mountain valleys. Slopes range from 0 to 3 percent. The mean annual precipitation is about 55 inches (1,397 mm), and the mean annual air temperature is about 56 degrees F (13 degrees C).

Taxonomic class: Mesic Fluvaquents

Typical Pedon

Fluvaquents, loamy, on a west-facing slope of 1 percent, under a cover of ponderosa pine, white alder, bigleaf maple, black willow, arroyo willow, blackberry, horsetail, bull thistle, and sedge, at an elevation of 2,018 feet (615 m). When described on 9/26/02, the soil was dry to a depth of 37 inches (94 cm), slightly moist from 37 to 45 inches (94 to 114 cm), very moist from 45 to 65 inches (114 to 165 cm), and saturated below 65 inches (165 cm). (Colors are for dry soil unless otherwise noted.)

Oi—0 to 0.5 inch (0 to 1 cm); slightly decomposed plant material; abrupt smooth boundary.

A1—0.5 inch to 2 inches (1 to 6 cm); pale brown (10YR 6/3) loam, very dark grayish brown (10YR 3/2) moist; 23 percent clay; moderate fine and medium subangular blocky structure; hard, friable, slightly sticky, slightly plastic; few fine and common very fine roots; many very fine and fine irregular and tubular and common medium tubular pores; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

A2—2 to 9 inches (6 to 23 cm); light brownish gray (10YR 6/2) loam, dark grayish brown (10YR 4/2) moist; 21 percent clay; moderate medium subangular blocky structure; moderately hard, friable, slightly sticky, slightly plastic; common very fine to medium roots; common very fine to medium tubular pores; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.

Bw1—9 to 18 inches (23 to 46 cm); pale brown (10YR 6/3) sandy clay loam, dark grayish brown (10YR 4/2) moist; 20 percent clay; moderate medium subangular blocky structure; moderately hard, friable, slightly sticky, slightly plastic; common very fine to medium roots; many very fine to medium tubular pores; 20 percent fine and medium irregular strong brown (7.5YR 5/6 dry) oxidized iron masses infused into matrix adjacent to pores; slightly acid, pH 6.5 by Hellige-Truog; gradual wavy boundary.

Bw2—18 to 24 inches (46 to 61 cm); light brownish gray (10YR 6/2) silt loam, dark grayish brown (10YR 4/2) moist; 27 percent clay; moderate medium subangular blocky structure; very hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine and fine and common medium tubular pores; 15 percent fine and medium threadlike yellowish red (5YR 5/6 dry) oxidized iron masses infused into matrix adjacent to pores; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

C1—24 to 27 inches (61 to 69 cm); light brownish gray (10YR 6/2) sandy loam, dark grayish brown (10YR 4/2) moist; 15 percent clay; massive; slightly hard, very friable, slightly sticky, nonplastic; few very fine to medium roots; many very fine and fine tubular and irregular and common medium tubular pores; 10 percent fine and medium irregular strong brown (7.5YR 5/6 dry) oxidized iron masses infused

into matrix adjacent to pores; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

- C2—27 to 37 inches (69 to 94 cm); grayish brown (2.5Y 5/2) silt loam, dark grayish brown (2.5Y 4/2) moist; 18 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine to medium roots; many very fine and fine and common medium tubular pores; 10 percent fine and medium irregular yellowish brown (10YR 5/6 dry) oxidized iron masses infused into matrix adjacent to pores; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.
- Agb1—37 to 45 inches (94 to 114 cm); gray (2.5Y 6/1) loam, very dark gray (10YR 3/1) moist; 20 percent clay; massive; moderately hard, friable, slightly sticky, slightly plastic; common very fine to medium roots; many very fine to medium tubular pores; 10 percent fine threadlike strong brown (7.5YR 4/6 moist) oxidized iron masses infused into matrix adjacent to pores; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.
- Agb2—45 to 65 inches (114 to 165 cm); gray (2.5Y 6/1) sandy clay loam, dark gray (2.5Y 4/1) moist; 25 percent clay; massive; moderately hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine tubular pores; 5 percent fine threadlike strong brown (7.5YR 4/6 moist) oxidized iron masses infused into matrix adjacent to pores; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.
- Agb3—65 to 70 inches (165 to 178 cm); gray (2.5Y 6/1) sandy loam, dark gray (2.5Y 4/1) moist; 16 percent clay; massive; slightly hard, friable, slightly sticky, nonplastic; common very fine roots; common very fine tubular pores; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.
- 2Cg—70 to 85 inches (178 to 216 cm); gray (2.5Y 6/1) sandy clay loam, dark gray (2.5Y 4/1) moist; 28 percent clay; massive; moderately hard, friable, moderately sticky, moderately plastic; common very fine roots; common very fine tubular pores; slightly acid, pH 6.5 by Hellige-Truog.

Type location: Butte County, California; about 0.25 mile east of Concow Reservoir, approximately 700 feet south and 1,720 feet west of the northeast corner of sec. 15, T. 22 N., R. 4 E.; 39 degrees, 45 minutes, 59 seconds north latitude and 121 degrees, 30 minutes, 41 seconds west longitude; NAD83; USGS Quad: Paradise East, California.

Range in Characteristics

The depth to bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 50 to 55 degrees F (10 to 13 degrees C). The soil moisture control section is dry in all parts from about August to October (about 90 days). The particle-size control section averages 12 to 27 percent clay and 0 to 15 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur at a depth of 10 to 59 inches (25 to 150 cm) from December through June and at a depth of 47 to 67 inches (10 to 170 cm) from July through November. Redoximorphic features, such as soft iron masses with color of 7.5YR 5/6 and 4/6, occur throughout the profile. Rock fragments on the surface range from 0 to 15 percent gravel.

The A horizon has dry color of 10YR 6/2 or 6/3. Moist color is 10YR 3/2 or 4/2. Texture is loam or fine sandy loam. The content of clay ranges from 12 to 27 percent. The content of gravel is 0 to 15 percent. Reaction is slightly acid or neutral.

The Bw horizon has dry color of 10YR 6/2 or 6/3. Moist color is 10YR 4/2 or 4/3. Texture is sandy clay loam, silt loam, loam, fine sandy loam, or sandy loam. The content of clay ranges from 12 to 27 percent. The content of gravel is 0 to 15 percent. Reaction is slightly acid or neutral.

The C horizon has dry color of 10YR 5/2 or 6/2 or 2.5Y 5/2. Moist color is 10YR 4/2 or 2.5Y 4/2. Texture is sandy loam, silt loam, fine sandy loam, or loam. The content of

clay ranges from 10 to 20 percent. The content of gravel is 0 to 15 percent. Reaction is slightly acid or neutral.

The Abg horizon has dry color of 2.5Y 5/1 or 6/1. Moist color is 10YR 3/1 or 4/1 or 2.5Y 4/1. Texture is loam, sandy clay loam, sandy loam, or fine sandy loam. The content of clay ranges from 12 to 27 percent. The content of gravel is 0 to 15 percent. Reaction is slightly acid or neutral.

The 2Cg horizon has dry color of 2.5Y 6/1 or 5/1. Moist color is 2.5Y 4/1 or 5/1. The horizon is sandy clay loam, loam, sandy loam, or the gravelly analogs of those textures. The content of clay ranges from 5 to 30 percent. The content of gravel is 0 to 35 percent. Reaction is slightly acid or neutral.

Galt Series

The Galt series consists of moderately deep, poorly drained soils that formed in alluvium derived from mixed rock sources. These soils are in basins, drainageways, and swales on low terraces. Slope ranges from 0 to 2 percent. The mean annual precipitation is about 22 inches (559 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Fine, smectitic, thermic Aquic Durixererts

Typical Pedon

Galt clay, on a slope of 2 percent, under a cover of wild oat, filaree, ryegrass, and hayfield tarweed, at an elevation of 175 feet (53 m). When described on 5/18/89, the soil was dry to a depth of 24 inches (61 cm) and moist below that depth. (Colors are for dry soil unless otherwise noted.)

- A1—0 to 3 inches (0 to 8 cm); very dark grayish brown (10YR 3/2) clay, very dark grayish brown (10YR 3/2) moist; 45 percent clay; strong very fine subangular blocky structure; extremely hard, friable, very sticky, very plastic; many very fine and common fine roots; common very fine tubular pores; 2 percent mixed gravel; slightly alkaline, pH 7.5 by Hellige-Truog; clear smooth boundary.
- A2—3 to 13 inches (8 to 33 cm); very dark grayish brown (10YR 3/2) clay, very dark grayish brown (10YR 3/2) moist; 50 percent clay; strong fine to coarse angular blocky structure; extremely hard, firm, very sticky, very plastic; many very fine and common fine roots; common very fine tubular pores; common discontinuous pressure faces; 2 percent mixed gravel; slightly alkaline, pH 7.5 by Hellige-Truog; gradual smooth boundary.
- Bss—13 to 29 inches (33 to 74 cm); very dark grayish brown (10YR 3/2) clay, very dark grayish brown (10YR 3/2) moist; 55 percent clay; strong medium and coarse angular blocky structure; extremely hard, firm, very sticky, very plastic; common very fine roots; many very fine tubular pores; common intersecting slickensides; nearly continuous pressure faces; 2 percent mixed gravel; slightly alkaline, pH 7.5 by Hellige-Truog; gradual smooth boundary.
- Bkss—29 to 32 inches (74 to 81 cm); dark brown (7.5YR 3/2) clay, dark brown (7.5YR 3/2) moist; 55 percent clay; moderate medium subangular blocky structure; extremely hard, firm, very sticky, very plastic; few very fine roots; many very fine tubular pores; common intersecting slickensides; common fine rounded soft lime masses; strongly effervescent (HCl, 1 normal); 2 percent mixed gravel; moderately alkaline, pH 8.0 by Hellige-Truog; abrupt smooth boundary.
- 2Bkqm—32 to 39 inches (81 to 99 cm); indurated duripan; cemented by silica; carbonates in seams.

Type location: Butte County, California; about 0.3 mile east of Soto Lake, approximately 1,000 feet north and 3,100 feet west of the southwest corner of sec. 5,

T. 23 N. R. 1 W.; in an unsectionized area in the Bosquejo Land Grant; 39 degrees, 52 minutes, 20 seconds north latitude and 122 degrees, 1 minute, 21 seconds west longitude; NAD27; USGS Quad: Foster Island, California.

Range in Characteristics

Depth to the duripan ranges from 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry from about late June to October (about 160 days). The particle-size control section averages 45 to 55 percent clay. Mineralogy is smectitic. Reversible, surface-initiated cracks 1.25 inches (3 cm) wide extend from the surface to the duripan. The depth to carbonates ranges from 0 to 32 inches (0 to 81 cm). A fluctuating water table can occur between the top of the duripan and the surface of the soil from December through May. Rock fragments on the surface range from 0 to 10 percent gravel.

The A horizon has dry color of 10YR 3/2, 4/2, or 4/3. Moist color is 10YR 3/2, 3/3, 4/2, or 5/2 or 7.5YR 3/2, 3/3, or 4/2. Texture is clay, silty clay, gravelly clay, or clay loam. The content of clay ranges from 30 to 60 percent. The horizon has 0 to 25 percent gravel and 0 to 5 percent cobbles. The content of organic matter is 1 to 2 percent. Reaction ranges from slightly acid to slightly alkaline.

The Bss horizon has dry color of 10YR 3/2, 3/3, 4/2, or 4/3. Moist color is 10YR 3/2 or 3/3 or 7.5YR 3/2, 3/3, 3/4, 4/2, or 4/4. Texture is clay, gravelly clay, cobbly clay, silty clay, or clay loam. The content of clay ranges from 38 to 60 percent. The horizon has 0 to 30 percent gravel and 0 to 15 percent cobbles. The content of organic matter is 0.2 to 0.8 percent. Reaction is neutral or slightly alkaline.

The Bkss horizon has dry color of 10YR 4/1 or 4/2 or 7.5YR 3/2. Moist color is 10YR 4/2 or 7.5YR 3/2, 4/2, 4/3, or 4/4. Texture is clay, gravelly clay, silty clay, or clay loam. The content of clay ranges from 37 to 60 percent. The content of gravel is 0 to 25 percent. The content of organic matter is 0.2 to 0.8 percent. Reaction ranges from neutral to moderately alkaline.

The Bw horizon, where it occurs, has dry color of 10YR 4/1 or 4/2 or 7.5YR 3/2. Moist color is 10YR 4/2 or 7.5YR 3/2, 4/2, 4/3, or 4/4. Texture is clay loam, sandy clay loam, loam, or sandy loam. The content of clay ranges from 15 to 37 percent. The content of gravel is 0 to 15 percent. The content of organic matter is 0.2 to 0.8 percent. Reaction is slightly alkaline.

Galt Taxadjunct

The Galt taxadjunct consists of moderately deep, somewhat poorly drained soils that formed in alluvium derived from mixed rock sources. These soils are in channels and swales on terraces. Slopes range from 0 to 2 percent. The mean annual precipitation is about 16 inches (406 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Typic Durixerpts

Typical Pedon

Galt taxadjunct clay loam, under a cover of annual grasses and tules, at an elevation of 54 feet (16 m). (Colors are for dry soil unless otherwise noted.)

Ak1—0 to 5 inches (0 to 13 cm); light brownish gray (10YR 6/2) clay loam, dark brown (10YR 3/3) moist; strong fine granular structure; hard, friable, sticky, plastic; many very fine and fine and few medium tubular pores; disseminated lime; 8 percent calcium carbonate equivalent; slightly effervescent; neutral; clear way boundary.

Ak2—5 to 13 inches (12 to 33 cm); pale brown (10YR 6/3) clay loam, dark brown (10YR 3/3) moist; strong medium subangular blocky structure; hard, friable,

sticky, plastic; common very fine roots; many very fine and fine and few medium tubular pores; disseminated lime; 8 percent calcium carbonate equivalent; slightly effervescent; moderately alkaline; clear smooth boundary.

Bk1—13 to 17 inches (33 to 43 cm); light yellowish brown (10YR 6/4) clay loam, dark yellowish brown (10YR 4/4) moist; strong medium subangular blocky structure; hard, friable, sticky, plastic; common very fine roots; many very fine and fine and few medium tubular pores; disseminated lime; 7 percent calcium carbonate equivalent; strongly effervescent; moderately alkaline; abrupt smooth boundary.

Bk2—17 to 21 inches (43 to 53 cm); very pale brown (10YR 7/3) clay loam, brown (10YR 5/3) moist; massive; hard, friable, slightly sticky, slightly plastic; common very fine roots; few very fine tubular pores; disseminated lime; 41 percent calcium carbonate equivalent; violently effervescent; moderately alkaline; abrupt smooth boundary.

2Bkqm—21 to 22 inches (53 to 56 cm); white (10YR 8/2) duripan, light brownish gray (10YR 6/2) moist; massive; extremely hard; continuous laminar bands of silica and calcium carbonate; alternating seams of lime; violently effervescent; abrupt smooth boundary.

2Bk—22 to 25 inches (56 to 64 cm); very pale brown (10YR 8/3) loam, very pale brown (10YR 7/3) moist; massive; slightly hard; very friable, nonsticky, nonplastic; disseminated lime; 43 percent calcium carbonate equivalent; violently effervescent; moderately alkaline; abrupt smooth boundary.

2Bkqm—25 to 26 inches (64 to 66 cm); white (10YR 8/2) duripan, light gray (10YR 7/2) moist; massive; extremely hard; continuous laminar bands of silica and calcium carbonate; alternating seams of lime; violently effervescent; abrupt smooth boundary.

3Cd—26 to 60 inches (66 to 152 cm); white (10YR 8/2) densic material, light olive brown (2.5Y 5/4) moist; massive; very hard, extremely firm; disseminated lime; violently effervescent.

Type location: Sutter County, California; about 4.7 miles west of Pennington, approximately 2,700 feet east and 350 feet south of the northwest corner of sec. 32, T. 17 N., R. 1 E.; 39 degrees, 17 minutes, 16 seconds north latitude and 121 degrees, 52 minutes, 53 seconds west longitude; NAD27; USGS Quad: Sanborn Slough, California.

Range in Characteristics

Depth to an indurated duripan ranges from 20 to 35 inches (51 to 89 cm). The mean annual soil temperature is 62 to 65 degrees F (17 to 18 degrees C). The particle-size control section ranges from 27 to 35 percent clay. Mineralogy is mixed. The soils are calcareous throughout. The content of organic matter is less than 1 percent throughout the profile. A fluctuating water table can occur from the top of the duripan to 12 inches (30 cm) below the surface of the soil from December through April.

The Ak horizon has dry color of 10YR 6/2 or 6/3. Moist color is 10YR 3/2, 3/3, or 4/3. Texture is clay loam. The content of clay ranges from 27 to 35 percent. Reaction ranges from neutral to moderately alkaline.

The Bk horizon has dry color of 10YR 6/2, 6/3, 7/3, or 6/4. Moist color is 10YR 5/3, 4/3, 4/4, 3/3, or 3/2. Texture is clay loam. The content of clay ranges from 27 to 35 percent. Reaction ranges from neutral to moderately alkaline.

The Galt taxadjunct is a taxadjunct because it has less clay than is described as the range for the series and because the duripan is underlain by dense silt deposits. These differences do not significantly affect the use, management, or interpretations of the soils.

Gianella Series

The Gianella series consists of very deep, moderately well drained soils that formed in overbank river alluvium derived from mixed rock sources. These soils are on flood plains within the meander belt. Slopes are 0 to 1 percent. The mean annual precipitation is about 22 inches (559 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C)

Taxonomic class: Coarse-loamy, mixed, superactive, nonacid, thermic Typic Xerofluvents

Typical Pedon

Gianella silt loam, on a slope of less than 1 percent, in a walnut orchard, at an elevation of 160 feet (49 m). When described on 10/27/1988, the soil was moist throughout (irrigated). The water table was at a depth of more than 80 inches (203 cm). (Colors are for dry soil unless otherwise noted.)

- A—0 to 2 inches (0 to 5 cm); pale brown (10YR 6/3) silt loam, dark grayish brown (10YR 4/2) moist; 11 percent clay; weak thick platy structure; slightly hard, very friable, slightly sticky, slightly plastic; few very fine roots; few very fine tubular and common very fine irregular pores; slightly acid, pH 6.6 by pH meter 1:1 water; abrupt smooth boundary.
- C1—2 to 8 inches (5 to 20 cm); grayish brown (10YR 5/2) loamy fine sand, very dark grayish brown (10YR 3/2) moist; 4 percent clay; single grain; loose, nonsticky, nonplastic; few very fine roots; common very fine interstitial and few very fine tubular pores; slightly acid, pH 6.6 by pH meter 1:1 water; clear smooth boundary.
- C2—8 to 15 inches (20 to 38 cm); light yellowish brown (10YR 6/4) fine sandy loam, dark brown (10YR 3/3) moist; 8 percent clay; single grain; soft, very friable, slightly sticky, nonplastic; few medium roots; common very fine interstitial and few very fine tubular pores; neutral, pH 6.7 by pH meter 1:1 water; abrupt smooth boundary.
- C3—15 to 22 inches (38 to 56 cm); light yellowish brown (10YR 6/4) very fine sandy loam, dark yellowish brown (10YR 3/4) moist; 6 percent clay; single grain; soft, very friable, nonsticky, nonplastic; few medium roots; common very fine interstitial and few very fine tubular pores; neutral, pH 6.7 by pH meter 1:1 water; clear smooth boundary.
- C4—22 to 31 inches (56 to 79 cm); light brownish gray (2.5Y 6/2) very fine sandy loam, dark grayish brown (2.5Y 4/2) moist; 5 percent clay; single grain; soft, very friable, nonsticky, nonplastic; few medium roots; common very fine interstitial and few very fine tubular pores; neutral, pH 6.8 by pH meter 1:1 water; clear smooth boundary.
- C5—31 to 41 inches (79 to 104 cm); pale brown (10YR 6/3) very fine sandy loam, brown (10YR 4/3) moist; 8 percent clay; single grain; soft, very friable, slightly sticky, slightly plastic; few medium and coarse roots; common very fine tubular pores; 2 percent fine faint very dark brown (10YR 2/2 moist) and grayish brown (10YR 5/2 dry) iron depletions; slightly acid, pH 6.6 by pH meter 1:1 water; clear smooth boundary.
- C6—41 to 50 inches (104 to 127 cm); brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; 14 percent clay; massive; slightly hard, very friable, slightly sticky, slightly plastic; few fine and medium roots; common fine and medium tubular pores; 25 percent wormcasts; neutral, pH 6.7 by pH meter 1:1 water; clear smooth boundary.
- C7—50 to 54 inches (127 to 137 cm); pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; 14 percent clay; massive; slightly hard, very friable, slightly sticky,

- slightly plastic; few fine roots; common very fine and fine tubular pores; neutral, pH 6.8 by pH meter 1:1 water; clear smooth boundary.
- C8—54 to 64 inches (137 to 163 cm); light yellowish brown (10YR 6/4) silt loam, brown (10YR 4/3) moist; 13 percent clay; massive; slightly hard, very friable, slightly sticky, slightly plastic; common fine and medium tubular pores; 1 percent fine prominent strong brown (7.5YR 5/6 moist) oxidized iron masses and 4 percent coarse distinct very dark gray (10YR 3/1 moist) iron depletions; neutral, pH 6.9 by pH meter 1:1 water; abrupt smooth boundary.
- C9—64 to 66 inches (163 to 168 cm); light brownish gray (10YR 6/2) silt loam, brown (10YR 4/3) moist; 12 percent clay; massive; slightly hard, very friable, slightly sticky, slightly plastic; common fine tubular pores; neutral, pH 6.8 by pH meter 1:1 water; abrupt smooth boundary.
- C10—66 to 69 inches (168 to 174 cm); light yellowish brown (10YR 6/4) loam, yellowish brown (10YR 5/4) moist; 10 percent clay; massive; slightly hard, very friable, slightly sticky, slightly plastic; common very fine and fine tubular pores; neutral, pH 7.1 by pH meter 1:1 water; abrupt smooth boundary.
- C11—69 to 83 inches (174 to 210 cm); pale brown (10YR 6/3) loamy fine sand, brown (10YR 4/3) moist; 5 percent clay; single grain; loose, nonsticky, nonplastic; many very fine and fine interstitial pores; neutral, pH 7.1 by pH meter 1:1 water.

Type location: Butte County, California; about 5.7 miles northwest of Nord, on Snaden Island, approximately 2,700 feet west and 400 feet south of the west end of Bennett Road; in an unsectionized area in the Bosquejo Land Grant; T. 23 N., R. 2 W.; 39 degrees, 48 minutes, 13 seconds north latitude and 122 degrees, 3 minutes, 19 seconds west longitude; NAD27; USGS Quad: Foster Island, California.

Range in Characteristics

The soils are very deep and stratified. The mean annual soil temperature is 60 to 62 degrees F (16 to 17 degrees C). The particle-size control section averages 10 to 18 percent clay and has more than 15 percent fine sand or coarser sand. Mineralogy is mixed. The soils are noncalcareous throughout. The content of organic matter decreases irregularly with increasing depth. It ranges from 4.0 at the surface to 0.34 percent to a depth of 83 inches (211 cm). A fluctuating water table can occur at a depth of 33 to more than 80 inches (83 to 203 cm) from December through March. Redoximorphic features, such soft oxidized iron masses with color of 7.5YR 4/4 or 4/6 moist, may occur at a depth as high as 18 inches (46 cm). Also, they may occur in the A horizon, especially if the horizon has platy structure. Rock fragments on the surface range from 0 to 20 percent gravel. Some pedons have an Ab horizon, commonly with textures of silt loam or loam. Some pedons have a gravelly substratum.

The A and Ap horizons have dry color of 10YR 5/3, 6/3, or 5/4. Moist color is 10YR 3/2, 3/3, 4/2, or 4/3 or 2.5Y 3/3. Texture is silt loam, fine sandy loam, sandy loam, or loam. The content of clay ranges from 4 to 22 percent. Reaction ranges from moderately acid to moderately alkaline.

The C horizon has dry color of 10YR 5/2, 5/3, 5/4, 6/3, or 6/4 or 2.5Y 6/2. Moist color is 10YR 3/2, 4/2, 3/3, 3/4, 4/3, 4/4, or 5/2 or 2.5Y 4/2 or 4/3. Texture is loam, silt loam, fine sandy loam, very fine sandy loam, loamy sand, loamy fine sand, coarse sandy loam, sand, or sandy loam. The content of clay ranges from 1 to 15 percent. Reaction ranges from slightly acid to moderately alkaline.

Govstanford Series

The Govstanford series consists of very deep, somewhat poorly drained soils that formed in hydraulic mine sediment over basin clays. These soils are on flood plains and on alluvial fans above flood basins. Slopes are 0 to 1 percent. The mean annual

precipitation is about 22 inches (559 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Coarse-loamy over clayey, mixed over smectitic, superactive, nonacid, thermic Oxyaquic Xerofluvents

Typical Pedon

Govstanford loam, on a slope of less than 1 percent, under a cover of almond trees, at an elevation of 139 feet (42 m). When described on 11/22/1993, the soil was moist throughout. (Colors are for dry soil unless otherwise noted.)

- Ap1—0 to 3 inches (0 to 8 cm); pale brown (10YR 6/3) loam, dark brown (10YR 3/3) moist; 17 percent clay; moderate medium platy structure parting to moderate medium subangular and moderate fine granular; moderately hard, firm, nonsticky, slightly plastic; many very fine roots; few fine tubular pores; slightly acid, pH 6.5 pH by Hellige-Truog; clear smooth boundary.
- Ap2—3 to 11 inches (8 to 28 cm); pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; 21 percent clay; weak fine subangular blocky structure; hard, very firm, slightly sticky, slightly plastic; common very fine to medium and few coarse roots; few fine tubular pores; neutral, pH 6.8 by pH Hellige-Truog; clear wavy boundary.
- C1—11 to 18 inches (28 to 46 cm); light yellowish brown (10YR 6/4) sandy loam, brown (10YR 4/3) moist; 5 percent clay; weak medium subangular blocky structure; slightly hard, friable, nonsticky, nonplastic; many fine, common very fine and medium, and few coarse roots; few fine tubular and common fine interstitial pores; neutral, pH 7.0 pH by Hellige-Truog; clear smooth boundary.
- C2—18 to 25 inches (46 to 64 cm); yellowish brown (10YR 5/4) silt loam, brown (10YR 4/3) moist; 13 percent clay; weak medium subangular blocky structure; hard, very firm, nonsticky, nonplastic; few very fine and fine roots; common irregular tubular and irregular pores; slightly alkaline, pH 7.5 pH by Hellige-Truog; clear smooth boundary.
- C3—25 to 34 inches (64 to 86 cm); yellowish brown (10YR 5/4) silt loam, brown (10YR 4/3) moist; 9 percent clay; weak medium subangular blocky structure; hard, very firm, nonsticky, nonplastic; few very fine, fine, and coarse roots; common very fine and fine tubular pores; common fine distinct brown (7.5YR 4/4 moist) threadlike soft oxidized iron masses and common fine faint dark grayish brown (10YR 4/2 moist) irregularly shaped soft iron depletions; slightly alkaline, pH 7.5 pH by Hellige-Truog; abrupt smooth boundary.
- 2Assg—34 to 42 inches (86 to 107 cm); black (10YR 2/1) clay, black (10YR 2/1) moist; 56 percent clay; moderate fine subangular blocky structure; extremely hard, slightly rigid, very sticky, very plastic; few very fine and medium roots; few fine tubular pores; common intersecting slickensides; slightly alkaline, pH 7.5 pH by Hellige-Truog; clear smooth boundary.
- 2Bssg1—42 to 61 inches (107 to 155 cm); very dark gray (10YR 3/1) silty clay, very dark brown (10YR 2/2) moist; 56 percent clay; moderate medium subangular blocky structure; extremely hard, slightly rigid, very sticky, very plastic; few very fine and fine roots; few fine tubular pores; many intersecting slickensides; moderately alkaline, pH 8.0 pH by Hellige-Truog; clear smooth boundary.
- 2Bssg2—61 to 72 inches (155 to 183 cm); very dark grayish brown (10YR 3/2) silty clay, very dark grayish brown (10YR 3/2) moist; 52 percent clay; moderate medium subangular blocky structure; extremely hard, slightly rigid, very sticky, very plastic; few fine tubular pores; common intersecting slickensides; moderately alkaline, pH 8.0 pH by Hellige-Truog.

Type location: Butte County, California; about 2.3 miles south of Durham, approximately 200 feet north of where the old Sacramento Northern Railroad crossed Butte Creek and 100 feet west of the old tracks; in an unsectionized area in the

Esquon Land Grant; 39 degrees, 37 minutes, 0 seconds north latitude and 121 degrees, 46 minutes, 38 seconds west longitude; NAD27; USGS Quad: Nelson, California.

Range in Characteristics

Depth to the lithologic discontinuity is 20 to 36 inches (51 to 91 cm). The mean annual soil temperature is 62 to 66 degrees F (17 to 19 degrees C). The soil moisture control section is dry from June to October (120 to 150 days). The particle-size control section averages 4 to 17 percent clay in the coarse-loamy material and 40 to 60 percent clay in the clayey material. Mineralogy is mixed in the coarse-loamy material and smectitic in the clayey material. The content of organic matter is 1 to 2 percent to a depth of 11 inches (28 cm). Common or many intersecting slickensides occur in the 2Assg and 2Bssg horizons, from 34 to 72 inches (86 to 183 cm). A fluctuating water table can occur at a depth of 20 to 72 inches (51 to 183 cm) from December through April. In some pedons oxidized iron masses, iron-manganese concretions, and manganese masses occur in the underlying basin material.

The Ap horizon has dry color of 10YR 5/3, 6/2, or 6/3. Moist color is 10YR 3/3, 4/2, or 4/3. Texture is loam, fine sandy loam, or sandy loam. The content of clay ranges from 15 to 27 percent. Reaction ranges from slightly acid to slightly alkaline.

The upper part of the C horizon has dry color of 10YR 6/2, 6/3, 6/4, 7/2, or 7/3. Moist color is 10YR 4/2, 4/3, 4/4, 5/2, 5/3, or 5/4. Texture is sand, loamy sand, sandy loam, fine sandy loam, loam, or silt loam. The content of clay ranges from 3 to 18 percent. Reaction ranges from neutral to moderately alkaline.

The lower part of the C horizon has dry color of 10YR 6/2, 6/3, 6/4, 7/2, or 7/3. Moist color is 10YR 4/2, 4/3, 4/4, 5/2, 5/3, or 5/4. Texture is sand, loamy sand, sandy loam, fine sandy loam, loam, silt loam, or silt. The content of clay ranges from 5 to 18 percent. Redoximorphic features, such as oxidized iron masses with color of 7.5YR 3/4, 4/4, or 4/6 moist and iron depletions with color of 10YR 4/2 moist, occur in pores and on faces of peds in this part of the C horizon. Reaction ranges from neutral to moderately alkaline.

The 2Assg horizon has dry color of 10YR 2/1, 3/1, 4/1, 5/1, or 4/2. Moist color is 10YR 2/1, 3/1, 4/1, or 3/2. Texture is silty clay or clay. The content of clay ranges from 40 to 60 percent. Reaction ranges from neutral to moderately alkaline.

The 2Bssg horizon has dry color of 10YR 2/2, 3/2, 4/1, 5/1, 5/2, or 6/2. Moist color is 10YR 3/1, 3/2, 4/1, or 4/2. Texture is silty clay, clay, or silty clay loam. The content of clay ranges from 35 to 55 percent. Reaction ranges from neutral to moderately alkaline.

Greenwell Series

The Greenwell series consists of moderately deep, well drained soils that formed in tephra over colluvium and residuum derived from volcanic mudflow. These soils are on lahar over narrow basalt plateaus in volcanic Sierra Nevada mountains. Slopes range from 2 to 50 percent. The mean annual precipitation is about 80 inches (2,032 mm), and the mean annual air temperature is about 49 degrees F (9 degrees C).

Taxonomic class: Medial, amorphic, frigid Humic Haploxerands

Typical Pedon

Greenwell medial sandy loam, on a northwest-facing slope of 17 percent, under a cover of mixed conifers and shrubs, at an elevation of 4,975 feet (1,516 m). When described on 12/16/1996, the soil was moist throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 2 inches (0 to 5 cm); slightly decomposed needles and twigs; abrupt smooth boundary.

- Oe—2 to 3 inches (5 to 8 cm); moderately decomposed needles and twigs; abrupt smooth boundary.
- A1—3 to 5 inches (8 to 13 cm); brown (10YR 5/3) medial sandy loam, dark brown (7.5YR 3/2) moist; 8 percent clay; weak fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; few fine and common very fine roots; common very fine irregular and few very fine vesicular pores; 5 percent subrounded andesite gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 12.0; abrupt smooth boundary.
- A2—5 to 10 inches (13 to 26 cm); brown (10YR 5/3) medial sandy loam, dark brown (10YR 3/3) moist; 10 percent clay; weak fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; few fine and medium and common very fine roots; common very fine irregular pores; 10 percent subrounded andesite gravel; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 11.7; abrupt smooth boundary.
- Bw—10 to 18 inches (26 to 46 cm); light yellowish brown (10YR 6/4) gravelly medial sandy loam, dark brown (10YR 3/3) moist; 12 percent clay; weak fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; many fine and medium, few coarse, and common very fine roots; common very fine irregular pores; 16 percent subrounded andesite gravel; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 11.5; clear smooth boundary.
- 2BC1—18 to 23 inches (46 to 59 cm); very pale brown (10YR 7/3) medial sandy loam, brown (10YR 4/3) moist; 18 percent clay; weak very fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; common fine and medium and few coarse roots; common very fine irregular pores; 5 percent subrounded andesite cobbles; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 11.0; gradual wavy boundary.
- 2BC2—23 to 32 inches (59 to 82 cm); very pale brown (10YR 7/3) very gravelly medial sandy loam, brown (10YR 4/3) moist; 18 percent clay; weak very fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; few fine and common medium and coarse roots on top of the horizon; common very fine irregular pores; 5 percent subangular andesite cobbles and 40 percent subangular andesite gravel; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 10.7; abrupt smooth boundary.
- 2Cr—32 inches (82 cm); moderately cemented volcanic mudflow bedrock imbedded with well rounded andesite gravel and cobbles; few fine roots in cracks more than 10 inches (25 cm) apart.

Type location: Plumas County, California; about 2.1 miles south of Camel Peak Lookout, approximately 2,050 feet west and 1,400 feet north of the southeast corner of sec. 8, T. 21 N., R. 8 E.; 39 degrees, 41 minutes, 18 seconds north latitude and 121 degrees, 6 minutes, 26 seconds west longitude; NAD83; USGS Quad: American House, California.

Range in Characteristics

The depth to paralithic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 40 to 47 degrees F (4 to 8 degrees C). The particle-size control section averages 10 to 18 percent clay and 0 to 34 percent rock fragments, mostly gravel. Mineralogy is amorphous. The content of organic matter is 4 to 35 percent to a depth of 32 inches (81 cm). By ammonium acetate, base saturation ranges from 10 to 35 percent to a depth of 32 inches (81 cm). Rock fragments on the surface range from 0 to 5 percent gravel, 0 to 5 percent cobbles, 0 to 5 percent stones, and 0 to 5 percent boulders.

The A horizon has dry color of 10YR 3/2, 3/3, 4/2, 5/2, or 5/3. Moist color is 10YR 2/1, 3/2, or 3/3 or 7.5YR 3/2. Texture is medial sandy loam or gravelly medial sandy

loam. The content of clay ranges from 8 to 11 percent. The content of gravel is 0 to 25 percent. NaF pH is 9 to 12. Reaction ranges from very strongly acid to slightly acid.

The Bw horizon has dry color of 10YR 4/3, 5/3, 6/3, or 6/4 or 7.5YR 4/2, 4/3, 5/3, or 6/3. Moist color is 10YR 3/3 or 4/3; 7.5YR 3/2, 3/3, or 4/2; or 5YR 3/2. Texture is medial sandy loam, gravelly medial sandy loam, or gravelly medial coarse sandy loam. The content of clay ranges from 10 to 15 percent. The horizon has 0 to 25 percent gravel and 0 to 5 percent cobbles. NaF pH is 11.0 to 11.5. Reaction ranges from very strongly acid to slightly acid.

The 2BC horizon has dry color of 10YR 5/4 or 7/3 or 7.5YR 4/3 or 6/3. Moist color is 10YR 4/3 or 7.5YR 3/3 or 4/3. Texture is medial sandy loam, gravelly medial sandy loam, very gravelly medial coarse sandy loam, or very gravelly medial sandy loam. The content of clay ranges from 12 to 18 percent. The horizon has 0 to 60 percent gravel and 0 to 10 percent cobbles. NaF pH is 10.5 to 11.0. Reaction is very strongly acid or strongly acid.

Gridley Series

The Gridley series consists of moderately deep, moderately well drained soils that formed in alluvium derived from mixed rock sources. These soils are on low terraces and basin rims. Slopes are 0 to 1 percent. The mean annual precipitation is about 18 inches (457 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Fine, smectitic, thermic Typic Argixerolls

Typical Pedon

Gridley clay loam, on a slope of less than 1 percent, in an irrigated prune orchard, at an elevation of 67 feet (21 m). When described on 4/5/1979, the soil was moist throughout. (Colors are for dry soil unless otherwise noted).

Ap—0 to 9 inches (0 to 23 cm); brown (10YR 5/3) clay loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium angular blocky structure; very hard, friable, sticky, plastic; common very fine and fine roots; common very fine and fine tubular pores; neutral, pH 7.0; clear smooth boundary.

A—9 to 19 inches (23 to 48 cm); brown (10YR 5/3) clay loam, dark brown (10YR 3/3) moist; moderate medium angular blocky structure; very hard, friable, sticky, plastic; few very fine roots; common very fine tubular pores; slightly alkaline, pH 7.5; gradual wavy boundary.

Bt1—19 to 28 inches (48 to 71 cm); brown (10YR 5/3) clay, dark yellowish brown (10YR 3/4) moist; moderate coarse subangular blocky structure; extremely hard, firm, very sticky, very plastic; few very fine roots, common very fine and fine tubular pores; few thin clay films on faces of peds and in pores; slightly alkaline, pH 7.5; gradual wavy boundary.

Bt2—28 to 37 inches (71 to 94 cm); yellowish brown (10YR 5/4) clay, dark yellowish brown (10YR 3/4) moist; moderate coarse subangular blocky structure; extremely hard, firm, very sticky, very plastic; few very fine roots; common very fine and fine tubular pores; common pressure faces on peds; slightly alkaline, pH 7.5; clear wavy boundary.

2Cr—37 to 62 inches (94 to 157 cm); very pale brown (10YR 7/4) siltstone, yellowish brown (10YR 5/4) moist; common fine strong brown (7.5YR 4/6) oxidized iron masses lining pores; common moderately thick clay films on fracture faces; slightly alkaline, pH 7.5.

Type location: Sutter County, California; about 2.1 miles north of Yuba City, approximately 950 feet south and 250 feet east of the northeast corner of sec. 4, T. 15

N., R. 3 E.; in an unsectionized area in the New Helvetia Land Grant; 39 degrees, 11 minutes, 14 seconds north latitude and 121 degrees, 37 minutes, 59 seconds west longitude; NAD27; USGS Quad: Sutter, California.

Range in Characteristics

The depth to paralithic contact ranges from 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 59 to 65 degrees F (15 to 18 degrees C). The soil temperature is above 47 degrees F (8 degrees C) the entire year. Unless irrigated, the soils are dry in all parts between depths of 6 and 17 inches (15 and 43 cm) from June through October and is moist in some or all parts from November through May. Reaction is neutral to moderately alkaline. Some pedons have a calcareous C horizon above the 2Cr horizon.

The A horizon has dry color of 10YR 5/3 or 5/2 or 7.5YR 5/2. Moist color is 10YR 3/2 or 3/3 or 7.5YR 3/2. The content of clay ranges from 27 to 35 percent. Reaction ranges from neutral to moderately alkaline.

The Bt horizon has dry color of 10YR 6/3, 5/3, 6/4, or 5/4 or 7.5YR 6/4. Moist color is 10YR 3/2, 3/3, 3/4, 4/3, 4/4, or 5/4 or 7.5YR 3/2, 3/3, 4/4, or 4/6. Texture is clay loam, clay, or silty clay. The content of clay ranges from 35 to 55 percent.

Gridley Taxadjunct

The Gridley taxadjunct consists of moderately deep, somewhat poorly drained soils that formed alluvium derived from mixed rock sources. These soils are on terraces. Slopes range from 0 to 2 percent. The mean annual precipitation is about 18 inches (457 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine, smectitic, thermic Typic Durixerolls

Typical Pedon

Gridley taxadjunct clay loam, on a slope of 0 to 2 percent, under a cover of annual grasses and forbs, at an elevation of 70 feet (21 m). When described on 8/25/1988, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

- A—0 to 4 inches (0 to 10 cm); dark grayish brown (10YR 4/2) clay loam, very dark grayish brown (10YR 3/2) moist; 28 percent clay; moderate medium subangular blocky structure parting to weak medium granular; very hard, friable, moderately sticky, moderately plastic; few fine and common very fine roots; many very fine tubular pores; 10 percent fine dark yellowish brown (10YR 3/6 dry) iron-manganese masses throughout; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.
- Bt1—4 to 9 inches (10 to 23 cm); dark grayish brown (10YR 4/2) clay loam, very dark grayish brown (10YR 3/2) moist; 38 percent clay; strong fine and medium angular blocky structure; extremely hard, firm, moderately sticky, moderately plastic; few fine and common very fine roots; many very fine tubular pores; 30 percent distinct clay films on faces of peds; 2 percent fine iron-manganese nodules and 10 percent very fine iron-manganese masses; 2 percent rounded gravel; slightly alkaline, pH 7.5 by Hellige-Truog; clear smooth boundary.
- Bt2—9 to 15 inches (23 to 38 cm); brown (10YR 5/3) clay loam, very dark grayish brown (10YR 3/2) moist; 36 percent clay; strong fine and strong medium and coarse subangular blocky structure; extremely hard, firm, moderately sticky, moderately plastic; few very fine and fine roots; many very fine tubular pores; 10 percent slickensides; 21 percent prominent clay films on faces of peds and in pores; 2 percent fine iron-manganese nodules and 20 percent very fine iron-

manganese masses; moderately alkaline, pH 8.0 by Hellige-Truog; clear smooth boundary.

Btk—15 to 21 inches (38 to 53 cm); pale brown (10YR 6/3) clay loam, dark brown (10YR 3/3) moist; 34 percent clay; moderate fine and medium subangular blocky structure; extremely hard, firm, moderately sticky, moderately plastic; few very fine and fine roots; many very fine tubular pores; 25 percent clay films; 1 percent very fine iron-manganese masses and 2 percent fine iron-manganese nodules; 2 percent medium spherical carbonate concretions; strong effervescence; moderately alkaline, pH 8.0 by Hellige-Truog; clear smooth boundary.

2Bkqm—21 to 60 inches (53 to 152 cm); moderately cemented duripan; very pale brown (10YR 8/2) coarse sandy loam, pale brown (10YR 6/3) moist; 5 percent clay; massive; rigid, moderately cemented by silica, nonsticky, nonplastic; 10 percent very fine threadlike carbonate masses; strong effervescence; moderately alkaline, pH 8.0 by Hellige-Truog; indurated laminar capping, 3 mm thick, cemented by silica; violent effervescence on top of the capping.

Type location: Butte County, California; about 2.7 miles east of Graylodge Wildlife Area headquarters, approximately 1,200 feet west and 2,300 feet north of the southeast corner of sec. 18, T. 17 N., R. 2 E.; 39 degrees, 19 minutes, 28 seconds north latitude and 121 degrees, 47 minutes, 6 seconds west longitude; NAD27; USGS Quad: Pennington, California.

Range in Characteristics

Depth to the duripan ranges from 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry from about May to October (about 150 days). The particle-size control section averages 35 to 40 percent clay. Mineralogy is mixed. The content of organic matter is 1 to 3 percent to a depth of 9 inches (23 cm) and 0 to 1 percent from 9 to 20 inches (23 to 51 cm). The depth to carbonates ranges from 5 to 24 inches or more (13 to 61 cm). Electrical conductivity ranges from 0 to 2 mmhos/cm throughout the profile. Reversible, surface-initiated cracks 0.5 to 1 inch (1 to 2.5 cm) wide extend to a depth of 16 inches (41 cm) or more. A fluctuating water table can occur between the top of the duripan and 5 inches (13 cm) below the surface of the soil from December to April. Redoximorphic features, such as iron-manganese masses and iron-manganese nodules with color of N 2/0, 10YR 5/1, 5Y 5/1, or 5G 5/1, occur in all horizons.

The A horizon has dry color of 10YR 4/1, 4/2, 4/3, 5/1, 5/2, or 5/3 or 7.5YR 5/2. Moist color is 10YR 3/1, 3/2, or 3/3 or 7.5YR 3/2. Texture is loam or clay loam. The content of clay ranges from 25 to 30 percent. Reaction ranges from neutral to moderately alkaline.

The Bt horizon has dry color of 10YR 5/2, 5/3, 6/3, 5/4, 6/4, or 7/4 or 7.5YR 6/4. Moist color is 10YR 3/2, 3/3, 4/4, or 4/6. Texture is clay loam, silty clay loam, or clay. The content of clay ranges from 35 to 50 percent. The content of gravel is 0 to 2 percent. Reaction ranges from neutral to moderately alkaline.

The Btk horizon has dry color of 10YR 6/3, 7/2, 7/3, or 8/2. Moist color is 10YR 3/3, 4/2, 4/3, 4/4, or 5/2. Texture is clay loam or clay. The content of clay ranges from 30 to 50 percent. Effervescence ranges from slight to strong. Reaction is slightly alkaline or moderately alkaline.

The 2Bkqm horizon has dry color of 10YR 6/2, 7/2, 7/3, 8/2, or 8/3. Moist color is 10YR 6/3, 6/6, or 7/3. Texture is coarse sandy loam, loam, or loamy coarse sand. The content of clay ranges from 5 to 20 percent. Rupture resistance ranges from indurated in the upper part of the horizon to weakly cemented or moderately cemented in the lower part. The indurated laminar cap is $\frac{1}{16}$ to $\frac{1}{4}$ inch (1 to 6 mm) thick.

The Gridley taxadjunct is a taxadjunct because it has a duripan rather than siltstone. This difference does not significantly affect the use, management, or interpretations of the soils.

Griffgulch Series

The Griffgulch series consists of deep, well drained soils that formed in residuum and colluvium derived from metavolcanic rocks. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada mountains. Slopes range from 3 to 70 percent. The mean annual precipitation is about 56 inches (1,422 mm), and the mean annual air temperature is about 56 degrees F (13 degrees C).

Taxonomic class: Clayey-skeletal, mixed, active, mesic Ultic Haploxeralfs

Typical Pedon

Griffgulch very gravelly silt loam, on a southwest-facing slope of 47 percent, under a cover of ponderosa pine, canyon live oak, whiteleaf manzanita, Pacific poison oak, buckbrush, and deerbrush, at an elevation of 2,460 feet (750 m). When described on 10/16/1997, the soil was dry to a depth of 33 inches (84 cm) and slightly moist from 33 to 58 inches (84 to 147 cm). (Colors are for dry soil unless otherwise noted.)

Oi—0 to 2 inches (0 to 5 cm); pine needles, twigs, and leaves.

Oe—2 to 3 inches (5 to 8 cm); partially decomposed pine needles, twigs, and leaves.

A—3 to 7 inches (8 to 18 cm); reddish yellow (7.5YR 6/6) very gravelly silt loam, reddish brown (5YR 4/4) moist; 26 percent clay; strong fine and medium granular structure; slightly hard, friable, nonsticky, slightly plastic; many very fine to medium roots; many very fine to coarse vesicular and tubular pores; noneffervescent; 35 percent gravel and 15 percent cobbles; moderately acid, pH 5.9 by pH meter 1:1 water; gradual smooth boundary.

Bt1—7 to 11 inches (18 to 28 cm); reddish yellow (7.5YR 6/6) very cobbly silty clay loam, reddish brown (5YR 4/4) moist; 27 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, nonsticky, slightly plastic; many very fine to medium roots; many very fine to medium and few coarse vesicular and tubular pores; few faint discontinuous clay films on faces of peds; noneffervescent; 20 percent gravel and 20 percent cobbles; moderately acid, pH 5.9 by pH meter 1:1 water; gradual smooth boundary.

Bt2—11 to 20 inches (28 to 51 cm); reddish yellow (5YR 6/6) extremely cobbly silty clay loam, yellowish red (5YR 4/6) moist; 32 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; common very fine to coarse roots; many very fine and common fine and medium vesicular and tubular pores; common distinct continuous clay films on faces of peds; noneffervescent; 30 percent gravel, 30 percent cobbles, and 10 percent stones; moderately acid, pH 6.0 by pH meter 1:1 water; gradual smooth boundary.

Bt3—20 to 33 inches (51 to 84 cm); reddish yellow (5YR 6/6) very cobbly silty clay, yellowish red (5YR 4/6) moist; 41 percent clay; moderate medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; common very fine to coarse roots; many very fine and fine and common medium vesicular and tubular pores; many prominent continuous clay films on faces of peds; noneffervescent; 15 percent gravel, 30 percent cobbles, and 10 percent stones; moderately acid, pH 5.9 by pH meter 1:1 water; gradual smooth boundary.

Bt4—33 to 47 inches (84 to 119 cm); reddish yellow (5YR 6/6) very cobbly clay, yellowish red (5YR 4/6) moist; 46 percent clay; moderate medium subangular blocky structure; slightly hard, friable, very sticky, very plastic; common very fine to coarse roots; many very fine and fine and common medium tubular pores; many prominent continuous clay films on faces of peds; noneffervescent; 15

percent gravel, 15 percent cobbles, and 10 percent stones; moderately acid, pH 5.9 by pH meter 1:1 water; clear smooth boundary.

Bt5—47 to 58 inches (119 to 147 cm); reddish yellow (5YR 6/6) extremely gravelly clay, yellowish red (5YR 4/6) moist; 46 percent clay; moderate medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; common very fine to coarse roots; common very fine to medium tubular pores; many prominent continuous clay films on faces of peds; noneffervescent; 30 percent gravel, 20 percent cobbles, and 20 percent stones; moderately acid, pH 6.0 by pH meter 1:1 water; abrupt wavy boundary.

R—58 inches (147 cm); very strongly cemented metavolcanic bedrock.

Type location: Butte County, California; about 1.5 miles south-southeast of Sawmill Peak, approximately 2,150 feet north and 2,050 feet west of the southeast corner of sec. 5, T. 22 N., R. 4 E.; 39 degrees, 47 minutes, 27.1 seconds north latitude and 121 degrees, 33 minutes, 3.1 seconds west longitude; NAD83; USGS Quad: Paradise East, California.

Range in Characteristics

The depth to lithic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 53 to 59 degrees F (12 to 15 degrees C). The soil moisture control section is dry in all parts from about July to October (about 90 days). The particle-size control section averages 35 to 45 percent clay and 35 to 70 percent rock fragments. Mineralogy is mixed. Rock fragments on the surface range from 10 to 30 percent gravel, 0 to 20 percent cobbles, 0 to 15 percent stones, and 0 to 5 percent boulders.

The A horizon has dry color of 5YR 5/4, 6/4, or 7/4 or 7.5YR 6/6 or 6/4. Moist color is 5YR 3/3, 4/3, or 4/4. The horizon is silt loam, loam, or the gravelly or very gravelly analogs of those textures. The content of clay ranges from 18 to 27 percent. The horizon has 10 to 45 percent gravel, 0 to 25 percent cobbles, and 0 to 15 percent stones. Reaction is moderately acid or slightly acid.

The upper part of the Bt horizon has dry color of 2.5YR 5/6 or 6/6, 5YR 6/6 or 7/6, or 7.5YR 6/6. Moist color is 2.5YR 4/6 or 5YR 4/3, 4/4, or 4/6. Texture is gravelly clay loam, very cobbly clay loam, very cobbly silty clay loam, or extremely cobbly silty clay loam. The content of clay ranges from 27 to 35 percent. The content of gravel is 15 to 35 percent, the content of cobbles is 5 to 35 percent, and the content of stones is 0 to 15 percent. Reaction is moderately acid or slightly acid.

The lower part of the Bt horizon has dry color of 2.5YR 5/6 or 6/6 or 5YR 6/6, 6/8, or 7/6. Moist color is 2.5YR 4/6 or 5YR 4/6, 5/6, 5/8, or 6/8. Texture is very gravelly clay loam, cobbly clay loam, very cobbly clay loam, extremely gravelly clay, very cobbly clay, or very cobbly silty clay. The content of clay ranges from 35 to 50 percent. The content of gravel is 15 to 35 percent, the content of cobbles is 10 to 40 percent, and the content of stones is 10 to 20 percent. Reaction is moderately acid or slightly acid.

Hamslough Series

The Hamslough series consists of moderately deep, poorly drained soils that formed in alluvium derived from volcanic rocks. These soils are in channels on low stream terraces and strath terraces. Slopes range from 0 to 2 percent. The mean annual precipitation is about 26 inches (660 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Clayey-skeletal, smectitic, thermic Typic Petraquepts

Typical Pedon

Hamslough clay, on a south-facing slope of less than 1 percent, under a cover of ryegrass, spike rush, and coyote thistle, at an elevation of 191 feet (58 m). When

described on 4/10/2000, the soil was slightly moist to a depth of 3 inches (8 cm) and moist from 3 to 55 inches (8 to 140 cm). (Colors are for dry soil unless otherwise noted.)

- A1—0 to 3 inches (0 to 8 cm); dark gray (7.5YR 4/1) clay, dark brown (7.5YR 3/2) moist; 50 percent clay; moderate medium and coarse subangular blocky structure; very hard, friable, very sticky, very plastic; many very fine roots; few very fine and fine tubular and irregular pores; 20 percent fine threadlike strong brown (7.5YR 5/6) oxidized iron masses on surfaces along root channels; 5 percent gravel; neutral, pH 6.8 by Hellige-Truog; clear smooth boundary.
- A2—3 to 14 inches (8 to 36 cm); dark gray (7.5YR 4/1) cobbly clay, brown (7.5YR 4/2) moist; 50 percent clay; moderate fine and medium subangular blocky structure; very hard, friable, very sticky, very plastic; common very fine roots; few very fine and fine tubular pores; 10 percent gravel and 15 percent cobbles; slightly alkaline, pH 7.5 by Hellige-Truog; abrupt smooth boundary.
- Bw—14 to 19 inches (36 to 48 cm); light brown (7.5YR 6/3) extremely gravelly clay, brown (7.5YR 5/3) moist; 50 percent clay; moderate fine and medium subangular blocky structure; very hard, friable, very sticky, very plastic; common very fine roots; few very fine and fine tubular pores; 15 percent cobbles and 50 percent gravel; slightly alkaline, pH 7.8 by Hellige-Truog; gradual smooth boundary.
- Bg—19 to 27 inches (48 to 69 cm); light brownish gray (2.5Y 6/2) extremely gravelly sandy clay, grayish brown (2.5Y 5/2) moist; 50 percent clay; weak fine subangular blocky structure; very hard, friable, very sticky, very plastic; few very fine roots; few very fine and fine tubular pores; 15 percent medium irregular brown (7.5YR 5/4) oxidized iron masses in the matrix; 20 percent cobbles and 50 percent gravel; moderately alkaline, pH 8.0 by Hellige-Truog; clear smooth boundary.
- 2Bqm—27 to 55 inches (69 to 140 cm); reddish yellow (7.5YR 7/6), strongly cemented duripan, brown (7.5YR 5/4) moist; massive; extremely hard, firm, strongly cemented by silica; few very fine and fine tubular and irregular pores; strongly alkaline, pH 8.5 by Hellige-Truog.

Type location: Butte County, California; about 1.7 miles south of the Neal Road Landfill, approximately 100 feet north and 1,750 feet west of the southeast corner of sec. 23, T. 21 N., R. 2 E.; 39 degrees, 39 minutes, 16 seconds north latitude and 121 degrees, 43 minutes, 6 seconds west longitude; NAD83; USGS Quad: Hamlin Canyon, California.

Range in Characteristics

Depth to the duripan is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 62 to 66 degrees F (17 to 19 degrees C). The particle-size control section averages 45 to 55 percent clay and 35 to 60 percent rock fragments, mostly gravel. Mineralogy is smectitic. Reversible, surface-initiated cracks 0.25 to 1 inch (0.6 to 3 cm) wide extend to a depth of 14 inches (36 cm) from 150 to 180 days when the soils are not irrigated. A fluctuating water table can occur between a depth of 60 inches (152 cm) and the surface of the soil from December through May.

Redoximorphic features, such as soft oxidized iron masses with color of 7.5YR 5/4 or 5/6, occur throughout the profile. Rock fragments on the surface range from 0 to 20 percent gravel and 0 to 25 percent cobbles. Some pedons have a Bss horizon.

The A horizon has dry color of 7.5YR 4/1, 4/2, or 5/2 or 10YR 5/1. Moist color is 7.5YR 3/2 or 4/2 or 10YR 4/1. Texture is clay, gravelly clay, or cobbly clay. The content of clay ranges from 40 to 60 percent. The horizon has 5 to 15 percent gravel and 0 to 15 percent cobbles. Reaction is neutral or slightly alkaline.

The Bw horizon has dry color of 7.5YR 5/2, 6/3, or 7/4 or 10YR 4/1. Moist color is 7.5YR 4/2, 4/3, 5/3, or 5/4 or 10YR 4/1. Texture is clay, gravelly clay, very gravelly clay, or extremely gravelly clay. The content of clay ranges from 40 to 60 percent. The

horizon has 10 to 50 percent gravel and 0 to 25 percent cobbles. Reaction is slightly alkaline or moderately alkaline.

The Bg horizon has dry color of 2.5Y 6/2 or 10YR 4/1. Moist color is 2.5Y 5/2 or 10YR 4/1. Texture is extremely gravelly clay, extremely gravelly sandy clay, cobbly clay, or very gravelly sandy clay loam. The content of clay ranges from 30 to 60 percent. The horizon has 20 to 50 percent gravel and 15 to 25 percent cobbles. Reaction is moderately alkaline or strongly alkaline.

Haplic Palexeralfs

Haplic Palexeralfs consist of very deep, moderately well drained soils that formed in alluvium derived from basalt and mixed sediments. These soils are on low stream terraces. Slopes range from 0 to 5 percent. The mean annual precipitation is about 28 inches (711 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Loamy-skeletal, mixed, superactive, thermic Haplic Palexeralfs

Typical Pedon

Haplic Palexeralfs, on a west-facing slope of 5 percent, under a cover of annual grasses, forbs, and scattered willow and valley oak, at an elevation of 380 feet (115 m). When described on 6/3/2001, the soil was dry to a depth of 45 inches (114 cm) and slightly moist from 45 to 64 inches (114 to 163 cm). (Colors are for dry soil unless otherwise noted.)

- A—0 to 3 inches (0 to 8 cm); brown (10YR 5/3) loam, very dark grayish brown (10YR 3/2) moist; 18 percent clay; moderate fine subangular blocky structure parting to moderate fine granular; slightly hard, friable, slightly sticky, slightly plastic; many very fine and fine roots; many fine irregular pores; 10 percent subrounded basalt gravel; slightly acid, pH 6.5 by Hellige-Truog; clear wavy boundary.
- Bt1—3 to 9 inches (8 to 23 cm); brown (10YR 5/3) very gravelly loam, very dark grayish brown (10YR 3/2) moist; 22 percent clay; moderate medium subangular blocky structure; hard, firm, moderately sticky, slightly plastic; many very fine and fine and common medium roots; common fine and medium irregular pores; 10 percent discontinuous faint clay films on surfaces along pores; 10 percent subrounded basalt cobbles and 25 percent subrounded basalt gravel; slightly acid, pH 6.5 by Hellige-Truog; clear wavy boundary.
- Bt2—9 to 22 inches (23 to 56 cm); brown (10YR 5/3) very gravelly clay loam, brown (7.5YR 4/2) moist; 30 percent clay; moderate medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; common medium and coarse roots; common fine and medium tubular pores; 15 percent discontinuous faint clay films on surfaces along pores; 10 percent subrounded basalt cobbles and 35 percent subrounded basalt gravel; slightly acid, pH 6.3 by Hellige-Truog; clear wavy boundary.
- 2Bt3—22 to 31 inches (56 to 79 cm); pale brown (10YR 6/3) extremely gravelly sandy clay, brown (7.5YR 4/2) moist; 38 percent clay; moderate medium subangular blocky structure; very hard, firm, moderately sticky, moderately plastic; common medium roots; common fine tubular pores; 15 percent discontinuous faint clay films on surfaces along pores; 20 percent subrounded basalt cobbles and 45 percent subrounded basalt gravel; slightly acid, pH 6.3 by Hellige-Truog; clear wavy boundary.
- 2Bt4—31 to 45 inches (79 to 114 cm); yellowish brown (10YR 5/4) extremely gravelly sandy clay loam, brown (7.5YR 4/3) moist; 35 percent clay; moderate coarse subangular blocky structure; very hard, very firm, moderately sticky, moderately plastic; few medium roots; common fine tubular pores; 15 percent discontinuous

distinct clay films on surfaces along pores; 15 percent subrounded basalt cobbles, 25 percent subrounded basalt gravel, and 25 percent subrounded basalt stones; slightly acid, pH 6.3 by Hellige-Truog; clear wavy boundary.

2Bt5—45 to 52 inches (114 to 132 cm); brown (10YR 5/3) extremely gravelly sandy clay, brown (7.5YR 4/3) moist; 39 percent clay; moderate medium subangular blocky structure; hard, firm, very sticky, moderately plastic; few fine and medium roots; common fine tubular pores; 50 percent discontinuous prominent clay films on surfaces along pores; 2 percent fine irregular brown (7.5YR 4/4 dry) oxidized iron masses and 10 percent fine irregular black (N 2/0 dry) manganese masses; 10 percent subrounded basalt cobbles, 15 percent subrounded basalt stones, and 35 percent subrounded basalt gravel; slightly acid, pH 6.5 by Hellige-Truog; clear wavy boundary.

3Bt6—52 to 64 inches (132 to 163 cm); brown (10YR 5/3) extremely cobbly sandy clay, brown (7.5YR 4/3) moist; 42 percent clay; moderate medium and coarse subangular blocky structure; hard, firm, very sticky, moderately plastic; few fine roots; common fine irregular pores; 60 percent discontinuous prominent clay films on surfaces along pores; 5 percent fine irregular black (N 2/0 dry) manganese masses and 5 percent fine irregular brown (7.5YR 4/4 dry) oxidized iron masses; 20 percent subrounded basalt stones, 25 percent subrounded basalt gravel, and 35 percent subrounded basalt cobbles; neutral, pH 7.0 by Hellige-Truog.

Type location: Butte County, California; about 3.4 miles northwest of Oroville; adjacent to Little Cottonwood Creek, in Schrimmer Ravine, approximately 300 feet west and 2,950 feet north of the southeast corner of sec. 25, T. 20 N., R. 3 E.; 39 degrees, 33 minutes, 39 seconds north latitude and 121 degrees, 34 minutes, 39 seconds west longitude; NAD27; USGS Quad: Oroville, California.

Range in Characteristics

Depth to an extremely weakly cemented duripan is 60 to 80 inches (152 to 203 cm) or more. The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The particle-size control section averages 22 to 30 percent clay and 35 to 50 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur at a depth of 60 to 80 inches (152 to 203 cm) or more from December through April. Rock fragments on the surface range from 0 to 10 percent gravel and 5 to 50 percent cobbles.

The A horizon has dry color of 10YR 4/3 or 5/3. Moist color is 10YR 3/2 or 3/3. Texture is loam, gravelly fine sandy loam, gravelly loam, very gravelly loam, or very gravelly fine sandy loam. The content of clay ranges from 15 to 18 percent. The horizon has 10 to 40 percent gravel and 0 to 10 percent cobbles. The content of organic matter is 2 to 4 percent. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 10YR 5/3, 5/4, or 6/3. Moist color is 10YR 3/2, 3/3, or 4/3 or 7.5YR 4/2. Texture is very gravelly loam, very gravelly sandy clay loam, very gravelly clay loam, or extremely gravelly sandy clay loam. The content of clay ranges from 22 to 30 percent. The horizon has 25 to 65 percent gravel and 5 to 20 percent cobbles. The content of organic matter is 0.5 to 2 percent. Reaction is moderately acid or slightly acid.

The 2Bt horizon has dry color of 10YR 4/3, 5/3, 5/4, or 6/3 or 7.5YR 6/3. Moist color is 10YR 3/4 or 4/4 or 7.5YR 4/2, 4/3, or 5/4. Texture is extremely gravelly sandy clay, very cobbly sandy clay loam, extremely gravelly sandy clay loam, extremely cobbly sandy clay loam, or extremely cobbly sandy clay. The content of clay ranges from 25 to 40 percent. The horizon has 35 to 55 percent gravel, 10 to 40 percent cobbles, and 0 to 25 percent stones. The content of organic matter is 0.5 to 1 percent. Redoximorphic features range from 0 to 2 percent oxidized iron masses and 2 to 10 percent manganese masses. Reaction is slightly acid.

The 3Bt horizon has dry color of 10YR 4/3 or 5/3 or 7.5YR 6/4. Moist color is 10YR 3/3 or 7.5YR 4/3 or 5/4. Texture is extremely gravelly sandy clay, extremely gravelly clay, extremely cobbly sandy clay, or extremely cobbly clay. The content of clay ranges from 40 to 50 percent. The horizon has 25 to 50 percent gravel, 30 to 40 percent cobbles, and 0 to 20 percent stones. The content of organic matter is 0.2 to 0.8 percent. Redoximorphic features range from 0 to 5 percent oxidized iron masses and 5 to 10 percent oxidized manganese masses. Reaction is neutral.

Haploxeralfs

Haploxeralfs consist of moderately deep or deep, well drained soils that formed in colluvium derived from metavolcanic and metasedimentary rocks. These soils are on backslopes in canyons on Sierra Nevada foothills. Slopes range from 70 to 110 percent. The mean annual precipitation is about 62 inches (1,575 mm), and the mean annual air temperature is about 56 degrees F (13 degrees C).

Taxonomic class: Loamy-skeletal, mixed, active, thermic Ultic Haploxeralfs

Typical Pedon

Haploxeralfs, on a west-facing slope of 80 percent, under a cover of shrub interior live oak, Pacific poison oak, toyon, whiteleaf manzanita, and canyon live oak, at an elevation of 1,400 feet (427 m). When described on 6/30/1998, the soil was dry to a depth of 22 inches (56 cm) and slightly moist from 22 to 47 inches (56 to 119 cm). (Colors are for dry soil unless otherwise noted.)

Oi—0 to 0.5 inch (0 to 1 cm); slightly decomposed plant material; abrupt smooth boundary.

A—0.5 inch to 4 inches (1 to 10 cm); very pale brown (10YR 7/3) very gravelly loam, brown (7.5YR 4/3) moist; 26 percent clay; strong fine and medium subangular blocky structure; moderately hard, friable, moderately sticky, slightly plastic; many very fine and fine roots; many very fine to medium irregular and tubular and few coarse tubular pores; 10 percent cobbles and 35 percent gravel; slightly acid, pH 6.4 by Hellige-Truog; clear smooth boundary.

Bt1—4 to 9 inches (10 to 23 cm); very pale brown (10YR 7/4) very gravelly clay loam, brown (7.5YR 4/3) moist; 29 percent clay; moderate fine and medium subangular blocky structure; moderately hard, friable, moderately sticky, slightly plastic; common very fine to coarse roots; many very fine to coarse tubular and irregular pores; 80 percent continuous faint clay films; 20 percent cobbles and 40 percent gravel; slightly acid, pH 6.2 by Hellige-Truog; clear smooth boundary.

Bt2—9 to 13 inches (23 to 33 cm); very pale brown (10YR 7/4) very gravelly clay loam, brown (7.5YR 4/3) moist; 32 percent clay; moderate fine subangular blocky structure; moderately hard, friable, moderately sticky, slightly plastic; common very fine to coarse roots; many very fine to coarse tubular and irregular pores; 80 percent continuous faint clay films; 10 percent cobbles and 45 percent gravel; moderately acid, pH 6.1 by Hellige-Truog; clear smooth boundary.

Bt3—13 to 22 inches (33 to 56 cm); very pale brown (10YR 7/4) extremely gravelly clay loam, brown (7.5YR 4/4) moist; 34 percent clay; moderate fine subangular blocky structure; moderately hard, friable, moderately sticky, moderately plastic; common very fine to coarse roots; many very fine to coarse irregular and tubular pores; 80 percent continuous faint clay films; 5 percent stones, 35 percent cobbles, and 40 percent gravel; moderately acid, pH 6.1 by Hellige-Truog; clear smooth boundary.

Bt4—22 to 31 inches (56 to 79 cm); very pale brown (10YR 7/4) extremely gravelly clay loam, strong brown (7.5YR 4/6) moist; 35 percent clay; moderate fine

subangular blocky structure; moderately hard, friable, moderately sticky, moderately plastic; common very fine to coarse roots; many very fine to coarse tubular and irregular pores; 80 percent continuous faint clay films; 10 percent stones, 25 percent cobbles, and 30 percent gravel; slightly acid, pH 6.2 by Hellige-Truog; gradual smooth boundary.

Bt5—31 to 47 inches (79 to 119 cm); very pale brown (10YR 7/4) extremely gravelly clay loam, strong brown (7.5YR 4/6) moist; 36 percent clay; moderate fine subangular blocky structure; moderately hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine to coarse tubular and irregular pores; 80 percent continuous faint clay films; 15 percent stones, 30 percent cobbles, and 40 percent gravel; slightly acid, pH 6.2 by Hellige-Truog; abrupt irregular boundary.

R—47 inches (119 cm); indurated metavolcanic bedrock.

Type location: Butte County, California; about 1.1 miles south of Bear Lake, approximately 350 feet south and 2,200 feet east of the northwest corner of sec. 31, T. 24 N., R. 3 E.; 39 degrees, 54 minutes, 8 seconds north latitude and 121 degrees, 41 minutes, 13 seconds west longitude; NAD83; USGS Quad: Cohasset, California.

Range in Characteristics

The depth to lithic bedrock is 20 to 60 inches (51 to 152 cm). The mean annual soil temperature is 59 to 69 degrees F (15 to 21 degrees C). The soil moisture control section is dry in all parts from about June to November (about 150 days). The particle-size control section averages 18 to 35 percent clay and 35 to 80 percent rock fragments, mostly gravel. Mineralogy is mixed. Rock fragments on the surface range from 15 to 50 percent gravel, 5 to 25 percent cobbles, 0 to 20 percent stones, and 0 to 20 percent boulders.

The A horizon has dry color of 10YR 6/3 or 7/3, 7.5YR 6/3 or 7/3, or 5YR 5/4 or 6/4. Moist color is 7.5YR 4/2 or 4/3 or 5YR 3/3. Texture is loam, gravelly loam, very gravelly loam, or gravelly sandy loam. The content of clay ranges from 17 to 27 percent. The horizon has 10 to 50 percent gravel, 0 to 15 percent cobbles, 0 to 15 percent stones, and 0 to 15 percent boulders. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 10YR 6/4 or 7/4; 7.5YR 5/4, 6/4, 7/4, or 6/3; or 5YR 5/4, 5/6, or 6/6. Moist color is 7.5YR 4/3, 4/4, 4/6, or 5/4 or 5YR 3/4, 4/4, or 4/6. Texture is gravelly loam, very gravelly loam, very cobbly loam, gravelly clay loam, very gravelly clay loam, or extremely gravelly clay loam. The content of clay ranges from 20 to 40 percent. The horizon has 15 to 50 percent gravel, 0 to 35 percent cobbles, 0 to 20 percent stones, and 0 to 20 percent boulders. Reaction ranges from strongly acid to neutral.

Haploxeralfs, Terrace

Haploxeralfs, terrace, consist of very deep, well drained soils that formed in alluvium derived from mixed rock sources. These soils are on stream terraces on the bottom of canyons on Cascade foothills. Slopes range from 0 to 8 percent. The mean annual precipitation is about 48 inches (1,219 mm), and the mean annual air temperature is about 57 degrees F (14 degrees C).

Taxonomic class: Haploxeralfs

Typical Pedon

Haploxeralfs, terrace, on a northeast-facing slope of 1 percent, under a cover of yellow starthistle and soft chess, at an elevation of 920 feet (280 m). When described on 10/5/1998, the soil was very slightly moist to a depth of 5 inches (13 cm) and dry below that depth. (Colors are for dry soil unless otherwise noted.)

- A—0 to 5 inches (0 to 13 cm); yellowish brown (10YR 5/4) gravelly loam, brown (10YR 4/3) moist; 22 percent clay; moderate fine and medium subangular blocky structure; hard, friable, slightly sticky, slightly plastic; many very fine roots; common very fine and fine and few medium tubular and irregular pores; 5 percent cobbles and 25 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.
- Bt1—5 to 11 inches (13 to 28 cm); yellowish brown (10YR 5/4) gravelly loam, brown (7.5YR 4/3) moist; 24 percent clay; moderate fine and medium subangular blocky structure; hard, friable, slightly sticky, slightly plastic; common very fine and fine roots; many very fine and fine and common medium tubular pores; 40 percent discontinuous distinct clay films; 5 percent cobbles, 5 percent stones, and 20 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; diffuse smooth boundary.
- Bt2—11 to 18 inches (28 to 46 cm); brown (7.5YR 5/4) very gravelly loam, brown (7.5YR 4/3) moist; 27 percent clay; moderate fine and medium subangular blocky structure; moderately hard, friable, moderately sticky, moderately plastic; common very fine and fine roots; many very fine to medium tubular pores; 80 percent continuous distinct clay films; 5 percent stones, 10 percent cobbles, and 20 percent gravel; slightly acid, pH 6.6 by Hellige-Truog; diffuse smooth boundary.
- Bt3—18 to 32 inches (46 to 81 cm); brown (7.5YR 5/4) very cobbly clay loam, brown (7.5YR 4/4) moist; 34 percent clay; moderate fine and medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine to medium tubular pores; 90 percent continuous distinct clay films; 10 percent stones, 10 percent boulders, 20 percent cobbles, and 20 percent gravel; neutral, pH 6.7 by Hellige-Truog; diffuse smooth boundary.
- Bt4—32 to 48 inches (81 to 122 cm); brown (7.5YR 5/4) extremely cobbly clay loam, brown (7.5YR 4/4) moist; 31 percent clay; moderate fine subangular blocky structure; hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine and fine and common medium tubular pores; 90 percent continuous distinct clay films; 15 percent boulders, 20 percent gravel, 20 percent stones, and 30 percent cobbles; neutral, pH 6.8 by Hellige-Truog; diffuse smooth boundary.
- Bt5—48 to 63 inches (122 to 160 cm); brown (7.5YR 5/4) extremely cobbly sandy clay loam, brown (7.5YR 4/4) moist; 27 percent clay; moderate fine subangular blocky structure; very hard, friable, moderately sticky, moderately plastic; few very fine to medium roots; many very fine and fine tubular pores; 90 percent continuous distinct clay films; 15 percent boulders, 20 percent stones, 20 percent gravel, and 30 percent cobbles; neutral, pH 6.9 by Hellige-Truog.

Type location: Butte County, California; about 1.7 miles southwest of Forest Ranch, approximately 1,400 feet north and 1,250 feet east of the southwest corner of sec. 12, T. 23 N., R. 2 E.; 39 degrees, 51 minutes, 44 seconds north latitude and 121 degrees, 42 minutes, 34 seconds west longitude; NAD83; USGS Quad: Paradise West, California.

Range in Characteristics

The depth to bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 59 to 62 degrees F (15 to 17 degrees C). The soil moisture control section is dry in all parts from about May to October (about 150 days). The particle-size control section averages 20 to 35 percent clay and 15 to 60 percent rock fragments, mostly cobbles. Mineralogy is mixed. Rock fragments on the surface range from 5 to 25 percent gravel, 0 to 15 percent cobbles, 0 to 5 percent stones, and 0 to 5 percent boulders.

The A horizon has dry color of 10YR 5/2, 5/3, 5/4, or 6/4. Moist color is 10YR 3/2, 4/2, or 4/3 or 7.5YR 4/2. Texture is loam, gravelly loam, or fine sandy loam. The content of clay ranges from 15 to 26 percent. The horizon has 3 to 30 percent gravel,

0 to 5 percent cobbles, 0 to 5 percent stones, and 0 to 5 percent boulders. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 10YR 5/3, 5/4, 6/3, or 6/4 or 7.5YR 5/4 or 6/4. Moist color is 10YR 4/3 or 4/4 or 7.5YR 3/4, 4/3, or 4/4. Texture is loam, gravelly loam, very gravelly loam, sandy clay loam, extremely gravelly sandy clay loam, extremely cobbly sandy clay, loam, clay loam, very cobbly clay loam, or extremely cobbly clay loam. The content of clay ranges from 18 to 35 percent. The horizon has 5 to 40 percent gravel, 0 to 30 percent cobbles, 0 to 25 percent stones, and 0 to 20 percent boulders. Reaction ranges from moderately acid to neutral.

Haploxerands

Haploxerands consist of moderately deep to very deep, well drained soils that formed in glacial outwash derived from granitic and volcanic rocks. These soils are on alluvial flats in Cascade and Sierra Nevada mountain valleys. Slopes range from 0 to 15 percent. The mean annual precipitation is about 80 inches (2,032 mm), and the mean annual air temperature is about 49 degrees F (9 degrees C).

Taxonomic class: Haploxerands

Typical Pedon

Haploxerands, on an east-northeast-facing slope of 15 percent, under a cover of white fir, sugar pine, and red fir, at an elevation of 4,280 feet (1,305 m). When described on 7/19/2000, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

- Oi—0 to 0.5 inch (0 to 1 cm); slightly decomposed plant material; abrupt smooth boundary.
- A1—0.5 inch to 2 inches (1 to 5 cm); pale brown (10YR 6/3) medial sandy loam, brown (10YR 4/3) moist; 5 percent clay; weak fine and medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; many very fine and fine roots; many very fine and fine tubular and irregular pores; 10 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 10.5; clear smooth boundary.
- A2—2 to 5 inches (5 to 13 cm); pale brown (10YR 6/3) gravelly medial sandy loam, brown (10YR 4/3) moist; 3 percent clay; weak fine and medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; many very fine to medium roots; many very fine and fine tubular and irregular pores; 15 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 11.0; gradual smooth boundary.
- Bw1—5 to 12 inches (13 to 30 cm); pale brown (10YR 6/3) medial sandy loam, brown (10YR 4/3) moist; 3 percent clay; weak fine and medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; many very fine to coarse roots; many very fine and fine tubular and irregular pores; 10 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 11.0; gradual smooth boundary.
- Bw2—12 to 23 inches (30 to 58 cm); pale brown (10YR 6/3) gravelly medial sandy loam, brown (10YR 4/3) moist; 2 percent clay; weak fine and medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; many very fine to medium and common coarse roots; many very fine and fine tubular and irregular pores; 15 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 11.0; gradual smooth boundary.
- Bw3—23 to 30 inches (58 to 76 cm); very pale brown (10YR 7/3) gravelly coarse sandy loam, brown (10YR 4/3) moist; 2 percent clay; weak fine and medium subangular blocky structure parting to single grain; soft, very friable, nonsticky, nonplastic; many very fine and fine and common medium and coarse roots; many very fine and fine tubular and irregular pores; 20 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 11.0; diffuse smooth boundary.

Bw4—30 to 42 inches (76 to 107 cm); very pale brown (10YR 7/3) gravelly coarse sandy loam, brown (10YR 4/3) moist; 2 percent clay; weak fine and medium subangular blocky structure parting to single grain; soft, very friable, nonsticky, nonplastic; common very fine to medium roots; many very fine and fine tubular and irregular pores; 20 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 10.0; diffuse smooth boundary.

Bw5—42 to 60 inches (107 to 152 cm); very pale brown (10YR 7/3) gravelly coarse sandy loam, brown (10YR 4/3) moist; 2 percent clay; weak fine and medium subangular blocky structure parting to single grain; soft, very friable, nonsticky, nonplastic; common very fine to medium roots; many very fine and fine tubular and irregular pores; 15 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 10.0; diffuse smooth boundary.

Bw6—60 to 80 inches (152 to 203 cm); very pale brown (10YR 7/3) coarse sandy loam, brown (10YR 4/3) moist; 2 percent clay; weak fine and medium subangular blocky structure parting to single grain; soft, very friable, nonsticky, nonplastic; common very fine to medium roots; many very fine and fine irregular and tubular pores; 10 percent gravel; slightly acid, pH 6.5 by Hellige-Truog.

Type location: Plumas County, California; about 0.63 mile southwest of Campbell Cow Camp, approximately 200 feet south and 850 feet east of the northwest corner of sec. 23, T. 24 N, R. 5 E.; 39 degrees, 55 minutes, 44 seconds north latitude and 121 degrees, 23 minutes, 16 seconds west longitude; NAD27; USGS Quad: Kimshew Point, California.

Range in Characteristics

The depth to bedrock is 20 to more than 80 inches (51 to 203 cm). The mean annual soil temperature is 40 to 47 degrees F (4 to 8 degrees C). The soil moisture control section is dry in all parts from about July to October (about 120 days). The particle-size control section averages 2 to 20 percent clay and 5 to 35 percent rock fragments, mostly gravel. NaF pH is 9.8 to 11 to a depth of 40 inches (102 cm). Rock fragments on the surface range from 5 to 35 percent gravel, 0 to 15 percent cobbles, 0 to 5 percent stones, and 0 to 5 percent boulders.

The A horizon has dry color of 10YR 5/2, 5/3, 6/2, or 6/3 or 7.5YR 6/4. Moist color is 10YR 3/2 or 4/3 or 7.5YR 4/3. Texture is medial sandy loam, gravelly medial sandy loam, medial coarse sandy loam, or gravelly medial coarse sandy loam. The content of clay ranges from 3 to 18 percent. The content of gravel is 5 to 25 percent. Reaction is moderately acid or slightly acid.

The Bw horizon has dry color of 10YR 5/3, 6/3, 7/3, or 8/6 or 7.5YR 6/4, 7/6, or 8/4. Moist color is 10YR 3/2, 4/2, 4/3, or 5/3 or 7.5YR 4/4, 5/6, or 5/8. Texture is sandy loam, gravelly sandy loam, coarse sandy loam, gravelly coarse sandy loam, or gravelly loamy coarse sand. The content of clay ranges from 1 to 20 percent. The content of gravel is 2 to 35 percent. Reaction ranges from very strongly acid to slightly acid.

Haploxerands, Granitic Till

Haploxerands, granitic till, consist of moderately deep to very deep, moderately well drained or well drained soils that formed in glacial till derived from quartz diorite, andesite, and basalt. These soils are on moraines in the Sierra Nevada Mountains. Slopes range from 2 to 50 percent. The mean annual precipitation is about 82 inches (2,083 mm), and the mean annual air temperature is about 49 degrees F (9 degrees C).

Taxonomic class: Frigid Typic Haploxerands

Typical Pedon

Haploxerands, granitic till, on a southeast-facing slope of 14 percent, under a cover of white fir, sugar pine, incense cedar, California black oak, ponderosa pine, red fir, and shrubs, at an elevation of 4,945 feet (1,507 m). When described on 7/13/2000, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

- Oi—0 to 2 inches (0 to 5 cm); slightly decomposed plant material; abrupt smooth boundary.
- A1—2 to 5 inches (5 to 13 cm); brown (10YR 5/3) medial sandy loam, very dark grayish brown (10YR 3/2) moist; 5 percent clay; weak fine and medium subangular blocky structure; loose, nonsticky, nonplastic; many very fine and fine and common medium roots; many very fine and fine and common medium irregular and tubular pores; 5 percent gravel; moderately acid, pH 6.0 by Hellige-Truog; NaF pH 11.5; gradual smooth boundary.
- A2—5 to 12 inches (13 to 30 cm); brown (10YR 5/3) medial sandy loam, dark grayish brown (10YR 4/2) moist; 4 percent clay; weak fine and medium subangular blocky structure; loose, nonsticky, nonplastic; many very fine to medium and common coarse roots; many very fine and fine and common medium tubular and irregular pores; 10 percent gravel; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 11.0; gradual smooth boundary.
- AB—12 to 22 inches (30 to 56 cm); light brownish gray (10YR 6/2) stony medial sandy loam, dark grayish brown (10YR 4/2) moist; 3 percent clay; weak fine and medium subangular blocky structure parting to single grain; loose, nonsticky, nonplastic; many very fine to medium and common coarse roots; many very fine and fine and common medium tubular and irregular pores; 5 percent stones, 5 percent cobbles, and 5 percent gravel; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 10.0; gradual smooth boundary.
- 2Bw1—22 to 41 inches (56 to 104 cm); very pale brown (10YR 7/3) stony coarse sandy loam, brown (10YR 4/3) moist; 3 percent clay; single grain; loose, nonsticky, nonplastic; common very fine to medium and few coarse roots; many very fine and fine and common medium tubular and irregular pores; 10 percent stones, 10 percent cobbles, and 10 percent gravel; moderately acid, pH 5.8 by Hellige-Truog; NaF pH 9.4; gradual wavy boundary.
- 2Bw2—41 to 55 inches (104 to 140 cm); very pale brown (10YR 7/4) extremely bouldery coarse sandy loam, yellowish brown (10YR 5/4) moist; 2 percent clay; single grain; loose, nonsticky, nonplastic; common very fine to medium and few coarse roots; many very fine to medium and few coarse tubular pores; 10 percent gravel, 15 percent stones, 20 percent very weakly cemented quartz diorite boulders, and 20 percent cobbles; strongly acid, pH 5.5 by Hellige-Truog; gradual smooth boundary.
- 2Bw3—55 to 74 inches (140 to 188 cm); very pale brown (10YR 7/4) extremely cobbly loamy coarse sand, yellowish brown (10YR 5/4) moist; 2 percent clay; weak fine subangular blocky structure parting to single grain; loose, nonsticky, nonplastic; common very fine and fine and few medium roots; many very fine and fine and common medium tubular pores; 10 percent very weakly cemented quartz diorite boulders, 15 percent stones, 20 percent cobbles, and 20 percent gravel; strongly acid, pH 5.5 by Hellige-Truog; clear smooth boundary.
- 2Bw4—74 to 87 inches (188 to 221 cm); very pale brown (10YR 8/4) extremely bouldery loamy coarse sand, brownish yellow (10YR 6/6) moist; 1 percent clay; single grain; loose, nonsticky, nonplastic; few very fine to medium roots; many very fine to medium irregular and tubular pores; 40 percent coarse irregular red (2.5YR 5/6 dry) oxidized iron masses; 10 percent stones, 10 percent cobbles, 15 percent gravel, and 30 percent very weakly cemented quartz diorite boulders; moderately acid, pH 6.0 by Hellige-Truog.

Type location: Butte County, California; about 1.5 miles north of Ramsey Bar, approximately 1,830 feet south and 1,720 feet west of the northeast corner of sec. 17, T. 17 N., R. 5 E.; 39 degrees, 56 minutes, 21 seconds north latitude and 121 degrees, 26 minutes, 8 seconds west longitude; NAD83; USGS Quad: Kimshe Point, California.

Range in Characteristics

The depth to dense glacial till is 20 to more than 80 inches (51 to 203 cm). The mean annual soil temperature is 40 to 47 degrees F (4 to 8 degrees C). The soil moisture control section is dry in all parts from about July to October (about 120 days). The particle-size control section averages 2 to 6 percent clay and 20 to 80 percent rock fragments. Redoximorphic features, such as iron masses with color of 2.5YR 4/6, 5YR 4/6 or 6/8, or 7.5YR 4/6 or 7/6, occur in the 2Bw horizon. NaF pH is 9.5 to 11.5 to a depth of 20 to 40 inches (51 to 102 cm). Rock fragments on the surface range from 15 to 40 percent gravel, 5 to 40 percent cobbles, 5 to 60 percent stones, and 5 to 60 percent boulders.

The A horizon has dry color of 10YR 4/2, 4/3, 5/2, 5/3, or 6/3. Moist color is 10YR 3/1, 3/2, or 4/2. Texture is medial sandy loam, gravelly medial sandy loam, very gravelly medial sandy loam, cobbly medial sandy loam, very stony medial sandy loam, very bouldery medial sandy loam, or extremely bouldery medial sandy loam. The content of clay ranges from 4 to 8 percent. The horizon has 5 to 35 percent gravel, 0 to 25 percent cobbles, 0 to 40 percent stones, and 0 to 40 percent boulders. Reaction is moderately acid or slightly acid.

The AB horizon has dry color of 10YR 5/4, 6/2, 6/3, or 6/4. Moist color is 10YR 3/3 or 4/2. Texture is extremely cobbly medial sandy loam, stony medial sandy loam, very stony medial sandy loam, extremely stony medial sandy loam, very bouldery medial sandy loam, or extremely bouldery medial coarse sandy loam. The content of clay ranges from 3 to 6 percent. The horizon has 5 to 15 percent gravel, 5 to 30 percent cobbles, 5 to 40 percent stones, and 0 to 40 percent boulders. Reaction is moderately acid or slightly acid.

The 2Bw horizon has dry color of 10YR 6/3, 6/4, 6/6, 7/3, 7/4, 8/4, or 8/6. Moist color is 10YR 4/2, 4/3, 4/4, 5/4, or 6/6. Texture is gravelly sandy loam, very gravelly sandy loam, cobbly sandy loam, very cobbly sandy loam, extremely cobbly sandy loam, very stony sandy loam, very bouldery sandy loam, stony coarse sandy loam, extremely bouldery coarse sandy loam, extremely cobbly loamy coarse sand, extremely stony loamy coarse sand, or extremely bouldery loamy coarse sand. The content of clay ranges from 1 to 5 percent. The horizon has 5 to 60 percent gravel, 0 to 25 percent cobbles, 0 to 40 percent stones, and 0 to 50 percent boulders. Reaction ranges from very strongly acid to slightly acid.

Haploxerands, Volcanic Till

Haploxerands, volcanic till, consist of moderately deep to very deep, moderately well drained or well drained soils that formed in glacial till derived from andesite, basalt, and quartz diorite. These soils are on moraines in the Cascade and Sierra Nevada Mountains. Slopes range from 2 to 50 percent. The mean annual precipitation is about 82 inches (2,083 mm), and the mean annual air temperature is about 49 degrees F (9 degrees C).

Taxonomic class: Frigid Haploxerands

Typical Pedon

Haploxerands, volcanic till, on a northeast-facing slope of 10 percent, under a cover of white fir, incense cedar, ponderosa pine, sugar pine, California black oak, and

shrubs, at an elevation of 5,030 feet (1,533 m). When described on 7/13/2000, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

- Oi—0 to 2 inches (0 to 4 cm); slightly decomposed plant material; abrupt smooth boundary.
- A—2 to 4 inches (4 to 10 cm); brown (10YR 4/3) cobbly medial sandy loam, dark brown (7.5YR 3/3) moist; 7 percent clay; weak fine subangular blocky structure parting to single grain; loose, nonsticky, nonplastic; many very fine and fine and few medium roots; many very fine to medium and common coarse irregular and tubular pores; 5 percent gravel and 10 percent cobbles; moderately acid, pH 6.0 by Hellige-Truog; NaF pH 10.5; clear smooth boundary.
- Bw—4 to 17 inches (10 to 43 cm); brown (7.5YR 5/4) gravelly medial sandy loam, dark brown (7.5YR 3/4) moist; 10 percent clay; weak fine and medium granular structure; loose, nonsticky, nonplastic; many very fine to coarse roots; many very fine to coarse tubular pores; 5 percent stones, 10 percent cobbles, and 10 percent gravel; moderately acid, pH 5.8 by Hellige-Truog; NaF pH 11.0; clear wavy boundary.
- Bt1—17 to 37 inches (43 to 94 cm); light brown (7.5YR 6/4) gravelly sandy loam, strong brown (7.5YR 4/6) moist; 15 percent clay; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, nonplastic; many very fine to medium and few coarse roots; many very fine and fine and common medium tubular pores; 20 percent discontinuous faint clay films on surfaces along pores; 5 percent cobbles, 5 percent stones, and 15 percent gravel; moderately acid, pH 5.8 by Hellige-Truog; NaF pH 10.5; clear smooth boundary.
- Bt2—37 to 41 inches (94 to 104 cm); very pale brown (10YR 7/4) gravelly sandy loam, yellowish brown (10YR 5/4) moist; 19 percent clay; weak fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; many very fine to medium and few coarse roots; many very fine and fine and common medium tubular pores; 30 percent discontinuous faint clay films on surfaces along pores; 5 percent stones, 5 percent cobbles, and 20 percent gravel; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 9.5; clear smooth boundary.
- 2Cd1—41 to 52 inches (104 to 132 cm); light gray (10YR 7/1) gravelly sandy loam, grayish brown (10YR 5/2) moist; 7 percent clay; massive parting to moderate medium and thick platy structure; very hard, very firm, noncemented, nonsticky, nonplastic; few very fine to medium roots in cracks; few very fine tubular pores; 5 percent oxidized iron masses; 5 percent cobbles, 5 percent stones, and 10 percent gravel; very strongly acid, pH 4.8 by Hellige-Truog; abrupt smooth boundary.
- 2Cd2—52 to 80 inches (132 to 203 cm); very pale brown (10YR 7/3) gravelly sandy loam, grayish brown (10YR 5/2) moist; 3 percent clay; massive parting to moderate medium and thick platy structure; extremely hard, very firm, noncemented, nonsticky, nonplastic; few very fine to medium roots in cracks; few very fine tubular pores; 5 percent oxidized iron masses and 5 percent manganese coatings; 5 percent cobbles, 5 percent stones, and 15 percent gravel; very strongly acid, pH 4.8 by Hellige-Truog.

Type location: Butte County, California; about 2 miles north of Ramsey Bar, approximately 750 feet north and 2,110 feet east of the southwest corner of sec. 9, T. 24 N., R. 5 E.; 39 degrees, 56 minutes, 47 seconds north latitude and 121 degrees, 25 minutes, 19 seconds west longitude; NAD83; USGS Quad: Kimshew Point, California.

Range in Characteristics

The depth to dense glacial till is 20 to more than 80 inches (51 to 203 cm). The mean annual soil temperature is 40 to 47 degrees F (4 to 8 degrees C). The soil

moisture control section is dry in all parts from about July to October (about 120 days). The particle-size control section averages 8 to 18 percent clay and 20 to 80 percent rock fragments. Redoximorphic features, such as iron masses with color of 2.5YR 4/6, 5YR 4/6 or 6/8, or 7.5YR 4/6 or 7/6, occur in the 2Cd horizon. NaF pH is 9.5 to 11.5 to a depth of 20 to 40 inches (51 to 102 cm). Rock fragments on the surface range from 15 to 40 percent gravel, 5 to 40 percent cobbles, 5 to 60 percent stones, and 5 to 60 percent boulders.

The A horizon has dry color of 10YR 4/2 or 4/3 or 7.5YR 6/2. Moist color is 7.5YR 3/2 or 3/3 or 10YR 3/1. Texture is cobbly medial sandy loam, very gravelly medial sandy loam, or very stony medial sandy loam. The content of clay ranges from 6 to 12 percent. The horizon has 5 to 30 percent gravel, 10 to 20 percent cobbles, 0 to 20 percent stones, and 0 to 10 percent boulders. Reaction ranges from moderately acid to neutral.

The Bw horizon has dry color of 7.5YR 5/4, 6/4, or 7/4. Moist color is 7.5YR 3/4, 4/3, 4/4, or 5/4. Texture is cobbly medial sandy loam, very gravelly medial sandy loam, extremely cobbly medial sandy loam, or very stony medial sandy loam. The content of clay ranges from 8 to 14 percent. The horizon has 5 to 35 percent gravel, 10 to 30 percent cobbles, 5 to 25 percent stones, and 0 to 20 percent boulders. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 10YR 6/6, 7/4, 8/6, or 8/4 or 7.5YR 6/4. Moist color is 10YR 4/4, 5/4, or 6/6 or 7.5YR 4/4 or 4/6. Texture is gravelly sandy loam, very bouldery sandy loam, extremely bouldery sandy loam, or extremely bouldery sandy clay loam. The content of clay ranges from 10 to 22 percent. The horizon has 5 to 20 percent gravel, 5 to 25 percent cobbles, 5 to 20 percent stones, and 0 to 50 percent boulders. Reaction ranges from strongly acid to slightly acid.

The 2Cd horizon has dry color of 10YR 7/1, 7/2, or 7/3; 2.5YR 8/3; or 5Y 7/3. Moist color is 10YR 5/2, 2.5Y 6/3, or 5Y 5/3. Texture is gravelly sandy loam or extremely bouldery loamy coarse sand. The content of clay ranges from 2 to 8 percent. The horizon has 10 to 20 percent gravel, 5 to 20 percent cobbles, 5 to 40 percent stones, and 0 to 40 percent boulders. Reaction ranges from very strongly acid to neutral.

Haploxererts

Haploxererts consist of deep or very deep, somewhat poorly drained soils that formed in mixed alluvium deposited over weathered metavolcanic rocks. These soils are in swales, in small basins, and on alluvium-influenced footslopes along terrace and Sierra Nevada foothill margins. Slopes range from 0 to 5 percent. The mean annual precipitation is about 22 inches (559 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine, smectitic, thermic Haploxererts

Typical Pedon

Haploxererts, gravelly silty clay, on an east-facing slope of 5 percent, under a cover of soft chess, hedgehog dogtail, medusahead, tarweed, brodiaea, and other annual grasses and forbs, at an elevation of 210 feet (64 m). When described on 10/15/2001, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); dark brown (7.5YR 3/3) gravelly silty clay, dark brown (7.5YR 3/3) moist; 43 percent clay; strong fine and medium subangular blocky structure; very hard, very firm, very sticky, very plastic; many very fine roots; many very fine tubular pores; 1 percent fine spherical manganese masses; 15 percent subrounded mixed gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

- Bw—2 to 10 inches (5 to 25 cm); dark brown (7.5YR 3/4) gravelly clay, dark brown (7.5YR 3/3) moist; 60 percent clay; strong coarse prismatic structure parting to strong medium and coarse angular blocky; extremely hard, extremely firm, very sticky, very plastic; many very fine roots; many very fine tubular pores; 1 percent fine spherical manganese masses; 15 percent subrounded mixed gravel; slightly acid, pH 6.5 by Hellige-Truog; clear wavy boundary.
- Bss—10 to 30 inches (25 to 76 cm); dark brown (7.5YR 3/4) gravelly clay, dark brown (7.5YR 3/3) moist; 65 percent clay; strong coarse prismatic structure parting to strong medium and coarse angular blocky; extremely hard, extremely firm, very sticky, very plastic; few coarse and many very fine roots; many very fine tubular pores; 15 percent continuous prominent slickensides; 1 percent fine spherical manganese masses; 20 percent subrounded mixed gravel; slightly acid, pH 6.2 by Hellige-Truog; clear smooth boundary.
- 2BCt1—30 to 33 inches (76 to 84 cm); light yellowish brown (10YR 6/4) and yellowish brown (10YR 5/4) silty clay, yellowish brown (10YR 5/4) moist; 55 percent clay; strong fine and medium subangular blocky structure; very hard, very firm, very sticky, very plastic; common very fine roots; few fine and many very fine tubular pores; 1 percent fine spherical manganese masses; 5 percent subrounded mixed gravel; slightly acid, pH 6.6 by Hellige-Truog; clear smooth boundary.
- 2BCt2—33 to 41 inches (84 to 104 cm); yellowish brown (10YR 5/4) silty clay, yellowish brown (10YR 5/4) moist; 45 percent clay; strong medium and coarse subangular blocky structure; very hard, very firm, very sticky, very plastic; few very fine roots; few fine and many very fine tubular pores; 1 percent fine spherical manganese masses; 5 percent subrounded mixed gravel; neutral, pH 7.0 by Hellige-Truog; clear wavy boundary.
- 2Cr—41 to 44 inches (104 to 112 cm); weakly cemented greenschist.

Type location: Butte County, California; about 5.4 miles northeast of Honcut, approximately 500 feet north and 2,200 feet east of the southwest corner of sec. 35, T. 18 N., R. 4 E.; 39 degrees, 22 minutes, 4 seconds north latitude and 121 degrees, 29 minutes, 22 seconds west longitude; NAD83; USGS Quad: Loma Rica, California.

Range in Characteristics

The depth to paralithic bedrock is more than 40 inches (102 cm). The mean annual soil temperature is 61 to 65 degrees F (16 to 18 degrees C). The particle-size control section averages 55 to 65 percent clay and 3 to 20 percent rock fragments, mostly gravel. Mineralogy is smectitic. Reversible, surface-initiated cracks $\frac{3}{8}$ to 1 inch (1 to 3 cm) wide extend to a depth of 30 inches (76 cm) from May to October (about 165 days) when the soils are not irrigated. Few or common slickensides are in the Bss horizon, from 10 to 30 inches (25 to 76 cm). A fluctuating water table can occur from the top of the bedrock to the surface of the soil from November through April. Redoximorphic features, such as oxidized iron masses and manganese masses, can occur in all horizons. Rock fragments on the surface range from 0 to 5 percent gravel and 0 to 5 percent cobbles.

The A horizon has dry color of 7.5YR 3/3 or 10YR 3/4. Moist color is 7.5YR 3/3. Texture is silty clay loam, gravelly silty clay loam, silty clay, or gravelly silty clay. The content of clay ranges from 30 to 45 percent. The horizon has 0 to 15 percent gravel and 0 to 5 percent cobbles. The content of organic matter is 1 to 3 percent. By sum of cations, base saturation ranges from 65 to 75 percent. Reaction ranges from strongly acid to slightly acid.

The Bw horizon has dry color of 7.5YR 3/3 or 3/4 or 5/4. Moist color is 7.5YR 3/2, 3/3, or 4/4. Texture is clay or gravelly clay. The content of clay ranges from 45 to 60 percent. The content of gravel is 5 to 15 percent. The content of organic matter is 0.5 to 1.5 percent. By sum of cations, base saturation ranges from 70 to 90 percent. Reaction is slightly acid or neutral.

The Bss horizon has dry color of 7.5YR 3/4. Moist color is 7.5YR 3/3. Texture is clay or gravelly clay. The content of clay ranges from 50 to 65 percent. The content of gravel is 3 to 20 percent. By sum of cations, base saturation ranges from 75 to 95 percent. Reaction is slightly acid or neutral.

The 2BCt horizon has dry color of 10YR 5/4, 5/6, or 6/4 or 7.5YR 5/6. Moist color is 10YR 4/6 or 5/4 or 7.5YR 4/6. Texture is silty clay or clay. The content of clay ranges from 40 to 55 percent. The content of gravel is 0 to 10 percent. By sum of cations, base saturation ranges from 80 to 95 percent. Reaction ranges from neutral to moderately alkaline.

The 2Cr horizon has dry color of 10YR 6/4. Moist color is 10YR 5/6. Texture is silty clay or clay. The content of clay ranges from 35 to 45 percent. Redoximorphic features occur as manganese masses and oxidized iron masses. Reaction ranges from neutral to moderately alkaline.

Haploxerolls

Haploxerolls consist of deep, moderately well drained soils that formed in alluvium derived from volcanic rocks. These soils are on alluvial fans. Slopes range from 0 to 2 percent. The mean annual precipitation is about 23 inches (584 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Haploxerolls

Typical Pedon

Haploxerolls loam, on a slope of 1 percent, under a cover of almond trees, at an elevation of 170 feet (52 m). When described on 9/9/1993, the soil was slightly moist throughout. (Colors are for dry soil unless otherwise noted.)

- Ap1—0 to 5 inches (0 to 13 cm); brown (10YR 5/3) loam, dark brown (10YR 3/3) moist; 24 percent clay; strong medium subangular blocky structure; slightly hard, friable, nonsticky, slightly plastic; common very fine and fine and few medium roots; many fine irregular and common very fine tubular pores; moderately acid, pH 6.0 by Hellige-Truog; clear smooth boundary.
- Ap2—5 to 16 inches (13 to 41 cm); brown (10YR 5/3) loam, dark brown (10YR 3/3) moist; 25 percent clay; moderate medium subangular blocky structure; slightly hard, friable, nonsticky, slightly plastic; common very fine and fine and few medium roots; common very fine tubular pores; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.
- Bw1—16 to 27 inches (41 to 69 cm); brown (7.5YR 5/3) loam, dark brown (7.5YR 3/3) moist; 24 percent clay; moderate fine subangular blocky structure; slightly hard, friable, nonsticky, slightly plastic; few coarse and common very fine to medium roots; common very fine tubular pores; neutral, pH 7.1 by Hellige-Truog; clear smooth boundary.
- Bw2—27 to 40 inches (69 to 102 cm); brown (7.5YR 5/3) loam, dark brown (7.5YR 3/3) moist; 22 percent clay; moderate fine subangular blocky structure; slightly hard, friable, nonsticky, slightly plastic; common very fine to coarse roots; common very fine tubular pores; neutral, pH 7.2 by Hellige-Truog; clear smooth boundary.
- Bw3—40 to 48 inches (102 to 122 cm); brown (7.5YR 5/4) loam, dark brown (7.5YR 3/3) moist; 23 percent clay; moderate fine subangular blocky structure; slightly hard, friable, nonsticky, slightly plastic; few very fine and fine and common medium roots; common very fine tubular pores; neutral, pH 7.3 by Hellige-Truog; clear smooth boundary.

Bw4—48 to 52 inches (122 to 132 cm); brown (7.5YR 5/4) sandy loam, dark brown (7.5YR 3/4) moist; 13 percent clay; weak fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; few very fine and fine and common medium roots; many very fine irregular pores; 40 percent fine and medium durinodes; neutral, pH 7.3 by Hellige-Truog; abrupt smooth boundary.

2Bqm—52 inches (132 cm); indurated duripan.

Type location: Butte County, California; about 2.4 miles northwest of Cana; T. 23 N., R. 1 W.; in an unsectionized area in the Bosquejo Land Grant; 39 degrees, 51 minutes, 59 seconds north latitude and 122 degrees, 1 minute, 35 seconds west longitude; NAD27; USGS Quad: Foster Island, California.

Range in Characteristics

Depth to the duripan is 40 to 60 inches (102 to 152 cm) or more. The mean annual soil temperature is 60 to 64 degrees F (16 to 18 degrees C). The particle-size control section averages 23 to 31 percent clay. Mineralogy is mixed. A fluctuating water table can occur from the top of the duripan to 20 inches (51 cm) below the surface of the soil from December through April.

The Ap horizon has dry color of 10YR 4/3 or 5/3. Moist color is 10YR 3/2 or 3/3. Texture is loam, clay loam, silt loam, or silty clay loam. The content of clay ranges from 18 to 35 percent. The content of gravel is 0 to 2 percent. The content of organic matter is 2.5 to 5 percent. Reaction ranges from moderately acid to neutral.

The Bw horizon has dry color of 10YR 5/3, 5/4, or 6/4 or 7.5YR 4/4, 4/6, 5/3, or 5/4. Moist color is 10YR 3/3, 3/4, or 4/3 or 7.5YR 3/3, 3/4, or 4/3. Texture is clay loam, loam, silty clay loam, silt loam, sandy clay loam, or sandy loam. The content of clay ranges from 9 to 35 percent. The content of gravel is 0 to 10 percent. The content of organic matter is 0.1 to 2.5 percent. This horizon is noneffervescent to strongly effervescent. Reaction ranges from neutral to moderately alkaline.

The C horizon, where it occurs, has dry color of 7.5YR 5/4 or 10YR 5/4. Moist color is 7.5YR 3/4 or 10YR 3/4. Texture is sandy loam, loam, or silt loam. The content of clay ranges from 10 to 27 percent. The content of organic matter is 0.1 to 0.8 percent. This horizon is noneffervescent to strongly effervescent. Reaction is neutral or slightly alkaline.

The 2Bqm horizon is slightly effervescent to strongly effervescent. Redoximorphic features include manganese masses and oxidized iron masses on top of the duripan. The horizon is slightly cemented to indurated.

Hartsmill Series

The Hartsmill series consists of very deep, well drained soils that formed in colluvium and residuum derived from metavolcanic rocks, mainly greenschist. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada foothills. Slopes range from 2 to 90 percent. The mean annual precipitation is about 43 inches (109 cm), and the mean annual air temperature is about 58 degrees F (14 degrees C).

Taxonomic class: Loamy-skeletal, mixed, superactive, thermic Ultic Palexeralfs

Typical Pedon

Hartsmill gravelly loam, on a southwest-facing slope of 46 percent, under a cover of whiteleaf manzanita, toyon, interior live oak, California black oak, Pacific poison oak, and very scattered ponderosa pine, at an elevation of 1,840 feet (561 m). When described on 7/27/1999, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

- Oi—0 to 1 inch (0 to 3 cm); slightly decomposed plant material; abrupt smooth boundary.
- A—1 to 3 inches (3 to 8 cm); reddish brown (5YR 4/4) gravelly loam, dark reddish brown (5YR 3/3) moist; 14 percent clay; strong fine granular structure; soft, very friable, nonsticky, slightly plastic; common very fine roots; many very fine irregular pores; 30 percent angular gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.
- Bt1—3 to 6 inches (8 to 15 cm); yellowish red (5YR 4/6) very gravelly loam, dark reddish brown (5YR 3/4) moist; 17 percent clay; strong coarse subangular blocky structure; hard, friable, nonsticky, slightly plastic; common fine and few medium and very fine roots; few very fine tubular pores; 10 percent continuous distinct clay films on surfaces along pores; 40 percent angular gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.
- Bt2—6 to 13 inches (15 to 33 cm); yellowish red (5YR 4/6) very gravelly loam, dark reddish brown (2.5YR 3/4) moist; 20 percent clay; moderate medium subangular blocky structure; slightly hard, friable, nonsticky, moderately plastic; common fine and few medium and coarse roots; many very fine tubular pores; 30 percent discontinuous distinct clay films on faces of peds; 45 percent angular gravel; slightly acid, pH 6.3 by Hellige-Truog; clear wavy boundary.
- Bt3—13 to 24 inches (33 to 61 cm); red (2.5YR 4/6) very gravelly loam, dark reddish brown (2.5YR 3/4) moist; 25 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; common fine and few medium and coarse roots; common very fine tubular pores; 45 percent continuous distinct clay films; 45 percent angular gravel; slightly acid, pH 6.3 by Hellige-Truog; gradual wavy boundary.
- BCt1—24 to 35 inches (61 to 89 cm); red (2.5YR 4/6) very cobbly clay loam, dark red (2.5YR 3/6) moist; 33 percent clay; moderate medium angular blocky structure; hard, firm, moderately sticky, very plastic; few medium and coarse roots; common very fine tubular pores; 60 percent continuous distinct clay films on faces of peds and 90 percent continuous prominent clay films on rock fragments; 10 percent angular gravel and 40 percent angular cobbles; slightly acid, pH 6.2 by Hellige-Truog; clear smooth boundary.
- BCt2—35 to 62 inches (89 to 157 cm); red (2.5YR 4/6) extremely cobbly clay loam, dark red (2.5YR 3/6) moist; 38 percent clay; moderate medium angular blocky structure; hard, very firm, moderately sticky, very plastic; few fine roots; common very fine tubular pores; 70 percent continuous distinct clay films on all faces of peds and 90 percent continuous distinct clay films on rock fragments; 10 percent angular gravel and 55 percent angular cobbles; slightly acid, pH 6.2 by Hellige-Truog; gradual wavy boundary.
- Crt—62 inches (157 cm); moderately cemented, weathered greenschist with 90 percent continuous prominent clay films.

Type location: Butte County, California; about 5.8 miles northeast of Oroville Dam, approximately 2,250 feet west and 2,150 feet north of the southeast corner of sec. 9, T. 20 N., R. 5 E.; 39 degrees, 36 minutes, 16.41 seconds north latitude and 121 degrees, 25 minutes, 05.33 seconds west longitude; NAD83; USGS Quad: Oroville Dam, California.

Range in Characteristics

The depth to paralithic bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 59 to 63 degrees F (15 to 17 degrees C). The soil moisture control section is dry in all parts from about May to October (about 150 to 200 days). The particle-size control section averages 20 to 27 percent clay and 35 to 50 percent rock

fragments, mostly gravel. Mineralogy is mixed. The content of organic matter is 1 to 3 percent to a depth of 13 inches (33 cm) and is less than 1 percent below that depth. Rock fragments on the surface range from 0 to 15 percent gravel, 0 to 10 percent cobbles, 0 to 15 percent stones, and 0 to 15 percent boulders. Some pedons have a BAt horizon.

The A horizon has dry color of 5YR 4/4, 4/6, or 5/6. Moist color is 5YR 3/3, 3/4, or 4/6. Texture is gravelly loam with a high content of silt. The content of clay ranges from 14 to 18 percent. The content of gravel is 10 to 30 percent. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 5YR 4/6 or 5/6 or 2.5YR 3/6 or 4/6. Moist color is 5YR 3/4 or 2.5YR 3/4 or 3/6. Texture is very gravelly loam, gravelly loam, gravelly clay loam, very gravelly clay loam, or extremely gravelly clay with a high content of silt. The content of clay ranges from 17 to 30 percent. The horizon has 10 to 50 percent gravel and 0 to 15 percent cobbles. Reaction ranges from moderately acid to neutral.

The BCt horizon has dry color of 2.5YR 4/6. Moist color is 2.5YR 3/6. Texture is very cobbly or extremely cobbly clay loam. The content of clay ranges from 28 to 40 percent. The horizon has 0 to 10 percent gravel and 40 to 55 percent cobbles. Reaction is moderately acid or slightly acid.

Hietanen Series

The Hietanen series consists of deep, well drained soils that formed in residuum and colluvium derived from metasedimentary rocks. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada mountains. Slopes range from 3 to 70 percent. The mean annual precipitation is about 65 inches (1,651 mm), and the mean annual air temperature is about 55 degrees F (13 degrees C).

Taxonomic class: Fine-loamy, mixed, active, mesic Typic Haploxerults

Typical Pedon

Hietanen gravelly loam, on a southwest-facing slope of 20 percent, under a cover of ponderosa pine and white fir, at an elevation of 3,600 feet (1,097 m). When described on 7/13/1999, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 3 cm); slightly decomposed plant material; abrupt smooth boundary.

A—1 to 3 inches (3 to 8 cm); light brown (7.5YR 6/4) gravelly loam, brown (7.5YR 4/3) moist; 20 percent clay; moderate fine and medium granular structure; soft, very friable, slightly sticky, slightly plastic; common very fine to medium roots; many very fine to medium irregular and tubular pores; 25 percent gravel; moderately acid, pH 6.0 by Hellige-Truog; NaF pH 9.8; clear smooth boundary.

Bt1—3 to 8 inches (8 to 20 cm); light brown (7.5YR 6/4) gravelly loam, brown (7.5YR 4/4) moist; 24 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine to medium roots; many very fine and fine tubular pores; 50 percent faint clay films; 5 percent cobbles and 15 percent gravel; slightly acid, pH 6.2 by Hellige-Truog; NaF pH 10.0; gradual smooth boundary.

Bt2—8 to 19 inches (20 to 48 cm); reddish yellow (7.5YR 6/6) silt loam, reddish brown (5YR 4/4) moist; 27 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine to medium roots; common very fine and fine and few medium tubular pores; 50 percent faint clay films; 10 percent gravel; moderately acid, pH 5.8 by Hellige-Truog; NaF pH 9.5; gradual smooth boundary.

- Bt3**—19 to 30 inches (48 to 76 cm); yellow (10YR 8/6) silt loam, brownish yellow (10YR 6/6) moist; 24 percent clay; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine to coarse roots; common very fine and fine tubular pores; 50 percent distinct clay films; 12 percent gravel; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 9.2; gradual smooth boundary.
- Bt4**—30 to 53 inches (76 to 135 cm); yellow (10YR 7/6) silt loam, yellowish brown (10YR 5/6) moist; 22 percent clay; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine to medium roots; common very fine and fine tubular pores; 50 percent distinct clay films; 10 percent gravel; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 9.5; clear smooth boundary.
- Cr**—53 inches (135 cm); very weakly cemented phyllite bedrock; few very fine to medium roots; few very fine irregular and tubular pores; strongly acid, pH 5.5 by Hellige-Truog.

Type location: Butte County, California; about 3.2 miles northeast of Sawmill Peak, approximately 1,500 feet north and 360 feet west of the southeast corner of sec. 22, T. 23 N., R. 4 E.; 39 degrees, 49 minutes, 60 seconds north latitude and 121 degrees, 30 minutes, 20 seconds west longitude; NAD83; USGS Quad: Paradise East, California.

Range in Characteristics

The depth to paralithic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 50 to 57 degrees F (10 to 14 degrees C). The particle-size control section averages 24 to 35 percent clay and 2 to 35 percent rock fragments, mostly gravel. Mineralogy is mixed. Rock fragments on the surface range from 5 to 30 percent gravel, 0 to 10 percent cobbles, and 0 to 5 percent stones. Some pedons have a very gravelly Bt/Cr horizon.

The A horizon has dry color of 10YR 5/2, 5/3, or 6/4; 7.5YR 5/4, 6/3, 6/4, 7/3, or 7/4; or 5YR 6/4. Moist color is 10YR 3/2, 4/2, or 4/3; 7.5YR 3/4, 4/2, 4/3, or 4/4; or 5YR 4/3 or 4/4. Texture is loam, gravelly loam, very gravelly loam, or silt loam. The content of clay ranges from 18 to 27 percent. The content of gravel is 5 to 40 percent. Reaction ranges from moderately acid to neutral.

The Bt horizon has dry color of 7.5YR 5/4, 5/6, 6/4, or 6/6; 5YR 6/4 or 6/6; 10YR 5/4, 6/4, 7/2, 7/4, 7/6, or 8/6; or 2.5Y 5/3 or 7/4. Moist color is 7.5YR 4/3, 4/4, 4/6, or 5/6; 5YR 4/4, 4/6, or 5/6; 10YR 4/2, 4/3, 5/4, 5/6, or 6/6; or 2.5Y 4/2, 4/3, or 5/4. Hues of 10YR and 2.5Y normally occur in the lower part of the horizon. Texture is loam, gravelly loam, clay loam, gravelly clay loam, silt loam, gravelly silt loam, silty clay loam, or gravelly silty clay loam. The content of clay ranges from 22 to 35 percent. The horizon has 2 to 30 percent gravel and 0 to 10 percent cobbles. Reaction ranges from strongly acid to slightly acid.

Hoda Series

The Hoda series consists of very deep, well drained soils that formed in colluvium and residuum derived from granodiorite. These soils are in the Sierra Nevada Mountains. Slopes range from 3 to 50 percent. The mean annual precipitation is about 50 inches (1,270 mm), and the mean annual air temperature is about 56 degrees F (13 degrees C).

Taxonomic class: Fine, kaolinitic, mesic Ultic Haploxeralfs

Typical Pedon

Hoda loam. (Colors are for dry soil unless otherwise noted.)

Oi—1 inch to 0 (3 cm to 0); litter and duff.

A—0 to 7 inches (0 to 18 cm); brown (7.5YR 5/4) loam, brown (7.5YR 4/4) moist; moderate very fine and fine granular structure; soft, very friable, slightly sticky, slightly plastic; many very fine and fine roots; many very fine and fine interstitial pores; slightly acid; clear smooth boundary.

Bt1—7 to 14 inches (18 to 36 cm); reddish yellow (5YR 6/6) clay loam, yellowish red (5YR 5/6) moist; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine to medium and few coarse roots; common very fine and fine interstitial pores; few thin clay films coating mineral grains; slightly acid; clear smooth boundary.

Bt2—14 to 21 inches (36 to 53 cm); yellowish red (5YR 5/8) clay, yellowish red (5YR 4/8) moist; moderate medium angular blocky structure; hard, friable, sticky, plastic; common medium and coarse roots; common very fine and fine tubular pores; common thin clay films on faces of peds and common moderately thick clay films in pores; slightly acid; gradual wavy boundary.

Bt3—21 to 48 inches (53 to 122 cm); reddish yellow (5YR 6/8) clay, yellowish red (5YR 5/8) moist; moderate medium angular blocky structure; hard, friable, sticky, plastic; common medium and coarse roots; common very fine and fine tubular and interstitial pores; common moderately thick clay films on faces of peds and in pores; moderately acid; clear irregular boundary.

BCt—48 to 72 inches (122 to 183 cm); reddish yellow (7.5YR 6/8) clay loam, strong brown (7.5YR 5/8) moist; massive; slightly hard, friable, slightly sticky, slightly plastic; common medium and coarse roots; few very fine interstitial pores; few thin clay films in pores; moderately acid.

Type location: Yuba County, California; about 5.4 miles southeast of Challenge, approximately 100 feet south and 700 feet east of the northwest corner of sec. 6, T. 18 N., R. 8 E.; 39 degrees, 27 minutes, 18.78 seconds north latitude and 121 degrees, 7 minutes, 41.05 seconds west longitude; NAD27; USGS Quad: Challenge, California.

Range in Characteristics

The thickness of the solum ranges from 40 to 80 inches (102 to 203 cm), and the depth to paralithic bedrock is more than 80 inches (203 cm). The mean annual soil temperature is 50 to 54 degrees F (10 to 12 degrees C). The particle-size control section ranges from 35 to 50 percent clay. Mineralogy is kaolinitic. The content of organic matter is 2 to 6 percent to a depth of 72 inches (183 cm).

The A horizon has dry color of 10YR 5/2, 5/3, 4/3, or 3/3 or 7.5YR 5/4, 4/6, 4/2, or 4/4. Moist color is 10YR 3/3 or 3/4 or 7.5YR 3/4, 4/2, 4/4, 5/6, or 5/8. Moist chroma of 4 or more is below a depth of 5 inches (13 cm). Texture is loam. The content of clay ranges from 7 to 18 percent. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 7.5YR 8/6, 7/8, 7/6, 6/8, or 6/6 or 5YR 7/8, 7/6, 6/8, 6/6, 5/8, 5/6, 4/8, or 4/6. Texture is clay loam or clay. The content of clay ranges from 35 to 50 percent. Reaction ranges from strongly acid to slightly acid.

Holillipah Series

The Holillipah series consists of very deep, somewhat excessively drained soils that formed in alluvium derived from mixed sources. These soils are on flood plains. Slopes are 0 to 1 percent. The mean annual precipitation is about 20 inches (508 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Sandy, mixed, thermic Typic Xerofluvents

Typical Pedon

Holillipah loamy sand. (Colors are for dry soil unless otherwise noted.)

- Ap—0 to 6 inches (0 to 15 cm); light yellowish brown (10YR 6/4) loamy sand, brown (10YR 4/3) moist; weak medium granular structure; soft, very friable, nonsticky, nonplastic; few very fine roots; many very fine interstitial pores; neutral; abrupt wavy boundary.
- C1—6 to 9 inches (15 to 23 cm); pale brown (10YR 6/3) sand, brown (10YR 5/3) moist; strata, 1 to 2 millimeters thick, and pockets, 1 to 2 centimeters across, of yellowish brown (10YR 5/6) silt loam; single grain; loose, nonsticky, nonplastic; many very fine interstitial pores; neutral; clear wavy boundary.
- C2—9 to 20 inches (23 to 51 cm); light gray (10YR 7/1), stratified sand, grayish brown (10YR 5/2) moist; single grain; loose, nonsticky, nonplastic; neutral; abrupt wavy boundary.
- C3—20 to 26 inches (51 to 66 cm); very pale brown (10YR 7/4) fine sandy loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, nonsticky, nonplastic; common fine distinct brown (10YR 5/3) oxidized iron masses; neutral; abrupt wavy boundary.
- C4—26 to 38 inches (66 to 96 cm); light gray (10YR 7/1), stratified sand, grayish brown (10YR 5/2) moist; single grain; loose, nonsticky, nonplastic; continuous yellow (10YR 7/8) oxidized iron masses in a 0.5- to 1-millimeter stratum; neutral; abrupt smooth boundary.
- C5—38 to 46 inches (96 to 117 cm); mixed very pale brown (10YR 7/3) and pale brown (10YR 6/3), stratified sand, grayish brown (10YR 5/2) moist; single grain; loose, nonsticky, nonplastic; 2 percent rounded gravel; continuous yellowish brown (10YR 5/8) iron masses in a 1-millimeter stratum; many coarse prominent dark yellowish brown (10YR 4/4) and few medium prominent dusky red (2.5YR 3/2) oxidized iron masses; manganese stains; neutral; abrupt smooth boundary.
- C6—46 to 48 inches (117 to 122 cm); light gray (10YR 7/2) loamy fine sand, dark brown (10YR 3/3) moist; single grain; soft, very friable, nonsticky, nonplastic; neutral; abrupt smooth boundary.
- C7—48 to 57 inches (122 to 145 cm); light gray (10YR 7/1), stratified sand, grayish brown (10YR 5/2) moist; single grain; loose, nonsticky, nonplastic; neutral; abrupt smooth boundary.
- C8—57 to 66 inches (145 to 168 cm); light gray (10YR 7/2), stratified sand, grayish brown (10YR 5/2) moist; single grain; loose, nonsticky, nonplastic; common fine prominent yellow (10YR 6/8) iron masses in fine strata; neutral; abrupt smooth boundary.

Type location: Yuba County, California; about 3.8 miles northeast of Marysville, approximately 850 feet (253 m) north of Hooper Road and 300 feet (91 m) east of Hallwood Boulevard; T. 16 N., R. 4 E.; in an unsectionized area in the Honcut Rancho Land Grant; 39 degrees, 12 minutes, 5 seconds north latitude and 121 degrees, 30 minutes, 33 seconds west longitude; NAD27; USGS Quad: Yuba City, California.

Range in Characteristics

The depth of the soils is more than 80 inches (203 cm). The mean annual soil temperature is 64 or 65 degrees F (18 degrees C). Mineralogy is mixed. Unless the soils are irrigated, the soil moisture control section is dry in all parts from about May through October and moist in some or all parts from about November through April. Texture is stratified sand, loamy sand, sandy loam, or fine sandy loam. The content of clay ranges from 0 to 10 percent. The content of organic carbon decreases irregularly with increasing depth. Reaction is slightly acid or neutral.

The A horizon has dry color of 10YR 6/4 or 6/3. Moist color is 10YR 4/4 or 4/3.

The C horizon has dry color of 10YR 8/1, 7/4, 7/3, 7/2, 7/1, or 6/3. Moist color is 10YR 7/2, 6/2, 5/4, 5/3, 5/2, 4/4, 4/3, or 3/3. The horizon has distinct or prominent redoximorphic features.

Holland Series

The Holland series consists of very deep, well drained soils that formed in colluvium and residuum derived from granodiorite. These soils are in the Sierra Nevada Mountains. Slopes range from 2 to 50 percent. The mean annual precipitation is about 50 inches (1,270 mm), and the mean annual air temperature is about 56 degrees F (13 degrees C).

Taxonomic class: Fine-loamy, mixed, semiactive, mesic Ultic Haploxeralfs

Typical Pedon

Holland loam. (Colors are for dry soil unless otherwise noted.)

Oi—2 inches to 0 (5 cm to 0); litter and duff.

A1—0 to 4 inches (0 to 10 cm); brown (7.5YR 5/4) loam, brown (7.5YR 4/4) moist; weak very fine and fine granular structure; soft, friable, nonsticky, nonplastic; common very fine and fine and few medium roots; common very fine and fine irregular pores; slightly acid; gradual smooth boundary.

A2—4 to 15 inches (10 to 38 cm); reddish brown (5YR 5/4) loam, reddish brown (5YR 4/4) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few medium and coarse and common fine roots; common very fine and fine irregular pores; slightly acid; gradual wavy boundary.

Bt1—15 to 35 inches (38 to 89 cm); reddish yellow (5YR 6/8) clay loam, yellowish red (5YR 4/8) moist; moderate fine subangular blocky structure; hard, firm, nonsticky, slightly plastic; few fine to coarse roots; common fine and very fine irregular pores; common thin clay films on faces of peds and in pores; moderately acid; clear wavy boundary.

Bt2—35 to 50 inches (89 to 127 cm); reddish yellow (7.5YR 6/8) clay loam, strong brown (7.5YR 5/8) moist; massive; slightly hard, friable, nonsticky, slightly plastic; few medium and coarse roots; common very fine and fine irregular and common fine tubular pores; common thin clay films bridging mineral grains; moderately acid; gradual irregular boundary.

Bc1—50 to 65 inches (127 to 165 cm); reddish yellow (7.5YR 7/8) clay loam, reddish yellow (7.5YR 6/8) moist; massive; slightly hard, friable, nonsticky, slightly plastic; few medium roots; common very fine and fine irregular pores; common thin clay films bridging mineral grains; strongly acid.

Type location: Yuba County, California; about 4.2 miles southeast of Challenge, approximately 1,600 feet south and 300 feet east of the northwest corner of sec. 36, T. 19 N., R. 7 E.; 39 degrees, 27 minutes, 56.58 seconds north latitude and 121 degrees, 8 minutes, 48.2 seconds west longitude; NAD27; USGS Quad: Challenge, California.

Range in Characteristics

The depth of the soils is more than 60 inches (152 cm). The mean annual soil temperature is 52 to 54 degrees F (11 to 12 degrees C). The soil moisture control section is dry in all parts from about July 15 to October 15 (about 95 days). Mineralogy is mixed. The content of organic matter is 2 to 5 percent to a depth of 65 inches (165 cm).

The A horizon has dry color of 10YR 5/3, 5/2, 4/3, 4/2, or 3/3; 7.5YR 5/4, 5/2, 4/4, or 4/2; or 5YR 5/4. Texture is sandy loam or loam. The content of clay ranges from 12 to 25 percent. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 7.5YR 6/8, 6/6, 6/4, 5/8, 5/6, 5/4, 4/6, or 4/4 or 5YR 6/8, 6/6, 5/8, 5/6, 5/4, 4/8, 4/6, or 4/4. Texture is sandy clay loam or clay loam. The content of clay ranges from 25 to 35 percent. Reaction ranges from strongly acid to slightly acid.

The BCt horizon has dry color of 7.5YR 7/8, 5/6, or 4/6. Moist color is 7.5YR 4/4, 4/6, 5/4, or 6/8. Texture is sandy clay loam or clay loam. The content of clay ranges from 25 to 35 percent.

Hotaw Series

The Hotaw series consists of moderately deep, well drained soils that formed in colluvium and residuum derived from granodiorite. These soils are in the Sierra Nevada Mountains. Slopes range from 5 to 75 percent. The mean annual precipitation is about 50 inches (1,270 mm), and the mean annual air temperature is about 56 degrees F (13 degrees C).

Taxonomic class: Fine-loamy, mixed, active, mesic Ultic Haploxeralfs

Typical Pedon

Hotaw loam. (Colors are for dry soil unless otherwise noted.)

Oi—1 inch to 0 (3 cm to 0); litter and duff.

A1—0 to 4 inches (0 to 10 cm); brown (7.5YR 5/4) loam, brown (7.5YR 4/4) moist; moderate fine granular structure; soft, very friable, slightly sticky, slightly plastic; many very fine and fine and common medium roots; many very fine and fine irregular pores; slightly acid; gradual smooth boundary.

A2—4 to 12 inches (10 to 30 cm); light brown (7.5YR 6/4) loam, brown (7.5YR 5/4) moist; weak medium subangular blocky structure; soft, friable, slightly sticky, slightly plastic; common very fine to medium and few coarse roots; many very fine and fine irregular pores; slightly acid; gradual wavy boundary.

Bt—12 to 34 inches (30 to 86 cm); light yellowish brown (10YR 6/4) sandy clay loam, yellowish brown (10YR 5/6) moist; moderate medium subangular blocky structure; hard, firm, sticky, plastic; common fine and medium and many coarse roots; common very fine and fine tubular pores; common moderately thick clay films in pores; moderately acid; clear wavy boundary.

Cr—34 to 50 inches (86 to 127 cm); weathered granodiorite.

Type location: Yuba County, California; about 4.1 miles west of Camptonville, approximately 700 feet south and 2,200 feet west of the northeast corner of sec. 6, T. 18 N., R. 8 E.; 39 degrees, 27 minutes, 32.1 seconds north latitude and 121 degrees, 7 minutes, 26.04 seconds west longitude; NAD27; USGS Quad: Camptonville, California.

Range in Characteristics

The depth to paralithic bedrock ranges from 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 52 to 56 degrees F (11 to 13 degrees C). The particle-size control section ranges from 18 to 25 percent clay. Mineralogy is mixed. The content of organic matter is 1 to 5 percent to a depth of 38 inches (97 cm).

The A horizon has dry color of 10YR 6/4, 6/3, 5/8, 5/6, 5/4, 5/3, 4/3, or 3/4 or 7.5YR 6/4, 5/4, 5/2, 4/4, or 4/2. Texture is loam or sandy loam. The content of clay ranges from 7 to 15 percent. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 10YR 6/4, 5/6, 5/3, or 4/3 or 7.5YR 6/8, 6/4, 5/8, 5/6, 5/4, 5/2, 4/6, 4/4, or 4/2. Texture is sandy clay loam or clay loam. The content of clay ranges from 20 to 35 percent. Reaction ranges from strongly acid to slightly acid.

Hurleton Series

The Hurleton series consists of moderately deep, well drained soils that formed in residuum and colluvium derived from metamorphic and intrusive igneous rocks, mainly quartz diorite and gabbro. These soils are on ridgetops and side slopes on plutons on Sierra foothills. Slopes range from 2 to 50 percent. The mean annual precipitation is about 35 inches (889 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Loamy-skeletal, mixed, active, thermic Ultic Haploxeralfs

Typical Pedon

Hurleton gravelly sandy loam, on a south-facing slope of 9 percent, under a cover of blue oak, foothill pine, interior live oak, whiteleaf manzanita, chaparral coffeeberry, Pacific poison oak, rattlesnake brome, ripgut brome, wild onion, and rose clover, at an elevation of 1,300 feet (396 m). When described on 8/4/1999, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

- A1—0 to 3 inches (0 to 8 cm); brown (10YR 5/3) gravelly sandy loam, dark brown (10YR 3/3) moist; 10 percent clay; moderate very fine and fine subangular blocky structure; slightly hard, very friable, nonsticky, nonplastic; many very fine roots; common medium and many very fine tubular pores; 22 percent subangular gravel; slightly acid, pH 6.5 by Hellige-Truog; clear wavy boundary.
- A2—3 to 7 inches (8 to 18 cm); yellowish brown (10YR 5/4) gravelly sandy loam, dark yellowish brown (10YR 3/4) moist; 12 percent clay; moderate very fine and fine subangular blocky structure; slightly hard, very friable, nonsticky, nonplastic; many very fine roots; many very fine and fine tubular pores; 20 percent subangular gravel; slightly acid, pH 6.3 by Hellige-Truog; clear wavy boundary.
- BA—7 to 12 inches (18 to 30 cm); brown (7.5YR 5/4) gravelly sandy loam, dark brown (7.5YR 3/4) moist; 14 percent clay; moderate medium subangular blocky structure; slightly hard, very friable, nonsticky, nonplastic; many very fine roots; many very fine tubular pores; 30 percent subangular gravel; moderately acid, pH 6.0 by Hellige-Truog; clear wavy boundary.
- Bt1—12 to 16 inches (30 to 41 cm); strong brown (7.5YR 5/6) very gravelly sandy loam, strong brown (7.5YR 4/6) moist; 16 percent clay; moderate fine subangular blocky structure; moderately hard, very friable, slightly sticky, slightly plastic; few very fine roots; many very fine and fine tubular pores; 10 percent patchy faint clay films on faces of peds; 55 percent subangular gravel; moderately acid, pH 6.0 by Hellige-Truog; clear wavy boundary.
- Bt2—16 to 19 inches (41 to 48 cm); strong brown (7.5YR 5/6) very gravelly sandy loam, strong brown (7.5YR 4/6) moist; 19 percent clay; moderate fine and medium subangular blocky structure; moderately hard, very friable, slightly sticky, slightly plastic; few very fine roots; many very fine tubular pores; 10 percent patchy faint clay films on faces of peds; 45 percent subangular gravel; slightly acid, pH 6.4 by Hellige-Truog; clear smooth boundary.
- Bt3—19 to 25 inches (48 to 64 cm); reddish yellow (7.5YR 6/6) extremely gravelly sandy clay loam, strong brown (7.5YR 4/6) moist; 23 percent clay; strong fine and medium subangular blocky structure; moderately hard, friable, slightly sticky, slightly plastic; few very fine and medium roots; few very fine tubular pores; 10 percent patchy faint clay films on all faces of peds; 70 percent subangular gravel; moderately acid, pH 5.7 by Hellige-Truog; abrupt smooth boundary.

R—25 inches (64 cm); reddish yellow (7.5YR 6/6), indurated quartz diorite bedrock, strong brown (7.5YR 5/6) moist.

Type location: Butte County, California; about 2.6 miles southwest of Hurleton, approximately 2,700 feet south and 2,000 feet east of the northwest corner of sec. 21, T. 19 N., R. 5 E.; 39 degrees, 29 minutes, 14.99 seconds north latitude and 121 degrees, 25 minutes, 17.37 seconds west longitude; NAD83; USGS Quad: Bangor, California.

Range in Characteristics

The depth to lithic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 59 to 63 degrees F (15 to 17 degrees C). The soil moisture control section is dry in all parts from about June 1 to October 15 (about 150 days). The particle-size control section averages 20 to 26 percent clay and 36 to 70 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed.

The A horizon has dry color of 10YR 5/3 or 5/4 or 7.5YR 5/4. Moist color is 10YR 2/2, 3/2, 3/3, or 3/4 or 7.5YR 3/4. Texture is sandy loam, gravelly sandy loam, or very gravelly loam. The content of clay ranges from 10 to 17 percent. The content of gravel is 10 to 45 percent. By sum of cations, base saturation ranges from 45 to 60 percent. The content of organic matter is 3 to 8 percent. Reaction is moderately acid or slightly acid.

The BA horizon has dry color of 7.5YR 5/3, 5/4, 5/6, 6/3, or 6/4. Moist color is 7.5YR 3/2, 3/4, 4/3, or 4/4. Texture is gravelly or very gravelly sandy loam. The content of clay ranges from 14 to 20 percent. The horizon has 25 to 45 percent gravel and 0 to 45 percent cobbles. By sum of cations, base saturation ranges from 50 to 65 percent. The content of organic matter is 1.2 to 3 percent. Reaction is moderately acid or slightly acid.

The upper part of the Bt horizon has dry color of 7.5YR 5/4, 6/4, 6/6, or 7/2. Moist color is 7.5YR 4/4, 5/4, or 6/2. Texture is very gravelly sandy loam, very gravelly loam, or very gravelly sandy clay loam. The content of clay ranges from 16 to 24 percent. The content of gravel is 35 to 60 percent, and the content of cobbles is 0 to 60 percent. By sum of cations, base saturation ranges from 60 to 74 percent. The content of organic matter is 0.4 to 1.3 percent. Reaction is moderately acid or slightly acid.

The middle part of the Bt horizon has dry color of 7.5YR 5/6, 6/4, 6/6, or 7/4. Moist color is 7.5YR 4/3, 4/6, or 5/6. Texture is very gravelly sandy loam, very gravelly loam, very cobbly loam, or very gravelly sandy clay loam. The content of clay ranges from 19 to 32 percent. The content of gravel is 25 to 45 percent, and the content of cobbles is 0 to 60 percent. By sum of cations, base saturation ranges from 75 to 85 percent. The content of organic matter is 0.2 to 0.6 percent. Reaction ranges from very strongly acid to slightly acid.

The lower part of the Bt horizon has dry color of 7.5YR 5/6, 5/8, or 6/6 or 10YR 5/4. Moist color is 7.5YR 4/4, 4/6, or 5/6 or 10YR 4/4. Texture is very gravelly sandy clay loam, extremely gravelly sandy clay loam, or extremely cobbly sandy clay loam. The content of clay ranges from 20 to 35 percent. The content of gravel is 35 to 70 percent, and the content of cobbles is 0 to 60 percent. By sum of cations, base saturation ranges from 75 to 85 percent. The content of organic matter is 0 to 0.4 percent. Reaction ranges from strongly acid to slightly acid.

Ignord Series

The Ignord series consists of very deep, well drained soils that formed in alluvium derived from mixed rock sources. These soils are on distal alluvial fans. Slopes range from 0 to 2 percent. The mean annual precipitation is about 21 inches (533 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Coarse-loamy, mixed, superactive, thermic Pachic Haploxerolls

Typical Pedon

Ignord fine sandy loam, on a slope of less than 1 percent, under a cover of valley oak, yellow starthistle, and annual grasses, at an elevation of 131 feet (40 m). When described on 8/24/1994, the soil was moist at a depth of 4 to 77 inches (10 to 196 cm). (Colors are for dry soil unless otherwise noted.)

Akp—0 to 4 inches (0 to 10 cm); dark grayish brown (10YR 4/2) fine sandy loam, very dark grayish brown (10YR 3/2) moist; 10 percent clay; single grain and weak fine and medium granular structure; soft, very friable, nonsticky, nonplastic; many very fine and fine roots; many very fine interstitial pores; slightly effervescent; disseminated carbonates; moderately alkaline, pH 8.0 by Hellige-Truog; clear smooth boundary.

Ak1—4 to 14 inches (10 to 36 cm); dark grayish brown (10YR 4/2) fine sandy loam, very dark grayish brown (10YR 3/2) moist; 8 percent clay; weak fine and medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; common very fine and fine roots; common very fine interstitial and common very fine and fine and few medium tubular pores; violently effervescent; disseminated carbonates; moderately alkaline, pH 8.0 by Hellige-Truog; clear smooth boundary.

Ak2—14 to 25 inches (36 to 64 cm); dark grayish brown (10YR 4/2) sandy loam, very dark grayish brown (10YR 3/2) moist; 10 percent clay; weak fine and medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; common very fine and fine and few medium roots; common fine interstitial and many very fine and fine tubular pores; violently effervescent; disseminated carbonates; moderately alkaline, pH 8.2 by Hellige-Truog; abrupt smooth boundary.

Ak3—25 to 32 inches (64 to 81 cm); brown (10YR 5/3) fine sandy loam, very dark grayish brown (10YR 3/2) moist; 8 percent clay; weak fine and medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; common very fine roots; common fine interstitial pores; violently effervescent; disseminated carbonates; moderately alkaline, pH 8.2 by Hellige-Truog; clear wavy boundary.

Bk—32 to 53 inches (81 to 135 cm); brown (10YR 5/3) sandy loam, brown (10YR 4/3) moist; 8 percent clay; massive; soft, very friable, nonsticky, nonplastic; few very fine roots; common very fine and fine tubular pores; violently effervescent; disseminated carbonates; moderately alkaline, pH 8.0 by Hellige-Truog; clear wavy boundary.

Bkq—53 to 58 inches (135 to 147 cm); brown (10YR 5/3) fine sandy loam, brown (10YR 4/3) moist; 10 percent clay; massive; soft, very friable, nonsticky, nonplastic; few very fine roots; common very fine and fine and few medium tubular pores; 20 percent weakly cemented with silica; violently effervescent; disseminated carbonates; moderately alkaline, pH 8.0 by Hellige-Truog; clear smooth boundary.

Bk'—58 to 77 inches (147 to 196 cm); brown (10YR 5/3) fine sandy loam, brown (10YR 4/3) moist; 10 percent clay; massive; soft, very friable, nonsticky, nonplastic; few very fine and medium roots; many very fine and fine and few medium tubular pores; very slightly effervescent; disseminated carbonates; moderately alkaline, pH 8.0 by Hellige-Truog.

Type location: Butte County, California; about 2 miles west of Chico, approximately 1,400 feet west of the Mt. Diablo meridian and 2,750 feet south of the line separating T. 22 N. and T. 21 N.; in an unsectionized area in the Rancho de Farwell Land Grant; 39 degrees, 42 minutes, 10 seconds north latitude and 121 degrees, 55 minutes, 22 seconds west longitude; NAD27; USGS Quad: Ord Ferry, California.

Range in Characteristics

The thickness of the solum is more than 72 inches (183 cm). The mean annual soil temperature is 60 to 62 degrees F (16 to 17 degrees C). The soil moisture control

section is moist from about December 1 to March 31 (about 110 to 140 days) and is dry in all parts from about May 1 to September 31 (about 150 to 170 days). The particle-size control section averages 8 to 15 percent clay. Mineralogy is mixed. Disseminated lime is at the surface to at least 40 inches (102 cm) below the surface, and the soils are very slightly effervescent to violently effervescent. The content of calcium carbonate ranges from 1 to 4 percent throughout the profile. The content of organic matter is 1 to 4 percent at the surface and decreases regularly with increasing depth. A fluctuating water table can occur below a depth of 72 inches (183 cm) from December through March. Some pedons have a weakly cemented layer within the Bk horizon. This layer is 3 to 8 inches (8 to 20 cm) thick. Silica cementation makes up less than 20 percent of the layer.

The Akp horizon has dry color of 10YR 4/2, 5/2, or 5/3. Moist color is 10YR 2/2, 3/2, or 3/3. The content of clay ranges from 8 to 20 percent. Reaction is slightly alkaline or moderately alkaline.

The Ak horizon has dry color of 10YR 4/2, 5/2, or 5/3. Moist color is 10YR 2/2, 3/2, or 3/3. Texture is fine sandy loam or sandy loam. The content of clay ranges from 8 to 15 percent. Reaction is slightly alkaline or moderately alkaline.

The Bk and Bkq horizons have dry color of 10YR 5/3, 6/2, 6/3, or 6/4. Moist color is 10YR 3/3, 3/4, 4/2, 4/3, or 4/4. Texture is fine sandy loam or sandy loam. The content of clay ranges from 8 to 15 percent. Reaction is slightly alkaline or moderately alkaline.

Igo Series

The Igo series consists of very shallow, somewhat poorly drained soils that formed in alluvium derived from volcanic rocks. These soils are in interfluves on terraces. Slopes range from 0 to 3 percent. The mean annual precipitation is about 23 inches (584 mm), and the mean annual air temperature is about 61 degrees F (16 degree C).

Taxonomic class: Loamy, mixed, superactive, thermic, shallow Typic Durixeralfs

Typical Pedon

Igo gravelly loam, on an east-southeast-facing slope of 1 percent, under a cover of soft chess, grasspink, red brome, filaree, navarretia, brodiaea, and patches of wild oat, at an elevation of 195 feet (59 m). When described on 5/6/1998, the soil was moist throughout. (Colors are for dry soil unless otherwise noted.)

- A—0 to 1 inch (0 to 3 cm); light brown (7.5YR 6/4) gravelly loam, brown (7.5YR 4/3) moist; 23 percent clay; moderate thin and medium platy structure; very hard, friable, slightly sticky, slightly plastic; few fine and many very fine roots; common very fine and fine tubular and few medium irregular pores; 20 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.
- Bt1—1 to 5 inches (3 to 13 cm); brown (7.5YR 5/4) gravelly clay loam, brown (7.5YR 4/3) moist; 30 percent clay; moderate fine and medium subangular blocky structure; very hard, friable, moderately sticky, moderately plastic; few fine and common very fine roots; many very fine and fine tubular and common medium tubular and irregular pores; 40 percent discontinuous faint clay films; 20 percent gravel; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.
- Bt2—5 to 9 inches (13 to 23 cm); brown (7.5YR 5/4) gravelly clay loam, brown (7.5YR 4/3) moist; 34 percent clay; moderate fine and medium subangular blocky structure; very hard, friable, moderately sticky, moderately plastic; few very fine roots; common fine and many very fine tubular pores; 60 percent discontinuous faint clay films; 25 percent gravel; neutral, pH 7.2 by Hellige-Truog; abrupt smooth boundary.

2Bqm—9 inches (23 cm); very strongly cemented duripan; massive; very strongly cemented by silica; 10 percent fine prominent platy manganese coatings at the top of the horizon; 10 percent cobbles and 50 percent gravel; slightly alkaline, pH 7.5 by Hellige-Truog.

Type location: Butte County, California; about 0.6 mile southwest of the intersection of Cana Pine Creek Road and Highway 99, approximately 300 feet south and 1,000 feet east of the northwest corner of sec. 4, T. 23 N., R. 1 W.; 39 degrees, 52 minutes, 58 seconds north latitude and 121 degrees, 59 minutes, 24 seconds west longitude; NAD27; USGS Quad: Richardson Springs NW, California.

Range in Characteristics

Depth to the duripan is 4 to 10 inches (10 to 25 cm). The mean annual soil temperature is 62 to 65 degrees F (18 to 22 degrees C). The soil moisture control section is dry in all parts from about May to October (about 180 days). The particle-size control section averages 22 to 35 percent clay and 2 to 35 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur between the top of the duripan and a depth of 2 inches (5 to 25 cm) from December through March. Redoximorphic features, such as iron-manganese masses and iron-manganese concretions, can occur throughout the profile. Rock fragments on the surface range from 2 to 50 percent gravel and 0 to 5 percent cobbles.

The A horizon has dry color of 7.5YR 5/4 or 6/4. Moist color is 7.5YR 4/2 or 4/3. Texture is loam, gravelly loam, or gravelly clay loam. The content of clay ranges from 18 to 30 percent. The horizon has 0 to 30 percent gravel and 0 to 5 percent cobbles. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 7.5YR 4/4, 5/4, or 6/4. Moist color is 7.5YR 3/4 or 4/3 or 5YR 4/3. Texture is loam, gravelly loam, clay loam, or gravelly clay loam. The content of clay ranges from 22 to 36 percent. The horizon has 0 to 30 percent gravel and 0 to 5 percent cobbles. Reaction is neutral.

Islandbar Series

The Islandbar series consists of very deep, somewhat excessively drained soils that formed in residuum and colluvium derived from coarse grained intrusive igneous rocks, mainly trondhjemite and quartz diorite. These soils are on ridgetops and side slopes on granitic Sierra Nevada mountains. Slopes range from 2 to 70 percent. The mean annual precipitation is about 58 inches (1,473 mm), and the mean annual air temperature is about 55 degrees F (13 degrees C).

Taxonomic class: Coarse-loamy, mixed, active, mesic Typic Dystroxerepts

Typical Pedon

Islandbar sandy loam, on a northwest-facing slope of 5 percent, under a cover of conifers, hardwoods, and shrubs, at an elevation of 2,220 feet (677 m). When described on 7/22/1998, the soil was dry to a depth of 36 inches (91 cm) and was slightly moist from 36 to 72 inches (91 to 183 cm). (Colors are for dry soil unless otherwise noted.)

Oi—0 to 2 inches (0 to 5 cm); slightly decomposed plant material; abrupt smooth boundary.

A1—2 to 5 inches (5 to 13 cm); light brownish gray (10YR 6/2) sandy loam, dark grayish brown (10YR 4/2) moist; 12 percent clay; weak fine subangular blocky structure parting to weak fine granular; slightly hard, very friable, nonsticky, nonplastic; many very fine and fine roots; many very fine and fine irregular pores;

- 5 percent mica flakes; 5 percent rounded gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.
- A2—5 to 9 inches (13 to 23 cm); pale brown (10YR 6/3) sandy loam, dark grayish brown (10YR 4/2) moist; 10 percent clay; weak very fine subangular blocky structure parting to weak fine granular; slightly hard, very friable, nonsticky, nonplastic; common very fine and fine roots; common very fine tubular pores; 20 percent mica flakes; 5 percent subrounded gravel; moderately acid, pH 5.8 by Hellige-Truog; abrupt smooth boundary.
- Bw1—9 to 27 inches (23 to 69 cm); light yellowish brown (10YR 6/4) sandy loam, brown (10YR 4/3) moist; 5 percent clay; weak very fine subangular blocky structure parting to weak fine granular; slightly hard, very friable, nonsticky, nonplastic; common fine and medium roots; common very fine tubular pores; 25 percent mica flakes; 5 percent subrounded gravel; moderately acid, pH 5.8 by Hellige-Truog; clear smooth boundary.
- Bw2—27 to 36 inches (69 to 91 cm); very pale brown (10YR 7/4) sandy loam, yellowish brown (10YR 5/4) moist; 7 percent clay; weak very fine subangular blocky structure; slightly hard, very friable, nonsticky, nonplastic; common fine and medium and few coarse roots; common very fine tubular pores; 30 percent mica flakes; 5 percent subrounded gravel; moderately acid, pH 5.8 by Hellige-Truog; clear smooth boundary.
- Bw3—36 to 47 inches (91 to 119 cm); pink (7.5YR 7/4) sandy loam, brown (7.5YR 5/4) moist; 12 percent clay; weak very fine subangular blocky structure; slightly hard, very friable, nonsticky, nonplastic; common fine and medium and few coarse roots; common very fine tubular pores; 35 percent mica flakes; 5 percent subrounded gravel; moderately acid, pH 5.8 by Hellige-Truog; clear smooth boundary.
- Bw4—47 to 58 inches (119 to 147 cm); pink (7.5YR 7/4) sandy loam, light brown (7.5YR 6/4) moist; 10 percent clay; weak very fine subangular blocky structure; slightly hard, very friable, nonsticky, nonplastic; common fine and medium roots; common very fine tubular pores; moderately acid, pH 5.8 by Hellige-Truog; gradual wavy boundary.
- C1—58 to 62 inches (147 to 157 cm); very pale brown (10YR 8/4) loamy sand, yellowish brown (10YR 5/4) moist; 2 percent clay; massive; slightly hard, very friable, nonsticky, nonplastic; common fine roots; many very fine interstitial pores; moderately acid, pH 5.8 by Hellige-Truog; gradual wavy boundary.
- C2—62 to 72 inches (157 to 183 cm); extremely gravelly loamy sand; 2 percent clay; massive; very hard, extremely firm, nonsticky, nonplastic; 90 percent subangular gravel; moderately acid, pH 6.0 by Hellige-Truog.

Type location: Butte County, California; about 2 miles west of Featherfalls, approximately 20 feet west and 1,300 feet south of the northeast corner of sec. 16, T. 20 N., R. 6 E.; 39 degrees, 35 minutes, 47 seconds north latitude and 121 degrees, 17 minutes, 50 seconds west longitude; NAD83; USGS Quad: Forbestown, California.

Range in Characteristics

The depth to paralithic bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 53 to 59 degrees F (12 to 15 degrees C). The particle-size control section averages 5 to 18 percent clay and 0 to 30 percent rock fragments, mostly gravel. Mineralogy is mixed. The content of organic matter is 1 to 2 percent to a depth of 9 inches (23 cm). Rock fragments on the surface range from 5 to 10 percent gravel. Some pedons do not have a C horizon.

The A horizon has dry color of 10YR 5/2, 5/3, 6/2, 6/3, 6/4, or 7/2. Moist color is 10YR 3/1, 3/2, 4/2, or 4/3. Texture is sandy loam, fine sandy loam, or gravelly sandy loam. The content of clay ranges from 10 to 18 percent. The content of gravel is 5 to 20 percent. Reaction ranges from moderately acid to neutral.

The Bw horizon has dry color of 10YR 6/3, 6/4, 7/2, 7/3, 7/4, 8/3, or 8/4; 7.5YR 7/4; or 2.5Y 7/8 or 8/3. Moist color is 10YR 4/2, 4/3, 4/4, 5/3, 5/4, 6/3, 6/4, 7/4, or 7/6; 7.5YR 5/4, 5/6, 6/4, or 6/6; or 2.5Y 7/8 or 8/3. Texture is sandy loam, fine sandy loam, coarse sandy loam, gravelly sandy loam, or gravelly fine sandy loam. The content of clay ranges from 5 to 18 percent. The content of gravel is 0 to 30 percent. Reaction ranges from strongly acid to neutral.

The C horizon has dry color of 10YR 6/3, 7/3, 7/4, 8/3, or 8/4 or 2.5Y 8/3. Moist color is 10YR 4/3, 4/4, 5/4, 7/4, or 7/6 or 2.5Y 6/3. Texture is loamy sand, gravelly sandy loam, gravelly loamy sand, loamy coarse sand, gravelly loamy coarse sand, very gravelly loamy coarse sand, extremely gravelly loamy sand, or sandy loam. The content of clay ranges from 2 to 18 percent. The content of gravel is 0 to 90 percent. Reaction ranges from strongly acid to neutral.

Jocal Series

The Jocal series consists of very deep, well drained soils that formed in colluvium and residuum derived from soft metasedimentary rocks. These soils are in the Sierra Nevada Mountains. Slopes range from 3 to 75 percent. The mean annual precipitation is about 65 inches (1,651 mm), and the mean annual air temperature is about 55 degrees F (13 degrees C).

Taxonomic class: Fine-loamy, mixed, active, mesic Typic Haploxerults

Typical Pedon

Jocal loam. (Colors are for dry soil unless otherwise noted.)

Oi—2 to 0 inches (5 to 0 cm); decomposed needles, twigs, and bark.

A—0 to 4 inches (0 to 10 cm); brown (7.5YR 5/4) loam, dark brown (7.5YR 3/4) moist; moderate fine granular structure; soft, very friable, nonsticky, nonplastic; common very fine and fine roots; many very fine irregular pores; moderately acid; clear smooth boundary.

Bt1—4 to 8 inches (10 to 20 cm); yellowish red (5YR 5/6) loam, yellowish red (5YR 4/6) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky, nonplastic; many very fine and fine roots; many very fine irregular and tubular pores; common thin clay films in pores; moderately acid; clear smooth boundary.

Bt2—8 to 20 inches (20 to 51 cm); reddish yellow (7.5YR 6/6) clay loam, strong brown (7.5YR 5/6) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; common very fine and fine roots; common very fine irregular and tubular pores; common thin clay films in pores; moderately acid; clear smooth boundary.

Bt3—20 to 30 inches (51 to 76 cm); reddish yellow (7.5YR 8/6) clay loam, strong brown (7.5YR 5/6) moist; moderate medium subangular blocky structure; slightly hard, very friable, sticky, slightly plastic; common very fine to medium roots; common very fine to medium tubular pores; many thin clay films in pores; strongly acid; clear smooth boundary.

Bt4—30 to 42 inches (76 to 107 cm); reddish yellow (7.5YR 8/6) silty clay loam, strong brown (7.5YR 5/6) moist; weak medium subangular blocky structure; slightly hard, very friable, sticky, slightly plastic; common very fine to medium roots; common very fine to medium tubular pores; common thin clay films in pores; 10 percent saprolitic cobbles and gravel; very strongly acid; abrupt smooth boundary.

Bt5—42 to 59 inches (107 to 150 cm); pink (5YR 7/4) silty clay loam, reddish yellow (5YR 6/6) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; few very fine to coarse roots; few very fine and

medium tubular pores; common thin clay films in pores; very strongly acid; clear wavy boundary.

Bt6—59 to 73 inches (150 to 185 cm); mixed pink (5YR 7/4) and light red (2.5YR 6/8) silty clay loam, mixed light reddish brown (5YR 6/4) and red (2.5YR 5/8) moist; massive; soft, very friable, slightly sticky, slightly plastic; few very fine to coarse roots; few very fine and medium tubular pores; few thin clay films in pores; very strongly acid.

Type location: Yuba County, California about 0.45 mile south of Eagleville, approximately 300 feet north and 700 feet west of the southeast corner of sec. 20, T. 20 N., R. 8 E.; 39 degrees, 34 minutes, 18 seconds north latitude and 121 degrees, 5 minutes, 55 seconds west longitude; NAD27; USGS Quad: Strawberry Valley, California.

Range in Characteristics

The depth of the soils is more than 60 inches (152 cm). The mean annual soil temperature is 47 to 54 degrees F (8 to 12 degrees C). The soil moisture control section is dry in all parts from about July 15 or August 1 to October 15 (about 95 days). Mineralogy is mixed. The content of organic matter is 2 to 5 percent to a depth of 8 inches (20 cm).

The A horizon has dry color of 7.5YR 5/4 or 5YR 5/4 or 4/4. Moist color is 7.5YR 3/4 or 5YR 3/4. Texture is loam. The content of clay ranges from 15 to 27 percent. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 7.5YR 8/6, 6/6, or 4/6 or 5YR 5/6 or 7/4. Moist color is 7.5YR 5/6 or 4/6 or 5YR 4/6, 6/6, or 5/8. Texture is loam, clay loam, or silty clay loam. The content of clay ranges from 27 to 35 percent. Base saturation is 20 to 30 percent. Reaction ranges from very strongly acid to moderately acid.

Jocal Taxadjunct

The Jocal taxadjunct consists of deep, well drained soils that formed in tephra deposited over colluvium and residuum derived from metasediments. These soils are on metamorphic Sierra Nevada mountains. Slopes range from 2 to 70 percent. The mean annual precipitation is about 70 inches (1,778 mm), and the mean annual air temperature is about 52 degrees F (11 degrees C).

Taxonomic class: Fine-loamy, mixed, semiactive, mesic Andic Haploxerults

Typical Pedon

Jocal taxadjunct, on a southwest-facing slope of 35 percent, under a cover of Sierra mixed conifers, at an elevation of 3,600 feet (1,097 m). When described on 6/20/2004, the soil was slightly moist throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 3 inches (0 to 8 cm); slightly decomposed plant material consisting of needles, twigs, and cones; abrupt smooth boundary.

A—3 to 4 inches (8 to 10 cm); brown (7.5YR 4/3) gravelly loam, dark brown (7.5YR 3/2) moist; 12 percent clay; moderate very fine subangular blocky structure; loose, very friable, nonsticky, nonplastic; few very fine roots; many very fine irregular pores; 20 percent metasedimentary gravel; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 10.5; abrupt smooth boundary.

Bw—4 to 9 inches (10 to 23 cm); brown (7.5YR 5/4) gravelly loam, brown (7.5YR 4/4) moist; 13 percent clay; moderate very fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; common fine and many very fine roots; common very fine and fine tubular pores; 25 percent metasedimentary gravel; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 11.0; abrupt smooth boundary.

- Bt1—9 to 19 inches (23 to 48 cm); strong brown (7.5YR 5/6) gravelly loam, strong brown (7.5YR 4/6) moist; 20 percent clay; moderate fine subangular blocky structure; soft, very friable, nonsticky, slightly plastic; common very fine and fine and few medium roots; common very fine and fine tubular pores; 5 percent distinct clay films; 30 percent metasedimentary gravel; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 10.0; gradual smooth boundary.
- Bt2—19 to 33 inches (48 to 84 cm); strong brown (7.5YR 5/6) gravelly loam, strong brown (7.5YR 4/6) moist; 25 percent clay; moderate fine subangular blocky structure; soft, friable, nonsticky, slightly plastic; common very fine and fine and common medium roots; common very fine and fine tubular pores; 20 percent distinct clay films; 30 percent metasedimentary gravel; moderately acid, pH 6.0 by Hellige-Truog; NaF pH 10.0; gradual smooth boundary.
- Bt3—33 to 46 inches (84 to 117 cm); reddish yellow (7.5YR 7/6) very gravelly clay loam, strong brown (7.5YR 4/6) moist; 27 percent clay; moderate fine and medium subangular blocky structure; soft, friable, slightly sticky, slightly plastic; few fine, common medium, and few coarse roots; few very fine tubular pores; 20 percent distinct clay films; 50 percent metasedimentary gravel; very strongly acid, pH 5.0 by Hellige-Truog; clear smooth boundary.
- BCt—46 to 52 inches (117 to 132 cm); pink (7.5YR 7/4) extremely gravelly clay loam, strong brown (7.5YR 4/6) moist; 30 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine roots; few very fine tubular pores; 10 percent distinct clay films; 75 percent metasedimentary gravel; very strongly acid, pH 4.8 by Hellige-Truog; gradual smooth boundary.
- Cr—52 to 68 inches (132 to 173 cm); moderately cemented metasedimentary rock.

Type location: Butte County, California; about 3.5 miles northeast of Clipper Mills, 400 feet west and 1,500 feet south of the northeast corner of sec. 24, T. 20 N., R. 7 E.; 39 degrees, 34 minutes, 49 seconds north latitude and 121 degrees, 7 minutes, 58 seconds west longitude; NAD83; USGS Quad: Clipper Mills, California.

Range in Characteristics

The depth to paralithic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 47 to 52 degrees F (8 to 11 degrees C). The particle-size control section averages 18 to 30 percent clay and 25 to 30 percent rock fragments, mostly gravel. Mineralogy is mixed. Acid-oxalate extractable Al plus $\frac{1}{2}$ Fe ranges from 1.5 to 1.0 percent (by weight). Rock fragments on the surface range from 0 to 15 percent gravel.

The A horizon has dry color of 7.5YR 4/3, 4/6, or 5/4; 5YR 4/6; or 10YR 4/4. Moist color is 7.5YR 3/2, 3/3, or 3/4 or 5YR 3/4. Texture is gravelly loam, gravelly sandy loam, loam, or sandy loam. The content of clay ranges from 9 to 17 percent. The content of gravel is 5 to 20 percent. The content of organic matter is 10 to 14 percent. By sum of cations, base saturation ranges from 15 to 45 percent. NaF pH is 10.5 to 11.8. Reaction ranges from strongly acid to slightly acid.

The Bw horizon has dry color of 7.5YR 4/6, 5/4, or 5/6 or 10YR 5/4 or 6/4. Moist color is 7.5YR 3/3, 3/4, 4/4, or 4/6 or 5YR 3/4. Texture is gravelly loam, gravelly sandy loam, loam, or sandy loam. The content of clay ranges from 10 to 22 percent. The horizon has 0 to 30 percent gravel and 0 to 5 percent cobbles. The content of organic matter is 4 to 8 percent. By sum of cations, base saturation ranges from 10 to 20 percent. NaF pH is 10.5 to 11.8. Reaction ranges from very strongly acid to slightly acid.

The Bt1 and Bt2 horizons have dry color of 7.5YR 5/6 or 10YR 6/4. Moist color is 7.5YR 4/4 or 4/6. Texture is gravelly loam, sandy loam, or clay loam. The content of clay ranges from 15 to 30 percent. The horizons have 0 to 30 percent gravel and 0 to 15 percent cobbles. The content of organic matter is 1 to 3 percent. By sum of

cations, base saturation ranges from 2 to 20 percent. NaF pH is 10.0 to 11.0. Reaction is moderately acid or slightly acid.

The Bt3 horizon has dry color of 7.5YR 6/6 or 7/6 or 10YR 6/6. Moist color is 7.5YR 4/6 or 5/6 or 10YR 5/6. Texture is very gravelly clay loam, very gravelly loam, or very gravelly silt loam. The content of clay ranges from 15 to 30 percent. The horizon has 35 to 50 percent gravel and 0 to 15 percent cobbles. The content of organic matter is 0.3 to 3 percent. By sum of cations, base saturation ranges from 2 to 20 percent. NaF pH is less than 9.8. Reaction ranges from very strongly acid to slightly acid.

The BCt horizon has dry color of 7.5YR 6/4, 6/6, or 7/4 or 10YR 6/6. Moist color is 7.5YR 4/6 or 5/6 or 10YR 5/8. Texture is extremely gravelly clay loam, extremely gravelly silt loam, very gravelly silt loam, very gravelly silty clay loam, or extremely cobbly loam. The content of clay ranges from 15 to 30 percent. The horizon has 0 to 75 percent gravel and 0 to 50 percent cobbles. The content of organic matter is 0.3 to 0.1 percent. By sum of cations, base saturation ranges from 2 to 20 percent. NaF pH is less than 9.8. Reaction ranges from very strongly acid to moderately acid.

The Jocal taxadjunct is a taxadjunct because it has andic soil material at the surface. The difference does not significantly affect the use, management, or interpretations of the soils.

Jokerst Series

The Jokerst series consists of very shallow, poorly drained soils that formed in residuum derived from volcanic mudflow breccia. These soils are in swales and broad planar areas on ridgetops and side slopes on volcanic ridges on Cascade foothills. Slopes range from 0 to 30 percent. The mean annual precipitation is about 26 inches (660 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Loamy, mixed, superactive, thermic Lithic Haploxeralfs

Typical Pedon

Jokerst very cobbly loam, on a west-facing slope of 3 percent, under a cover of annual grasses and forbs, at an elevation of 317 feet (97 m). When described on 3/26/1997, the soil was dry from 0 to 1 inch (0 to 2.5 cm) and slightly moist from 1 to 4 inches (2.5 to 10 cm). (Colors are for dry soil unless otherwise noted.)

A—0 to 1 inch (0 to 3 cm); reddish yellow (7.5YR 6/6) very cobbly loam, dark reddish brown (2.5YR 3/4) moist; 15 percent clay; weak medium platy structure parting to moderate fine and medium subangular blocky; moderately hard, firm, slightly sticky, slightly plastic; many very fine roots; few very fine vesicular and tubular pores; noneffervescent; 10 percent gravel, 15 percent cobbles, and 10 percent stones; slightly acid, pH 6.4 by pH meter 1:1 water; clear smooth boundary.

Bt—1 to 4 inches (3 to 10 cm); reddish yellow (5YR 6/6) gravelly loam, dark reddish brown (2.5YR 3/4) moist; 18 percent clay; moderate thin and medium platy structure parting to moderate medium subangular blocky; moderately hard, firm, slightly sticky, slightly plastic; common very fine roots; common very fine vesicular and tubular pores; many faint continuous clay films on faces of peds and on rock fragments; common fine irregular iron-manganese masses between peds; noneffervescent; 15 percent gravel, 10 percent cobbles, and 5 percent stones; slightly acid, pH 6.5 by pH meter 1:1 water; abrupt smooth boundary.

R—4 inches (10 cm); indurated volcanic mudflow breccia; roots matted on top of the bedrock; ¹/₁₆-inch (2-mm) manganese capping.

Type location: Butte County, California; about 0.7 mile north of Rock Creek Road and about 2.8 miles east of Meridian Road, approximately 1,625 feet south and 775

feet west of the northeast corner of sec. 16, T. 23 N., R. 1 E.; 39 degrees, 51 minutes, 3.18 seconds north latitude and 121 degrees, 51 minutes, 54.71 seconds west longitude; NAD83; USGS Quad: Richardson Springs SE, California.

Range in Characteristics

The depth to lithic bedrock is 4 to 10 inches (5 to 25 cm). The mean annual soil temperature is 59 to 64 degrees F (15 to 18 degrees C). The soil moisture control section is dry in all parts from about May to October (about 150 to 200 days). The particle-size control section averages 18 to 24 percent clay and 10 to 35 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur between the top of the bedrock and the surface of the soil from November through March. Redoximorphic features occur as iron-manganese masses in the A and Bt horizons, iron-manganese concretions in the Bt horizon, and manganese masses in layers $\frac{1}{16}$ to $\frac{1}{8}$ inch (2 to 4 mm) thick on top of the bedrock. Rock fragments on the surface range from 0 to 10 percent gravel, 2 to 30 percent cobbles, 3 to 50 percent stones, and 0 to 5 percent boulders. Some pedons have an organic mat, $\frac{1}{16}$ inch (2 mm) thick, on the surface.

The A horizon has dry color of 5YR 4/6 or 5/6 or 7.5YR 6/6. Moist color is 2.5YR 3/3 or 3/4; 5YR 3/2, 3/4, or 4/3; or 7.5YR 3/2 or 3/3. Texture is loam, gravelly loam, cobbly loam, stony loam, very cobbly loam, or very stony loam. The content of clay ranges from 12 to 21 percent. The horizon has 10 to 25 percent gravel, 10 to 40 percent cobbles, and 0 to 30 percent stones. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 5YR 5/6 or 6/6 or 7.5YR 6/6. Moist color is 2.5YR 3/3 or 3/4, 5YR 4/3 or 4/4, or 7.5YR 3/3 or 3/4. Texture is loam, gravelly loam, or cobbly loam. The content of clay ranges from 16 to 25 percent. The horizon has 10 to 25 percent gravel, 0 to 20 percent cobbles, and 0 to 10 percent stones. Reaction is slightly acid or neutral.

Katskillhill Series

The Katskillhill series consists of deep, moderately well drained soils that formed in residuum and colluvium derived from metavolcanic rocks, mainly greenschist. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada foothills. Slopes range from 2 to 15 percent. The mean annual precipitation is about 30 inches (762 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine, mixed, superactive, thermic Ultic Palexeralfs

Typical Pedon

Katskillhill loam, on an east-facing slope of 8 percent, under a cover of grasses, forbs, and a trace of blue oak, at an elevation of 720 feet (219 m). When described on 6/6/1999, the soil was dry to a depth of 12 inches (31 cm) and slightly moist from 12 to 42 inches (31 to 107 cm). (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); yellowish brown (10YR 5/4) loam, dark yellowish brown (10YR 4/4) moist; 12 percent clay; moderate very fine and fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; many very fine roots; many fine and very fine tubular pores; 20 percent fine irregular yellowish red (5YR 5/6) oxidized iron masses throughout; very strongly acid, pH 5.0 by Hellige-Truog; abrupt smooth boundary.

BAt—2 to 8 inches (5 to 20 cm); yellowish red (5YR 5/6) loam, yellowish red (5YR 4/6) moist; 15 percent clay; moderate fine and medium subangular blocky structure; slightly hard, very friable, nonsticky, slightly plastic; many very fine

roots; many fine and very fine tubular pores; 3 percent faint clay films on vertical faces of peds and on surfaces along root channels; 10 percent subangular greenschist gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.

Bt1—8 to 12 inches (20 to 30 cm); yellowish red (5YR 4/6) very gravelly loam, reddish brown (5YR 4/4) moist; 25 percent clay; moderate medium and fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine roots between peds; many fine, common coarse, and many very fine tubular pores; 15 percent faint clay films on faces of peds; 60 percent subangular greenschist gravel; moderately acid, pH 6.0 by Hellige-Truog; clear wavy boundary.

2Bt2—12 to 19 inches (30 to 48 cm); yellowish red (5YR 4/6) clay, yellowish red (5YR 4/6) moist; 46 percent clay; strong coarse prismatic structure parting to strong medium and coarse subangular blocky; extremely hard, extremely firm, very sticky, very plastic; common very fine roots between peds; common fine and very fine tubular pores; 70 percent prominent clay films on faces of peds; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

2Btss1—19 to 29 inches (48 to 74 cm); yellowish red (5YR 5/6) clay, yellowish red (5YR 4/6) moist; 52 percent clay; strong coarse subangular blocky structure; extremely hard, extremely firm, very sticky, very plastic; few very fine roots between peds; few very fine tubular pores; 35 percent prominent slickensides; 70 percent prominent clay films on faces of peds; 10 percent fine spherical manganese concretions; moderately alkaline, pH 8.0 by Hellige-Truog; clear wavy boundary.

2Btss2—29 to 42 inches (74 to 107 cm); yellowish red (5YR 5/6) clay, yellowish red (5YR 4/6) moist; 52 percent clay; strong coarse subangular blocky structure; extremely hard, extremely firm, very sticky, very plastic; few very fine roots between peds; few fine and very fine tubular pores; 15 percent prominent slickensides; 70 percent prominent clay films on faces of peds; 1 percent fine spherical manganese concretions; 10 percent subangular greenschist gravel; moderately alkaline, pH 8.0 by Hellige-Truog; abrupt wavy boundary.

2R—42 inches (107 cm); unweathered, indurated greenschist.

Type location: Butte County, California; about 2.8 miles southeast of Wyandotte, approximately 1,600 feet south and 1,900 feet west of the northeast corner of sec. 5, T. 18 N., R. 5 E.; 39 degrees, 26 minutes, 57.82 seconds north latitude and 121 degrees, 25 minutes, 58.54 seconds west longitude; NAD83; USGS Quad: Bangor, California.

Range in Characteristics

The depth to lithic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 59 to 65 degrees F (15 to 18 degrees C). The soil moisture control section is dry in all parts from about June 1 to October 15 (about 150 days). The particle-size control section averages 35 to 45 percent clay and 10 to 20 percent rock fragments, mostly gravel. Mineralogy is mixed. Slickensides range from 15 to 35 percent in the 2Btss horizon. Rock fragments on the surface range from 0 to 3 percent gravel. Some pedons have a BA horizon.

The A horizon has dry color of 7.5YR 5/4 or 5/6 or 10YR 5/4. Moist color is 7.5YR 3/4, 4/3, or 4/4 or 10YR 4/4. Texture is loam. The content of clay ranges from 12 to 18 percent. The content of gravel is 0 to 5 percent. Redoximorphic features, such as soft oxidized iron masses with dry color of 5YR 5/6, can occur in this horizon. By sum of cations, base saturation ranges from 60 to 70 percent. The content of organic matter is 3 to 9 percent. Reaction ranges from very strongly acid to slightly acid.

The BA horizon has dry color of 7.5YR 5/6 or 5YR 5/6. Moist color is 5YR 4/4 or 4/6. Texture is loam. The content of clay ranges from 15 to 20 percent. The content of

gravel is 4 to 10 percent. By sum of cations, base saturation ranges from 55 to 73 percent. The content of organic matter is 1 to 4 percent. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 5YR 4/6 or 5/6. Moist color is 5YR 4/4 or 4/6. Texture is loam, gravelly loam, or very gravelly loam. The content of clay ranges from 21 to 25 percent. The content of gravel is 5 to 60 percent. By sum of cations, base saturation ranges from 65 to 74 percent. The content of organic matter is 1 to 1.5 percent. Reaction is moderately acid or slightly acid.

The 2Bt horizon has dry color of 5YR 5/6 or 5/8 or 7.5YR 5/4, 5/6, or 6/6. Moist color is 5YR 4/4 or 4/6 or 7.5YR 4/4 or 4/6. Texture is clay loam, clay, or gravelly clay. The content of clay ranges from 35 to 50 percent. The content of gravel is 0 to 20 percent. By sum of cations, base saturation ranges from 75 to 85 percent. The content of organic matter is 0.5 to 1.0 percent. Reaction ranges from very strongly acid to slightly acid.

The 2Btss horizon has dry color of 5YR 5/6, 7.5YR 5/6, or 10YR 6/6. Moist color is 5YR 4/6 or 7.5YR 4/6 or 5/6. Texture is clay. The content of clay ranges from 45 to 55 percent. The content of gravel is 0 to 10 percent. Redoximorphic features, such as manganese concretions, can occur in this horizon. The content of organic matter is 0 to 0.5 percent. Reaction ranges from neutral to moderately alkaline.

Kimball Series

The Kimball series consists of very deep, well drained soils that formed in alluvium derived from igneous and metamorphic rocks. These soils are on low terraces. Slopes range from 0 to 2 percent. The mean annual precipitation is about 22 inches (559 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine, mixed, active, thermic Mollic Palexeralfs

Typical Pedon

Kimball loam, on a east-facing slope of 1 percent, under a cover of annual grasses and forbs, at an elevation of 100 feet (30 m). (Colors are for dry soil unless otherwise noted.)

- Ap1—0 to 2 inches (0 to 5 cm); brown (7.5YR 4/4) loam, dark brown (7.5YR 3/4) moist; 18 percent clay; moderate fine and medium granular structure; soft, friable, nonsticky, nonplastic; many very fine roots; many very fine tubular pores; slightly acid, pH 6.4; abrupt smooth boundary.
- Ap2—2 to 4 inches (5 to 10 cm); brown (7.5YR 4/4) loam, dark brown (7.5YR 3/4) moist; 20 percent clay; massive; hard, friable, nonsticky, nonplastic; many very fine roots; many very fine tubular pores; slightly acid, pH 6.3; abrupt wavy boundary.
- Ap3—4 to 6 inches (10 to 15 cm); brown (7.5YR 4/4) loam, dark brown (7.5YR 3/4) moist; 21 percent clay; moderate thin platy structure; hard, friable, nonsticky, nonplastic; common very fine roots; many fine tubular pores; slightly acid, pH 6.2; clear smooth boundary.
- A—6 to 10 inches (15 to 25 cm); brown (7.5YR 4/4) loam, dark brown (7.5YR 3/4) moist; 23 percent clay; massive; hard, friable, nonsticky, nonplastic; many very fine roots; many fine tubular pores; slightly acid, pH 6.3; clear smooth boundary.
- BAt—10 to 17 inches (25 to 43 cm); reddish brown (5YR 4/4) loam, dark reddish brown (5YR 3/4) moist; 25 percent clay; massive; hard, friable, slightly sticky, slightly plastic; common very fine roots; few fine and many very fine tubular pores; 10 percent clay films on surfaces along pores; slightly acid, pH 6.3; abrupt wavy boundary.
- 2Btss—17 to 34 inches (43 to 86 cm); reddish brown (5YR 4/4) clay, reddish brown (5YR 4/4) moist; 47 percent clay; moderate coarse prismatic structure; extremely

hard, very firm, moderately sticky, very plastic; common very fine roots between peds; common very fine tubular pores; 5 percent slickensides and 80 percent continuous clay films on surfaces along pores, on faces of peds, and as bridges; slightly acid, pH 6.6; gradual wavy boundary.

2Bt—34 to 46 inches (86 to 117 cm); brown (7.5YR 5/4) sandy clay loam, brown (7.5YR 4/4) moist; 33 percent clay; massive; very hard, firm, slightly sticky, slightly plastic; few very fine roots; many very fine tubular pores; 60 percent continuous clay films on surfaces along pores; 1 percent manganese coatings; neutral, pH 7.1; diffuse irregular boundary.

2BC—46 to 64 inches (117 to 163 cm); brown (7.5YR 5/4) sandy clay loam, dark brown (7.5YR 3/4) moist; 30 percent clay; massive; hard, firm, slightly sticky, slightly plastic; few roots; many very fine tubular pores; neutral, pH 6.8.

Type location: Butte County, California; about 2 miles northwest of Honcut, approximately 1,850 feet south and 2,050 feet west of the northeast corner of sec. 7, T. 17 N., R. 4 E.; 39 degrees, 20 minutes, 49 seconds north latitude and 121 degrees, 33 minutes, 46 seconds west longitude; NAD27; USGS Quad: Honcut, California.

Range in Characteristics

The depth of the soils is more than 80 inches (203 cm). The mean annual soil temperature is 61 to 65 degrees F (16 to 18 degrees C). The particle-size control section averages 40 to 45 percent clay and 0 to 10 percent rock fragments, mostly gravel. Mineralogy is mixed.

The Ap and A horizons have dry color of 7.5YR 4/4, 4/6, or 5/4 or 5YR 4/6. Moist color is 7.5YR 3/4 or 5YR 3/4. Texture is loam. The content of clay ranges from 10 to 15 percent. The content of gravel is 0 to 15 percent. The content of organic matter is 0.5 to 3 percent. Reaction is slightly acid or neutral.

The BA_t horizon has dry color of 5YR 4/4 or 5/6. Moist color is 5YR 3/4 or 4/4. Texture is loam or clay loam. The content of clay ranges from 24 to 30 percent. The content of gravel is 0 to 15 percent. The content of organic matter is 0 to 0.5 percent. Reaction is slightly acid or neutral.

The 2B_{tss} horizon has dry color of 5YR 4/4 or 5/4 or 7.5YR 5/4. Moist color is 5YR 4/4 or 7.5YR 4/4. Texture is clay. The content of clay ranges from 40 to 50 percent. The content of gravel is 0 to 15 percent. The content of organic matter is 0 to 0.5 percent. Reaction is neutral.

The 2B_t horizon has dry color of 5YR 4/4 or 5/4 or 7.5YR 5/4. Moist color is 5YR 4/4 or 7.5YR 4/4. Texture is sandy clay loam or clay loam. The content of clay ranges from 30 to 40 percent. The content of gravel is 0 to 15 percent. The content of organic matter is 0 to 0.5 percent. Reaction is neutral.

The 2BC horizon has dry color of 7.5YR 5/4 or 5YR 5/4. Moist color is 7.5YR 3/4 or 4/4. Texture is sandy clay loam. The content of clay ranges from 27 to 35 percent. The content of gravel is 0 to 15 percent. The content of organic matter is 0 to 0.5 percent. Reaction ranges from slightly acid to slightly alkaline.

Kusalslough Series

The Kusalslough series consists of very deep, somewhat poorly drained soils that formed in alluvium derived from mixed rock sources. These soils are on the margins of flood plains and flood basins. Slopes are 0 to 1 percent. The mean annual precipitation is about 22 inches (559 mm), and the mean annual air temperature is about 61 degrees F (17 degrees C).

Taxonomic class: Fine, mixed, superactive, nonacid, thermic Oxyaquic Xerofluvents

Typical Pedon

Kusalslough silty clay loam, on a slope of less than 1 percent, in a walnut orchard, at an elevation of 127 feet (39 m). When described on 5/24/1994, the soil was moist throughout. (Colors are for dry soil unless otherwise noted.)

Ap1—0 to 4 inches (0 to 10 cm); pale brown (10YR 6/3) silty clay loam, dark grayish brown (10YR 4/2) moist; 31 percent clay; strong very thick platy structure parting to strong thin and medium platy; hard, firm, slightly sticky, slightly plastic; few very fine roots; few very fine and fine tubular pores; moderately acid, pH 5.6 by Hellige-Truog; clear smooth boundary.

Ap2—4 to 12 inches (10 to 30 cm); pale brown (10YR 6/3) silty clay loam, dark grayish brown (10YR 4/2) moist; 32 percent clay; moderate coarse subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; few very fine to coarse roots; common fine and medium tubular pores; neutral, pH 6.8 by Hellige-Truog; clear smooth boundary.

Bw—12 to 21 inches (30 to 53 cm); pale brown (10YR 6/3) and brown (10YR 5/3) silty clay loam, brown (10YR 4/3) and dark grayish brown (10YR 4/2) moist; 35 percent clay; moderate medium and coarse subangular blocky structure; soft, very friable, moderately sticky, moderately plastic; few medium and coarse and common very coarse roots; many very fine and common fine tubular pores; neutral, pH 6.8 by Hellige-Truog; gradual smooth boundary.

Ab—21 to 31 inches (53 to 79 cm); grayish brown (10YR 5/2) silty clay loam, dark grayish brown (10YR 4/2) moist; 37 percent clay; moderate medium and coarse subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; few medium, common coarse, and many very coarse roots; common fine and medium tubular pores; common fine distinct brown (7.5YR 4/4 moist) irregularly shaped oxidized iron masses; slightly alkaline, pH 7.5 by Hellige-Truog; clear smooth boundary.

Bwb1—31 to 41 inches (79 to 104 cm); brown (10YR 5/3) silty clay loam, dark grayish brown (10YR 4/2) moist; 35 percent clay; moderate medium and coarse subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; few fine and common coarse and very coarse roots; common fine and medium tubular pores; common fine distinct brown (7.5YR 4/4 moist) irregularly shaped oxidized iron masses; slightly alkaline, pH 7.5 by Hellige-Truog; abrupt smooth boundary.

Bwb2—41 to 57 inches (104 to 145 cm); grayish brown (10YR 5/2) silty clay, dark grayish brown (10YR 4/2) moist; 45 percent clay; moderate medium and coarse subangular blocky structure; hard, firm, very sticky, very plastic; few fine to very coarse roots; common fine tubular pores; few fine distinct reddish brown (5YR 4/4 moist) irregularly shaped oxidized iron masses; slightly alkaline, pH 7.5 by Hellige-Truog; clear smooth boundary.

Bwb3—57 to 69 inches (145 to 175 cm); grayish brown (10YR 5/2) silty clay, dark grayish brown (10YR 4/2) moist; 53 percent clay; moderate medium and coarse subangular blocky structure; hard, firm, very sticky, very plastic; few medium roots; few fine and medium tubular pores; slightly alkaline, pH 7.5 by Hellige-Truog; gradual wavy boundary.

Bwb4—69 to 80 inches (175 to 203 cm); grayish brown (10YR 5/2) silty clay, brown (10YR 4/3) moist; 49 percent clay; moderate medium and coarse subangular blocky structure; hard, firm, very sticky, very plastic; few fine tubular pores; slightly alkaline, pH 7.5 by Hellige-Truog.

Type location: Butte County, California; about 4 miles west of Chico, approximately 4,625 feet west of Mt. Diablo base meridian and 200 feet south of Grape Way; in an unsectionized area in the Arroyo Chico Land Grant; 39 degrees, 43 minutes, 2

seconds north latitude and 121 degrees, 56 minutes, 5 seconds west longitude; NAD27; USGS Quad: Ord Ferry, California.

Range in Characteristics

The thickness of the solum is more than 60 inches (152 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry in all parts from about May 1 to October 31 (about 170 to 190 days) and moist in all parts from about January 1 to March 31. The particle-size control section averages 35 to 40 percent clay and 50 to 60 percent silt. Mineralogy is mixed. A fluctuating water table can occur at a depth of 14 to 72 inches (36 to 183 cm) from December through May. Redoximorphic features, such as soft oxidized iron masses with color of 7.5YR 4/6 or 4/4 or 5YR 4/4 moist, occur in the Bw, Ab, and Bwb horizons.

The Ap horizon has dry color of 10YR 6/2 or 6/3. Moist color is 10YR 4/2 or 4/3. Texture is silty clay loam. The content of clay ranges from 28 to 35 percent. The content of organic matter is 1 to 4 percent. Reaction ranges from moderately acid to neutral.

The Bw horizon has dry color of 10YR 5/2, 5/3, or 6/3. Moist color is 10YR 3/3, 4/2, or 4/3. Texture is clay loam or silty clay loam. The content of clay ranges from 30 to 40 percent. The content of organic matter is 0.5 to 2 percent. Reaction is neutral or slightly alkaline.

The Ab horizon has dry color of 10YR 4/2, 4/3, or 5/2. Moist color is 10YR 3/1, 3/2, 3/3, or 4/2. Texture is clay loam or silty clay loam. The content of clay ranges from 30 to 40 percent. The content of organic matter is 1 to 3 percent. Reaction is neutral or slightly alkaline.

The Bwb horizon has dry color of 10YR 4/2, 4/3, 5/2, or 5/3. Moist color is 10YR 3/3, 3/4, 4/2, 4/3, or 4/4. Texture is silty clay loam or clay loam in the upper part of the horizon and clay or silty clay in the lower part. The content of clay ranges from 35 to 55 percent. The content of organic matter is 0.1 to 2 percent. Reaction is neutral or slightly alkaline.

Lavatop Series

The Lavatop series consists of moderately deep, well drained soils that formed in mixed tephra, residuum, and colluvium derived from Lovejoy basalt. These soils are on the tops and side slopes of basalt ridges on volcanic Sierra Nevada mountains. Slopes range from 0 to 30 percent. The mean annual precipitation is about 80 inches (2,032 mm), and the mean annual air temperature is about 51 degrees F (11 degrees C).

Taxonomic class: Medial-skeletal, amorphic, mesic Humic Haploxerands

Typical Pedon

Lavatop gravelly medial fine sandy loam, on a south-facing slope of 2 percent, under a cover of greenleaf manzanita, ponderosa pine, and California black oak, at an elevation of 4,210 feet (1,283 m). When described on 6/19/1995, the soil was moist throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 0.5 inch (0 to 1.27 cm); litter of pine needles, leaves, cones, and twigs.
 A—0.5 inch to 4 inches (1.27 to 9 cm); dark brown (10YR 3/3) gravelly medial fine sandy loam, very dark grayish brown (10YR 3/2) moist; 18 percent clay; weak very fine subangular blocky structure; loose, very friable, nonsticky, nonplastic; many fine and medium and few very fine roots; many very fine irregular pores; noneffervescent; 25 percent subangular basalt gravel; strongly acid, pH 5.5 by pH meter 1:1 water; NaF pH 10.6; clear smooth boundary.

Bw1—4 to 15 inches (9 to 41 cm); brown (10YR 4/3) very gravelly medial sandy loam, very dark grayish brown (10YR 3/2) moist; 20 percent clay; weak very fine subangular blocky structure; loose, very friable, nonsticky, slightly plastic; many fine and medium and few coarse and very coarse roots; many very fine irregular pores; noneffervescent; 40 percent subangular basalt gravel; strongly acid, pH 5.4 by pH meter 1:1 water; NaF pH 10.9; clear smooth boundary.

Bw2—15 to 26 inches (41 to 66 cm); dark yellowish brown (10YR 4/4) extremely gravelly medial sandy loam, dark brown (10YR 3/3) moist; 18 percent clay; weak very fine subangular blocky structure; loose, very friable, nonsticky, slightly plastic; many medium roots; many very fine irregular pores; noneffervescent; 30 percent subangular basalt gravel and 50 percent subangular basalt cobbles; strongly acid, pH by 5.3 by pH meter 1:1 water; NaF pH 10.6; abrupt smooth boundary.

R—26 inches (66 cm); fractured, indurated basalt.

Type location: Butte County, California; about 6.1 miles east of Camp Eighteen, approximately 1,250 feet east and 250 feet north of the southwest corner of sec. 36, T. 21 N., R. 7 E.; 39 degrees, 37 minutes, 45.8 seconds north latitude and 121 degrees, 8 minutes, 54 seconds west longitude; NAD27; USGS Quad: Cascade, California.

Range in Characteristics

The depth to lithic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 47 to 54 degrees F (11 to 12 degrees C). The soil moisture control section is dry in all parts from about July to October (about 90 days). The particle-size control section averages 18 to 20 percent clay and 45 to 60 percent rock fragments, mostly gravel and cobbles. Mineralogy is amorphous. By ammonium acetate, base saturation ranges from 9 to 23 percent to a depth of 25.5 inches (66 cm). By ammonium acetate, CEC ranges from 36 to 40 to a depth of 25.5 inches (66 cm). Acid oxalate extractable Al plus $\frac{1}{2}$ Fe ranges from 2.9 to 3.7 to a depth of 25.5 inches (66 cm). P retention ranges from 85 to 96 to a depth of 25.5 inches (66 cm). Rock fragments on the surface range from 5 to 30 percent gravel, 0 to 40 percent cobbles, and 0 to 30 percent stones.

The A horizon has dry color of 10YR 3/3. Moist color is 10YR 3/2. Texture generally is gravelly medial fine sandy loam, but in some pedons it is extremely gravelly medial fine sandy loam, extremely cobbly medial fine sandy loam, medial loam, or gravelly medial loam. The content of clay ranges from 18 to 20 percent. The horizon has 10 to 40 percent gravel and 0 to 40 percent cobbles. The content of organic matter is 10 to 15 percent. NaF pH is 10.5 to 11.0. Reaction is strongly acid or moderately acid.

The Bw horizon has dry color of 10YR 4/3 or 4/4. Moist color is 10YR 3/2, 3/3, or 4/2. Texture is very gravelly medial sandy loam, extremely gravelly medial sandy loam, extremely cobbly medial sandy loam, or extremely stony medial fine sandy loam. The content of clay ranges from 18 to 20 percent. The horizon has 30 to 40 percent gravel, 0 to 50 percent cobbles, 0 to 35 percent stones, and 0 to 25 percent boulders. The content of organic matter is 5 to 12 percent. NaF pH is 10.5 to 11.0. Reaction is strongly acid.

Lewisflat Series

The Lewisflat series consists of very deep, well drained soils that formed in tephra over residuum and colluvium weathered from quartz diorite. These soils are on side slopes on granitic Sierra Nevada mountains. Slopes range from 2 to 50 percent. The mean annual precipitation is about 75 inches (1,905 mm), and the mean annual air temperature is about 52 degrees F (11 degrees C).

Taxonomic class: Fine-loamy, mixed, semiactive, mesic Andic Haploxerults

Typical Pedon

Lewisflat loam, on a northeast-facing slope of 3 percent, under a cover of mixed conifers, at an elevation of 3,675 feet (1,120 m). When described on 11/1/1995, the soil was slightly moist throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 3 inches (0 to 8 cm); litter of needles, cones, and twigs.

A1—3 to 5 inches (8 to 13 cm); brown (10YR 4/3) loam, brown (7.5YR 4/3) moist; 14 percent clay; moderate medium subangular blocky structure; slightly hard, friable, nonsticky, nonplastic; many very fine roots; few very fine tubular pores; noneffervescent; 10 percent rounded gravel; strongly acid, pH 5.2 by pH meter 1:1 water; NaF pH 10.8; abrupt smooth boundary.

A2—5 to 9 inches (13 to 23 cm); strong brown (7.5YR 5/6) loam, brown (7.5YR 4/4) moist; 17 percent clay; moderate medium subangular blocky structure; slightly hard, firm, nonsticky, slightly plastic; common very fine and fine roots; common very fine tubular pores; noneffervescent; 5 percent rounded gravel; strongly acid, pH 5.5 by pH meter 1:1 water; NaF pH 10.2; abrupt smooth boundary.

Bt1—9 to 18 inches (23 to 46 cm); strong brown (7.5YR 5/6) loam, strong brown (7.5YR 5/6) moist; 25 percent clay; moderate medium subangular blocky structure; slightly hard, friable, nonsticky, moderately plastic; common very fine and fine roots; common very fine tubular pores; few clay films on faces of peds and in pores; noneffervescent; 5 percent rounded gravel; strongly acid, pH 5.4 by pH meter 1:1 water; NaF pH 9.7; clear smooth boundary.

2Bt2—18 to 33 inches (46 to 84 cm); reddish yellow (7.5YR 6/6) loam, strong brown (7.5YR 5/6) moist; 24 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; common very fine and fine and few medium and coarse roots; common very fine tubular pores; common clay films on faces of peds and in pores; noneffervescent; 2 percent subrounded gravel; strongly acid, pH 5.3 by pH meter 1:1 water; NaF pH 9.4; clear smooth boundary.

2Bt3—33 to 49 inches (84 to 125 cm); reddish yellow (7.5YR 6/6) loam, strong brown (7.5YR 5/6) moist; 19 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; common fine and medium and few coarse roots; few very fine tubular pores; few clay films on faces of peds and in pores; noneffervescent; strongly acid, pH 5.1 by pH meter 1:1 water; NaF pH 9.5; clear smooth boundary.

2BCt1—49 to 65 inches (125 to 165 cm); reddish yellow (7.5YR 7/6) loam, strong brown (7.5YR 5/6) moist; 12 percent clay; moderate medium subangular blocky structure; slightly hard, friable, nonsticky, nonplastic; common fine and medium and few coarse roots; few very fine tubular pores; few clay films on faces of peds and in pores; noneffervescent; strongly acid, pH 5.1 by pH meter 1:1 water; gradual smooth boundary.

2BCt2—65 to 75 inches (165 to 190 cm); reddish yellow (7.5YR 7/6) loam, reddish yellow (7.5YR 6/6) moist; 12 percent clay; weak medium subangular blocky structure; slightly hard, friable, nonsticky, nonplastic; few fine and medium roots; few very fine tubular pores; few clay films in root channels and pores; very strongly acid, pH 5.0 by pH meter 1:1 water.

Type location: Butte County, California; about 1.1 miles north of Strawberry Valley, approximately 1,400 feet east and 2,000 feet south of the northwest corner of sec. 20, T. 20 N., R. 8 E.; 39 degrees, 34 minutes, 47.5 seconds north latitude and 121 degrees, 6 minutes, 37.5 seconds west longitude; NAD27; USGS Quad: Strawberry Valley, California.

Range in Characteristics

The depth to paralithic bedrock (quartz diorite) is more than 60 inches (152 cm). The mean annual soil temperature is 52 to 56 degrees F (11 to 13 degrees C). The soil moisture control section is dry in all parts from about June 1 to October 1 (about 90 to 110 days) The particle-size control section averages 18 to 27 percent clay and 0 to 20 percent rock fragments, mostly gravel. Mineralogy is mixed. The content of organic matter is 8 to 10 percent to a depth of 2 inches (5 cm), 1 to 2 percent from 2 to 15 inches (5 to 38 cm), and less than 0.6 percent from 15 to 72 inches (38 to 183 cm). By sum of cations, base saturation ranges from 9 to 32 percent in the argillic horizon. Acid oxalate extractable Al plus $\frac{1}{2}$ Fe is 1 to 2 to a depth of 18 inches (46 cm). Rock fragments on the surface range from 0 to 10 percent gravel. Some pedons have a 2Bw or 2C horizon below the argillic horizon.

The A horizon has dry color of 7.5YR 4/2, 5/4, 5/6, 6/4, or 6/6 or 10YR 4/3 or 6/3. Moist color is 7.5YR 3/2, 3/3, 3/4, 4/3, 4/4, or 4/6 or 10YR 5/4. Texture is dominantly loam, but in some pedons it is sandy loam or coarse sandy loam. The content of clay ranges from 5 to 18 percent. The content of gravel is 5 to 10 percent. NaF pH is 10.0 to 11.5. Reaction ranges from strongly acid to slightly acid.

The Bt horizon has dry color of 7.5YR 5/6, 6/4, 6/6, 7/4, or 7/6 or 5YR 5/6. Moist color is 7.5YR 4/4, 4/6, 5/4, 5/6, 5/8, or 6/8; 5YR 4/4, 5/6, or 5/8; or 10YR 5/4 or 5/6. Texture is loam, gravelly loam, sandy clay loam, or gravelly sandy clay loam. The content of clay ranges from 18 to 27 percent. The content of gravel is 0 to 20 percent. NaF pH is 9.7 to 10.0. Reaction is strongly acid or moderately acid.

The 2Bt horizon has dry color of 7.5YR 5/6, 6/4, 6/6, 7/4, or 7/6 or 5YR 5/6. Moist color is 7.5YR 4/4, 4/6, 5/4, 5/6, 5/8, or 6/8; 5YR 4/4, 5/6, or 5/8; or 10YR 5/4 or 5/6. Texture is loam, gravelly loam, sandy clay loam, or gravelly sandy clay loam. The content of clay ranges from 18 to 27 percent. The content of gravel is 0 to 20 percent. NaF pH is 9.4 to 9.0. Reaction is strongly acid or moderately acid.

The 2BCt horizon has dry color of 7.5YR 6/6 or 7/6. Moist color is 7.5YR 5/6, 6/6, 5/8, or 6/8 or 10YR 5/6, 6/6, or 7/6. Texture is loam, gravelly loam, sandy clay loam, sandy loam, gravelly sandy loam, or fine sandy loam. The content of clay ranges from 8 to 27 percent. The content of gravel is 0 to 20 percent. NaF pH is 9.0 to 9.5. Reaction ranges from very strongly acid to moderately acid.

The 2Bw horizon, where it occurs, has dry color of 7.5YR 6/6 or 7/6. Moist color is 7.5YR 5/6, 6/6, 5/8, or 6/8 or 10YR 5/6, 6/6, or 7/6. Texture is loam or sandy loam. The content of clay ranges from 8 to 18 percent. The content of gravel is 0 to 15 percent. NaF pH is 9.0 to 9.5. Reaction ranges from very strongly acid to moderately acid.

The 2C horizon, where it occurs, has dry color of 7.5YR 6/6 or 7/6. Moist color is 7.5YR 5/6, 6/6, 5/8, or 6/8 or 10YR 5/6, 6/6, or 7/6. Texture is loam or sandy loam. The content of clay ranges from 8 to 18 percent. The content of gravel is 0 to 15 percent. NaF pH is 9.0 to 9.5. Reaction ranges from very strongly acid to moderately acid.

Lithic Xerorthents

Lithic Xerorthents consist of very shallow, somewhat excessively drained soils that formed in residuum derived from quartz diorite. These soils are on ridgetops and side slopes on granitic Sierra Nevada mountains. Slopes range from 12 to 70 percent. The mean annual precipitation is about 55 inches (1,397 mm), and the mean annual air temperature is about 55 degrees F (13 degrees C).

Taxonomic class: Loamy, mixed, active, nonacid, mesic Lithic Xerorthents

Typical Pedon

Lithic Xerorthents gravelly sandy loam, on a southwest-facing slope of 42 percent, under a cover of canyon live oak, whiteleaf manzanita, California black oak, and scattered conifers, at an elevation of 2,690 feet (807 m). When described on 9/7/2000, the soil was slightly moist to a depth of 2 inches (5 cm) and dry from 2 to 8 inches (5 to 20 cm). (Colors are for dry soil unless otherwise noted.)

Oi—0 to 2 inches (0 to 5 cm); slightly decomposed plant material; abrupt smooth boundary.

A—2 to 4 inches (5 to 10 cm); very pale brown (10YR 7/3) gravelly sandy loam, brown (10YR 4/3) moist; 6 percent clay; single grain; loose, very friable, nonsticky, nonplastic; many very fine and fine roots; many very fine irregular pores; 20 percent subrounded quartz diorite gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.

Bw—4 to 8 inches (10 to 20 cm); light yellowish brown (10YR 6/4) sandy loam, dark yellowish brown (10YR 4/4) moist; 8 percent clay; single grain; loose, very friable, nonsticky, nonplastic; many fine and medium and many coarse roots; many very fine irregular pores; 10 percent subrounded quartz diorite gravel; strongly acid, pH 5.5 by Hellige-Truog; abrupt smooth boundary.

R—8 inches (20 cm); indurated quartz diorite bedrock.

Type location: Butte County, California; about 1.2 miles northeast of Berry Creek, approximately 2,700 feet east and 700 feet south of the northwest corner of sec. 26, T. 21 N., R. 5 E.; 39 degrees, 39 minutes, 11 seconds north latitude and 121 degrees, 23 minutes, 4 seconds west longitude; NAD83; USGS Quad: Berry Creek, California.

Range in Characteristics

The depth to lithic bedrock is 1 to 10 inches (3 to 25 cm). The mean annual soil temperature is 47 to 59 degrees F (8 to 15 degrees C). The particle-size control section averages 6 to 8 percent clay and 10 to 20 percent rock fragments, mostly fine gravel. Mineralogy is mixed. Rock fragments on the surface range from 15 to 50 percent gravel, 0 to 30 percent cobbles, 0 to 50 percent stones, and 0 to 50 percent boulders.

The A horizon has dry color of 10YR 6/2, 6/3, or 7/3. Moist color is 10YR 4/2 or 4/3. Texture is gravelly sandy loam or sandy loam. The content of clay ranges from 6 to 8 percent. The content of gravel is 5 to 35 percent. The content of organic matter is 1 to 5 percent. By ammonium acetate, base saturation ranges from 60 to 70 percent. Reaction is strongly acid or moderately acid.

The Bw horizon has dry color of 10YR 6/6, 6/4, 7/3, or 8/2. Moist color is 10YR 4/3, 4/4, 5/3, or 6/4. Texture is sandy loam, coarse sandy loam, or gravelly sandy loam. The content of clay ranges from 6 to 10 percent. The content of gravel is 10 to 35 percent. The content of organic matter is 0.1 to 1.5 percent. By ammonium acetate, base saturation ranges from 50 to 60 percent. Reaction is strongly acid or moderately acid.

Liveoak Series

The Liveoak series consists of very deep, moderately well drained soils that formed in alluvium derived from mixed rock sources. These soils are in distributary channels on stream terraces. Slopes range from 0 to 2 percent. The mean annual precipitation is about 20 inches (508 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Typic Haploxerolls

Typical Pedon

Liveoak sandy loam, on a slope of 0 to 2 percent, under a cover of prune trees, at an elevation of 95 feet (29 m). (Colors are for dry soil unless otherwise noted.)

- Ap1—0 to 4 inches (0 to 10 cm); yellowish brown (10YR 5/4) sandy loam, dark brown (10YR 3/3) moist; 16 percent clay; moderate thick platy structure parting to moderate coarse subangular blocky; soft, very friable, slightly sticky, nonplastic; common very fine roots; many very fine irregular and few very fine vesicular pores; 2 percent gravel; neutral, pH 7.2 by Hellige-Truog; clear smooth boundary.
- Ap2—4 to 17 inches (10 to 43 cm); yellowish brown (10YR 5/4) sandy loam, dark brown (10YR 3/3) moist; 18 percent clay; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky, nonplastic; common very fine and few fine and medium roots; common very fine irregular, many very fine tubular, and few very fine vesicular pores; 2 percent gravel; neutral, pH 6.8 by Hellige-Truog; clear smooth boundary.
- Bw1—17 to 37 inches (43 to 94 cm); yellowish brown (10YR 5/4) sandy loam, dark yellowish brown (10YR 3/4) moist; 18 percent clay; moderate medium subangular blocky structure; soft, very friable, slightly sticky, nonplastic; few very fine and fine roots; many very fine irregular, common very fine and fine tubular, and few very fine and fine vesicular pores; faint patchy clay bridges between sand grains; 2 percent gravel; neutral, pH 6.9 by Hellige-Truog; gradual smooth boundary.
- Bw2—37 to 48 inches (94 to 122 cm); yellowish brown (10YR 5/4) sandy loam, dark yellowish brown (10YR 3/4) moist; 20 percent clay; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky, nonplastic; few very fine and fine roots; many very fine irregular, common very fine and fine tubular, and few very fine and fine vesicular pores; 2 percent gravel; neutral, pH 6.9 by Hellige-Truog; gradual smooth boundary.
- C1—48 to 61 inches (122 to 155 cm); yellowish brown (10YR 5/4) sandy loam, dark yellowish brown (10YR 3/4) moist; 12 percent clay; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky, nonplastic; few very fine roots; many very fine irregular, common very fine and fine tubular, and few very fine and fine vesicular pores; common fine faint dark grayish brown (10YR 4/2) irregularly shaped iron depletions on surfaces of root channels; 8 percent gravel; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.
- C2—61 to 71 inches (155 to 180 cm); yellowish brown (10YR 5/4) loamy sand, dark yellowish brown (10YR 3/4) moist; 6 percent clay; weak fine and medium subangular blocky structure; loose, nonsticky, nonplastic; few very fine roots; many very fine irregular pores; common fine faint dark grayish brown (10YR 4/2) irregularly shaped iron depletions on surfaces of root channels; 10 percent gravel; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.
- C3—71 to 75 inches (180 to 190 cm); yellowish brown (10YR 5/4) gravelly loamy sand, dark brown (10YR 3/3) moist; 5 percent clay; single grain; loose, nonsticky, nonplastic; many very fine irregular pores; 18 percent gravel; neutral, pH 6.8 by Hellige-Truog.

Type location: Butte County, California; about 0.25 mile east of Gridley, approximately 1,550 feet north and 2,960 feet east of the southeast corner of sec. 36, T. 18 N., R. 2 E.; in an unsectionized area in the Boga Land Grant; 39 degrees, 22 minutes, 03 seconds north latitude and 121 degrees, 40 minutes, 36 seconds west longitude; NAD27; USGS Quad: Gridley, California.

Range in Characteristics

The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry from June 15 to October 31 (about 138 days). The particle-size control section averages 18 to 25 percent clay. Mineralogy is mixed. The

content of organic matter is 2 to 3 percent to a depth of 17 inches (43 cm), 1 to 2 percent from 17 to 61 inches (43 to 155 cm), and 0.5 to 1 percent from 61 to 80 inches (155 to 203 cm). Redoximorphic features, such as iron depletions that are along root channels and have color of 10YR 4/2, occur below a depth of 40 inches (102 cm) in some pedons. A fluctuating water table can occur at a depth of 11 to 65 inches (28 to 165 cm) from December through April.

The Ap horizon has dry color of 10YR 5/4, 5/3, 4/4, or 3/4. Moist color is 10YR 3/3 or 3/2. Texture is sandy loam or sandy clay loam. The content of clay ranges from 16 to 25 percent. The content of rock fragments, mostly gravel, ranges from 0 to 5 percent. Reaction is slightly acid or neutral.

The Bw horizon has dry color of 10YR 5/4, 5/3, 4/4, or 3/4. Moist color is 10YR 3/3 or 3/2. Texture is sandy loam or sandy clay loam. The content of clay ranges from 18 to 25 percent. The content of rock fragments, mostly gravel, ranges from 0 to 10 percent. Reaction is neutral.

The C horizon has dry color of 10YR 5/4 or 6/4. Moist color is 10YR 4/4, 4/3, or 3/3. Texture is gravelly loamy sand, gravelly sandy loam, loamy sand, or sandy loam. The content of clay ranges from 5 to 19 percent. The content of rock fragments, mostly gravel, ranges from 0 to 20 percent. Reaction is neutral.

Liveoak Taxadjunct

The Liveoak taxadjunct consists of deep, moderately well drained soils that formed in alluvium derived from mixed rock sources. These soils are on mounds on remnant terraces. Slopes range from 0 to 2 percent. The mean annual precipitation is about 16 inches (406 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Typic Calcixerepts

Typical Pedon

Liveoak taxadjunct loam, under a cover of annual grasses and tules, at an elevation of 55 feet (17 m). (Colors are for dry soil unless otherwise noted.)

Ak—0 to 6 inches (0 to 15 cm); light brownish gray (10YR 6/2) loam, very dark grayish brown (10YR 3/2) moist; moderate fine subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; many medium and fine roots; many very fine and fine tubular pores; disseminated lime; 11 percent calcium carbonate equivalent; strongly effervescent; moderately alkaline; clear smooth boundary.

Bk1—6 to 16 inches (15 to 41 cm); pale brown (10YR 6/3) loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; soft, friable, slightly sticky, slightly plastic; many very fine and fine roots; many very fine and fine tubular pores; disseminated lime; violently effervescent; 21 percent calcium carbonate equivalent; moderately alkaline; clear wavy boundary.

Bk2—16 to 30 inches (41 to 76 cm); pale brown (10YR 6/3) loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; soft, friable, slightly sticky, slightly plastic; common very fine roots; disseminated lime; 26 percent calcium carbonate equivalent; many coarse and very coarse rounded siliceous and calcareous concretions; violently effervescent; moderately alkaline; clear irregular boundary.

Bkq—30 to 39 inches (76 to 99 cm); pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; massive; soft, friable, slightly sticky, slightly plastic; common very fine roots; common very fine and fine tubular pores; disseminated lime; 29 percent calcium carbonate equivalent; many medium rounded siliceous and calcareous concretions; violently effervescent; moderately alkaline; clear irregular boundary.

B'k3—39 to 54 inches (99 to 137 cm); pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; massive; soft, friable, slightly sticky, slightly plastic; few very fine roots; many very fine tubular pores; disseminated lime and many fine seams of lime; 27 percent calcium carbonate equivalent; violently effervescent; moderately alkaline; abrupt smooth boundary.

Bkqm—54 to 63 inches (137 to 160 cm); brown (10YR 5/3), indurated duripan, dark brown (10YR 3/3) moist; massive; extremely hard; continuous and indurated with silica and lime; violently effervescent; disseminated lime; abrupt smooth boundary.

2C—63 inches (160 cm); pale brown (10YR 6/3) very fine sandy loam, brown (10YR 4/3) moist; loose, nonsticky, nonplastic; neutral.

Type location: Sutter County, California; about 4.7 miles west of Pennington, approximately 2,800 feet east and 320 feet south of the northwest corner of sec. 32, T. 17 N., R. 1 E.; 39 degrees, 17 minutes, 18 seconds north latitude and 121 degrees, 52 minutes, 52 seconds west longitude; NAD27; USGS Quad: Sanborn Slough, California.

Range in Characteristics

Depth to the duripan ranges from 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 62 to 65 degrees F (17 to 18 degrees C). The particle-size control section ranges from 18 to 25 percent clay. Mineralogy is mixed. The soils are calcareous throughout. The content of organic matter is less than 1 percent throughout the profile. A fluctuating water table can occur at a depth of 48 to 60 inches (122 to 152 cm) from December through April.

The Ak horizon has dry color of 10YR 6/2, 7/2, or 6/3. Moist color is 10YR 3/2, 4/2, 3/3, or 4/3. Texture is loam. The content of clay ranges from 18 to 25 percent. Reaction is moderately alkaline.

The Bk horizon has dry color of 10YR 5/3, 6/2, 6/3, 6/4, or 7/3. Moist color is 10YR 3/2, 3/3, or 4/3. Texture is loam. The content of clay ranges from 18 to 25 percent. Reaction is moderately alkaline.

The Liveoak taxadjunct is a taxadjunct because it has a duripan between depths of 40 and 60 inches. This difference does not significantly affect the use, management, or interpretations of the soils.

Llanoseco Series

The Llanoseco series consists of very deep, somewhat poorly drained soils that formed in alluvium derived from mixed rock sources. These soils are in flood basins. Slopes range from 0 to 2 percent. The mean annual precipitation is about 18 (457 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Fine, smectitic, thermic Chromic Haploxererts

Typical Pedon

Llanoseco silty clay loam, on a slope of less than 1 percent, under a cover of annual grasses, at an elevation of 107 feet (33 m). When described on 5/10/1995, the soil was slightly moist below a depth of 18 inches (46 cm). (Colors are for dry soil unless otherwise noted.)

Ap—0 to 8 inches (0 to 20 cm); pale brown (10YR 6/3) silty clay loam, dark grayish brown (10YR 4/2) moist; 33 percent clay; moderate fine subangular blocky structure; soft, friable, slightly sticky, moderately plastic; many very fine and few fine roots; common very fine tubular pores; moderately acid, pH 6.0 by pH meter 1:1 water; abrupt smooth boundary.

- 2A—8 to 18 inches (20 to 46 cm); grayish brown (10YR 5/2) silty clay loam, very dark grayish brown (10YR 3/2) moist; 38 percent clay; moderate medium prismatic structure parting to moderate fine angular blocky; slightly hard, friable, moderately sticky, moderately plastic; few fine roots; common very fine tubular pores; neutral, pH 6.6 by pH meter 1:1 water; clear smooth boundary.
- 3Bss1—18 to 28 inches (46 to 71 cm); brown (10YR 5/3) silty clay, dark grayish brown (10YR 4/2) moist; 42 percent clay; moderate medium prismatic structure parting to moderate fine angular blocky; slightly hard, friable, moderately sticky, very plastic; very few very fine roots; common very fine tubular pores; common slickensides; slightly alkaline, pH 7.4 by pH meter 1:1 water; gradual smooth boundary.
- 3Bss2—28 to 41 inches (71 to 104 cm); brown (10YR 5/3) silty clay, dark grayish brown (10YR 4/2) moist; 42 percent clay; moderate medium prismatic structure parting to moderate fine angular blocky; slightly hard, friable, moderately sticky, very plastic; very few very fine roots; common very fine tubular pores; common slickensides; slightly alkaline, pH 7.7 by pH meter 1:1 water; gradual smooth boundary.
- 3Bss3—41 to 57 inches (104 to 145 cm); brown (10YR 5/3) silty clay, dark grayish brown (10YR 4/2) moist; 43 percent clay; moderate medium prismatic structure parting to moderate fine angular blocky; very hard, firm, moderately sticky, very plastic; very few very fine roots; few very fine tubular pores; common very fine and fine gray (10YR 5/1 moist) irregular iron depletions lining pores; common slickensides; slightly alkaline, pH 7.8 by pH meter 1:1 water; clear smooth boundary.
- 3Bss4—57 to 71 inches (145 to 180 cm); brown (10YR 5/3) silty clay, dark grayish brown (10YR 4/2) moist; 43 percent clay; moderate medium angular blocky structure; very hard, firm, moderately sticky, very plastic; very few very fine roots; common very fine tubular pores; common slickensides; moderately alkaline, pH 8.2 by pH meter 1:1 water; clear smooth boundary.
- 3Bk1—71 to 85 inches (180 to 216 cm); pale brown (10YR 6/3) silty clay, brown (10YR 4/3) moist; 43 percent clay; moderate fine angular blocky structure; hard, friable, moderately sticky, very plastic; common very fine tubular pores; 2 percent calcium carbonate; strongly alkaline, pH 8.5 by pH meter 1:1 water; clear smooth boundary.
- 3Bk2—85 to 91 inches (216 to 231 cm); yellowish brown (10YR 5/4) silty clay, dark yellowish brown (10YR 4/4) moist; moderate fine angular blocky structure; hard, very friable, moderately sticky, very plastic; common very fine tubular pores; strongly effervescent; 2 percent calcium carbonate; strongly alkaline, pH 8.5 by pH meter 1:1 water; abrupt wavy boundary.
- 4Bkqm—91 to 93 inches (231 to 236 cm); pink (7.5YR 8/4), indurated duripan, reddish yellow (7.5YR 6/6) moist; massive parting to platy; silica- and lime-cemented capping $\frac{1}{8}$ inch thick; strongly effervescent; 49 percent calcium carbonate.

Type location: Butte County, California; about 5.5 miles southwest of Dayton, approximately 20,370 feet north and 700 feet east of the northwest corner of sec. 2, T. 19 N., R. 1 W.; in an unsectioned area in the Llano Seco Land Grant; 39 degrees, 35 minutes, 32 seconds north latitude and 121 degrees, 56 minutes, 43 seconds west longitude; NAD27; USGS Quad: Llano Seco, California.

Range in Characteristics

Depth to the duripan ranges from 60 to 120 inches (152 to 305 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry from May to October 15 (about 165 days). The particle-size control section ranges from 40 to 50 percent clay. Mineralogy is smectitic. The content of organic matter is 1 to 3 percent to a depth of 28 inches (71 cm) and 0.1 to 0.5

percent from 28 to 91 inches (71 to 231 cm). By ammonium acetate, base saturation ranges from 93 to 100 percent throughout the profile. Reversible, surface-initiated cracks $\frac{1}{2}$ to 1 inch (12.7 to 25.4 mm) wide extend to a depth of 40 to 60 inches (102 to 152 cm) from May to October (165 days) when the soils are not irrigated. Few or common slickensides occur in the 3Bss horizons, from 18 to 71 inches (46 to 180 cm). A fluctuating water table can occur between the top of the duripan and 54 inches (137 cm) below the surface of the soil from December through March. Some pedons have redoximorphic features, such as manganese or oxidized iron masses, below a depth of 40 inches (102 cm).

The Ap horizon has dry color of 10YR 6/3, 6/2, or 5/2. Moist color is 10YR 4/2 or 4/3. The content of clay ranges from 27 to 35 percent. Reaction is moderately acid or slightly acid.

The 2A horizon has dry color of 10YR 6/2, 5/2, or 5/3. Moist color is 10YR 4/2, 3/2, or 4/3. The content of clay ranges from 35 to 40 percent. Reaction is slightly acid or neutral.

The 3Bss horizon has dry color of 10YR 6/3 or 5/3. Moist color is 4/3, 4/2, or 3/3. Texture is silty clay or clay. The content of clay ranges from 40 to 60 percent. Reaction ranges from neutral to strongly alkaline.

The 3Bk horizon has dry color of 10YR 5/4 or 6/3. Moist color is 10YR 4/3 or 4/4. The content of clay ranges from 40 to 50 percent. Reaction is moderately alkaline or strongly alkaline. This horizon is noneffervescent to strongly effervescent.

Loafercreek Series

The Loafercreek series consists of moderately deep, well drained soils that formed in colluvium and residuum derived from metavolcanic rocks, mainly greenschist. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada foothills. Slopes range from 1 to 90 percent. The mean annual precipitation is about 30 inches (762 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Ultic Haploxeralfs

Typical Pedon

Loafercreek gravelly loam, on a northwest-facing slope of 18 percent, under a cover of interior live oak, blue oak, foothill pine, whiteleaf manzanita, toyon, buckbrush, Pacific poison oak, honeysuckle, squirreltail, hedgehog dogtail, and rattlesnake brome, at an elevation of 1,197 feet (365 m). When described on 8/4/1999, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 0.5 inch (0 to 1 cm); leaves, needles, and duff.

A—0.5 inch to 2 inches (1 to 5 cm); reddish brown (5YR 5/4) gravelly loam, reddish brown (5YR 4/3) moist; 17 percent clay; moderate fine subangular blocky structure parting to moderate fine granular; hard, friable, nonsticky, slightly plastic; common very fine roots; many very fine irregular pores; 20 percent subangular metavolcanic gravel; moderately acid, pH 6.1 by Hellige-Truog; abrupt wavy boundary.

BAt—2 to 6 inches (5 to 15 cm); reddish brown (5YR 5/4) gravelly loam, reddish brown (5YR 4/3) moist; 17 percent clay; moderate medium subangular blocky structure; hard, friable, nonsticky, slightly plastic; few fine and common very fine roots; common very fine tubular pores; 20 percent discontinuous faint clay films on faces of peds; 25 percent subangular metavolcanic gravel; slightly acid, pH 6.2 by Hellige-Truog; clear smooth boundary.

Bt1—6 to 12 inches (15 to 30 cm); yellowish red (5YR 5/6) loam, dark reddish brown (5YR 3/4) moist; 20 percent clay; moderate medium subangular blocky structure;

- hard, friable, nonsticky, slightly plastic; common fine and few medium and coarse roots; common very fine tubular pores; 30 percent discontinuous distinct clay films on faces of peds and on surfaces along pores; 10 percent subangular metavolcanic gravel; slightly acid, pH 6.2 by Hellige-Truog; clear wavy boundary.
- Bt2—12 to 23 inches (30 to 58 cm); yellowish red (5YR 5/6) gravelly loam, yellowish red (5YR 4/6) moist; 24 percent clay; moderate fine subangular blocky structure; hard, friable, slightly sticky, moderately plastic; few fine to coarse roots; many very fine tubular pores; 30 percent discontinuous distinct clay films on faces of peds and on surfaces along pores; 5 percent subangular metavolcanic cobbles and 20 percent subangular metavolcanic gravel; slightly acid, pH 6.3 by Hellige-Truog; gradual wavy boundary.
- Bt3—23 to 31 inches (58 to 79 cm); yellowish red (5YR 5/6) gravelly silt loam, yellowish red (5YR 4/6) moist; 22 percent clay; moderate fine subangular blocky structure; hard, firm, slightly sticky, moderately plastic; common fine and few medium and coarse roots; common very fine tubular pores; 30 percent discontinuous distinct clay films on faces of peds and on surfaces along pores; 20 percent subangular metavolcanic gravel; slightly acid, pH 6.2 by Hellige-Truog; abrupt wavy boundary.
- Crt—31 to 42 inches (79 to 107 cm); weathered, moderately cemented greenschist; few fine roots; 60 percent continuous prominent clay films on rock fragments; abrupt wavy boundary.
- R—42 inches (107 cm); indurated greenschist.

Type location: Butte County, California; about 4.5 miles northeast of Wyandotte, approximately 2,450 feet south and 1,400 feet east of the northwest corner of sec. 8, T. 19 N., R. 5 E.; 39 degrees, 31 minutes, 8.28 seconds north latitude and 121 degrees, 26 minutes, 28.49 seconds west longitude; NAD83; USGS Quad: Oroville Dam, California.

Range in Characteristics

The depth to paralithic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 59 to 65 degrees F (15 to 18 degrees C). The soil moisture control section is dry in all parts from about June 1 to October 15 (about 150 days). The particle-size control section averages 24 to 33 percent clay and 5 to 33 percent rock fragments, mostly gravel. Mineralogy is mixed. Rock fragments on the surface range from 0 to 25 percent gravel, 0 to 10 percent cobbles, and 0 to 10 percent stones. The content of silt is 40 to 50 percent in the surface layer and subsoil.

The A horizon has dry color of 7.5YR 4/6, 5/4, or 5/6 or 5YR 4/4, 4/6, or 5/4. Moist color is 7.5YR 3/4 or 4/4 or 5YR 3/4 or 4/3. Texture is loam or gravelly loam with a high content of silt, or it is silt loam. The content of clay ranges from 14 to 22 percent. The content of gravel is 3 to 20 percent. By sum of cations, base saturation ranges from 60 to 70 percent. The content of organic matter is 5 to 10 percent. Reaction ranges from strongly acid to neutral.

The BAt horizon has dry color of 7.5YR 4/6 or 5/6 or 5YR 4/6, 5/4, 5/6, or 5/8. Moist color is 7.5YR 3/4 or 4/4; 5YR 4/3, 4/4, or 4/6; or 2.5YR 4/4. Texture is loam or gravelly loam with a high content of silt, or it is silt loam. The content of clay ranges from 15 to 24 percent. The horizon has 3 to 30 percent gravel and 0 to 5 percent cobbles. By sum of cations, base saturation ranges from 65 to 73 percent. The content of organic matter is 1 to 4 percent. Reaction ranges from strongly acid to neutral.

The upper part of the Bt horizon has dry color of 7.5YR 5/6, 5YR 4/6 or 5/6, or 2.5YR 4/6. Moist color is 5YR 3/4, 4/4, or 4/6 or 2.5YR 3/6. Texture is loam, gravelly loam, clay loam, or gravelly clay loam with a high content of silt. The content of clay ranges from 18 to 30 percent. The content of gravel is 5 to 25 percent, and the content of cobbles is 0 to 5 percent. By sum of cations, base saturation ranges from

65 to 73 percent. The content of organic matter is 0.5 to 2.0 percent. Reaction ranges from moderately acid to neutral.

The lower part of the Bt horizon has dry color of 7.5YR 4/6 or 5/6 or 5YR 4/6 or 5/6. Moist color is 7.5YR 4/4 or 4/6; 5YR 4/3, 4/4, or 4/6; or 2.5YR 3/6 or 4/6. Texture is loam, gravelly loam, clay loam, or gravelly clay loam. The content of clay ranges from 18 to 30 percent. The content of gravel is 5 to 30 percent, and the content of cobbles is 0 to 10 percent. By sum of cations, base saturation ranges from 74 to 85 percent. The content of organic matter is 0.5 to 1.5 percent. Reaction ranges from moderately acid to neutral.

Loemstone Series

The Loemstone series consists of deep, moderately well drained soils that formed in alluvium derived from mixed rock sources. These soils are on terraces along the Feather River. Slopes range from 0 to 2 percent. The mean annual precipitation is about 20 inches (508 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Typic Haploxeralfs

Typical Pedon

Loemstone loam, on a slope of less than 1 percent, in a leveled orchard, at an elevation of 87 feet (27 m). When described on 5/9/1995, the soil was moist throughout. Water was seeping at a depth of 48 inches (122 cm). (Colors are for dry soil unless otherwise noted.)

- Ap1—0 to 2 inches (0 to 5 cm); brown (10YR 5/3) loam, brown (10YR 4/3) moist; 23 percent clay; strong thin and medium platy structure; hard, firm, slightly sticky, slightly plastic; many very fine and few fine roots; few very fine and fine tubular pores; common fine strong brown (7.5YR 4/6 moist) threadlike oxidized iron masses; noneffervescent; slightly acid, pH 6.1 by pH meter 1:1 water; abrupt smooth boundary.
- Ap2—2 to 4 inches (5 to 10 cm); brown (10YR 5/3) silt loam, brown (10YR 4/3) moist; 23 percent clay; strong medium and thick platy structure; hard, firm, slightly sticky, slightly plastic; many very fine and few fine roots; common very fine and fine tubular pores; common fine gray (10YR 5/1 moist) iron depletions; noneffervescent; slightly acid, pH 6.1 by pH meter 1:1 water; abrupt smooth boundary.
- Ap3—4 to 10 inches (10 to 25 cm); yellowish brown (10YR 5/4) silt loam, brown (10YR 4/3) moist; 23 percent clay; moderate medium subangular blocky structure; hard, firm, slightly sticky, slightly plastic; common very fine to medium roots; common very fine and fine tubular pores; common fine gray (10YR 5/1 moist) iron depletions; noneffervescent; slightly acid, pH 6.1 by pH meter 1:1 water; clear smooth boundary.
- Bt1—10 to 18 inches (25 to 46 cm); yellowish brown (10YR 5/4) clay loam, brown (7.5YR 4/3) moist; 28 percent clay; moderate medium subangular blocky structure; hard, firm, moderately sticky, slightly plastic; common very fine to medium roots; many very fine and fine and common medium tubular pores; few distinct discontinuous clay films on faces of peds and in pores; common fine gray (10YR 5/1 moist) iron depletions; noneffervescent; slightly acid, pH 6.1 by pH meter 1:1 water; gradual smooth boundary.
- Bt2—18 to 23 inches (46 to 58 cm); yellowish brown (10YR 5/4) silty clay loam, brown (7.5YR 4/3) moist; 30 percent clay; moderate medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; common very fine to medium and few coarse roots; many very fine and fine and few medium tubular

pores; few distinct discontinuous clay films on faces of peds and in pores; noneffervescent; slightly acid, pH 6.3 by meter 1:1 water; gradual smooth boundary.

Bt3—23 to 32 inches (58 to 81 cm); yellowish brown (10YR 5/4) silt loam, brown (7.5YR 4/3) moist; 27 percent clay; moderate fine and medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; few very fine and fine, common medium, and few coarse roots; many very fine and fine and common medium tubular pores; many distinct continuous clay films on faces of peds and in pores; noneffervescent; neutral, pH 6.6 by pH meter 1:1 water; gradual smooth boundary.

Bt4—32 to 40 inches (81 to 102 cm); yellowish brown (10YR 5/4) silt loam, brown (10YR 4/3) moist; 26 percent clay; moderate fine and medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; few very fine to medium roots; many very fine to medium tubular pores; many distinct continuous clay films on faces of peds and in pores; many fine irregular black (N 2/0) manganese masses; noneffervescent; neutral, pH 6.8 by meter 1:1 water; gradual smooth boundary.

Bt5—40 to 48 inches (102 to 122 cm); light yellowish brown (10YR 6/4) silt loam, brown (10YR 4/3) moist; 24 percent clay; moderate medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; few very fine to medium roots; many very fine to medium tubular pores; many distinct continuous clay films on faces of peds and in pores; common fine irregular gray (10YR 6/1 moist) iron depletions; noneffervescent; neutral, pH 6.9 by pH meter 1:1 water; abrupt smooth boundary.

2Cd—48 to 58 inches (122 to 147 cm); pale yellow (2.5Y 7/3) silt, light olive brown (2.5Y 5/3) moist; 7 percent clay; noncemented; massive; hard, very firm, nonsticky, slightly plastic; common very fine and fine tubular pores; common fine strong brown (7.5YR 4/6 moist) oxidized iron masses; noneffervescent; slightly alkaline, pH 7.2 by pH meter 1:1 water.

Type location: Butte County, California; about 2 miles southeast of Gridley, approximately 475 feet east and 220 feet south of the intersection of Evans Reimer Road and Cowee Avenue; in an unsectionized area in the Boga Land Grant; 39 degrees, 20 minutes, 2 seconds north latitude and 121 degrees, 40 minutes, 0 seconds west longitude; NAD27; USGS Quad: Gridley, California.

Range in Characteristics

The depth to densic material is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry from May to October (140 to 160 days). The particle-size control section averages 25 to 35 percent clay. Mineralogy is mixed. The content of organic matter is 1 to 3 percent to a depth of 10 inches (25 cm) and 0.2 to 1 percent from 10 to 48 inches (25 to 122 cm). A fluctuating water table can occur between the top of the densic material and 20 inches (51 cm) below the surface of the soil from December through May.

The Ap horizon has dry color of 10YR 5/3, 5/4, or 6/3. Moist color is 10YR 4/3 or 4/2. The content of clay ranges from 18 to 27 percent. Texture is loam or silt loam. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 10YR 5/3, 5/4, 5/6, 6/4, or 6/6. Moist color is 10YR 4/2, 4/3, 4/4, 5/3, or 5/4 or 7.5YR 4/3. Texture is loam, silt loam, clay loam, or silty clay loam. The content of clay ranges from 20 to 40 percent and averages 25 to 35 percent. Redoximorphic features, such as iron-manganese masses with moist color of N 2/0 and oxidized iron masses with moist color of 10YR 4/6, 7.5YR 4/4, 4/6, or 5/6, or 5YR 4/6 or 5/6, occur below a depth of 30 inches (76 cm). Reaction ranges from slightly acid to slightly alkaline.

The 2Cd horizon has dry color of 2.5Y 7/4, 7/3, or 6/4 or 10YR 4/4 or 6/4. Moist color is 2.5Y 4/4, 5/3, or 5/4 or 10YR 4/4. Texture is loam, silt loam, silt, very fine sandy loam, or fine sandy loam. The content of clay ranges from 5 to 20 percent. Redoximorphic features, such as iron-manganese masses with moist color of N 2/0 and oxidized iron masses with moist color of 10YR 4/6, 7.5YR 4/4, 4/6, or 5/6, or 5YR 4/6 or 5/6, occur in pores and on the faces of fragments. Rupture resistance ranges from slightly hard to very hard and varies within the horizon at any given point. The horizon is noncemented. The densic material generally has many very fine and fine tubular pores that appear to be remnant root channels. Reaction ranges from slightly acid to moderately alkaline.

Lofgren Series

The Lofgren series consists of deep, poorly drained soils that formed in alluvium derived from mixed rock sources. These soils are in flood basins. Slopes are 0 to 1 percent. The mean annual precipitation is about 19 inches (483 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Very-fine, smectitic, thermic Xeric Epiaquerts

Typical Pedon

Lofgren clay, on a slope of less than 1 percent, under a cover of rice, at an elevation of 83 feet (25 m). When described 5/2/1995, the soil was moist throughout. The water table was at a depth of 43 inches (109 cm). (Colors are for dry soil unless otherwise noted).

Ap—0 to 5 inches (0 to 13 cm); dark gray (10YR 4/1) clay, very dark gray (10YR 3/1) moist; 56 percent clay; weak medium subangular blocky structure parting to strong fine granular; very hard, very firm, very sticky, very plastic; many fine roots; common fine irregular pores; many fine brown (7.5YR 4/4) oxidized iron masses; noneffervescent; strongly acid, pH 5.1 by pH meter 1:1 water; abrupt smooth boundary.

Bssg1—5 to 12 inches (13 to 31 cm); dark gray (10YR 4/1) clay, 50 percent very dark gray (10YR 3/1) and 50 percent dark gray (N 4/0) moist; 65 percent clay; weak medium angular blocky structure; extremely hard, very firm, very sticky, very plastic; few very fine and fine roots; few very fine tubular pores; common slickensides; common fine dark brown (7.5YR 3/3) oxidized iron masses and common fine gray (10YR 5/1) iron depletions; noneffervescent; neutral, pH 6.7 by pH meter 1:1 water; clear smooth boundary.

Bssg2—12 to 29 inches (31 to 74 cm); dark gray (10YR 4/1) clay, dark gray (10YR 4/1) moist; 66 percent clay; moderate coarse prismatic structure; extremely hard, extremely firm, very sticky, very plastic; few very fine roots; few very fine tubular pores; common slickensides; common fine gray (10YR 5/1) iron depletions; noneffervescent; slightly alkaline, pH 7.5 by pH meter 1:1 water; clear smooth boundary.

Bkssg—29 to 38 inches (74 to 97 cm); grayish brown (10YR 5/2) clay, dark gray (10YR 4/1) moist; 65 percent clay; moderate fine angular blocky structure; extremely hard, firm, very sticky, very plastic; common very fine tubular pores; few slickensides; common fine carbonate threads and common fine gray (10YR 5/1) iron depletions; strongly effervescent; moderately alkaline, pH 8.1 by pH meter 1:1 water; abrupt smooth boundary.

Bkg—38 to 44 inches (97 to 112 cm); very pale brown (10YR 8/2) clay, dark gray (10YR 4/1) moist; 61 percent clay; moderate fine prismatic structure parting to weak fine angular blocky; extremely hard, firm, very sticky, very plastic; common very fine tubular pores; common fine carbonate threads and common fine gray

(10YR 5/1) iron depletions; strongly effervescent; moderately alkaline, pH 8.5 by pH meter 1:1 water; abrupt wavy boundary.

2Bkq—44 to 47 inches (112 to 119 cm); light gray (10YR 7/2) clay loam, dark grayish brown (10YR 4/2) moist; 29 percent clay; moderate medium angular blocky structure; very rigid, firm, moderately cemented, moderately sticky, moderately plastic; few very fine and fine tubular pores; common fine carbonate threads; strongly effervescent; strongly alkaline, pH 8.5 by pH meter 1:1 water; abrupt smooth boundary.

2Bkqm1—47 to 62 inches (119 to 158 cm); indurated duripan; light gray (10YR 7/2) sandy loam, brown (7.5YR 4/4) moist; 16 percent clay; massive; very rigid; nonsticky, nonplastic; few very fine and fine tubular pores; common fine carbonate threads; strongly effervescent; strongly alkaline, pH 8.7 by pH meter 1:1 water; alternating layers of cementation with lime and silica filaments; at a depth of 47 inches, indurated capping with lime and silica threads; a very thin layer of sand on top of the capping; abrupt smooth boundary.

2Bkqm2—62 to 82 inches (158 to 208 cm); strongly cemented duripan; pink (7.5YR 7/4) loam, brown (7.5YR 4/4) moist; 17 percent clay; massive; very rigid; nonsticky, slightly plastic; strongly effervescent; moderately alkaline, pH 8.4 by pH meter 1:1 water.

Type location: Butte County, California; about 4.2 miles southwest of Richvale, approximately 200 feet east and 1,000 feet north of the southwest corner of sec. 25, T. 19 N., R. 1 E.; 39 degrees, 28 minutes, 2 seconds north latitude and 121 degrees, 49 minutes, 4 seconds west longitude; NAD27; USGS Quad: West of Biggs, California.

Range in Characteristics

Depth to the duripan is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 62 to 66 degrees F (17 to 19 degrees C). The soil moisture control section is dry from July to October (120 to 125 days). The particle-size control section averages 60 to 70 percent clay. The soils are calcareous from a depth of 29 to 60 inches (74 to 152 cm). The content of calcium carbonate ranges from trace amounts to 11 percent. By ammonium acetate, base saturation ranges from 80 to 100 percent from a depth of 0 to 12 inches (0 to 31 cm) and is 100 percent from 12 to 82 inches (31 to 208 cm). Electrical conductivity is less than 1 mmho/cm throughout the profile. Reversible, surface-initiated cracks 1 to 2 inches (2.54 to 5 cm) wide extend to a depth of 30 to 35 inches (76 to 89 cm) from May 15 to October 15 (150 days) when the soils are not irrigated. Common slickensides are in the Bssg1, Bssg2, and Bsskg horizons, from 5 to 38 inches (13 to 97 cm). A fluctuating water table can occur between the top of the duripan and the surface of the soil from December through May. Redoximorphic features, such as manganese nodules, oxidized iron masses with color of 7.5YR 4/4 or N 2/0, and a reduced matrix with chroma of 1, occur in the horizons above the duripan. Some pedons do not have a 2Bkq horizon.

The Ap horizon has dry color of 10YR 3/1 or 4/1. Moist color is 10YR 2/1 or 3/1. The content of clay ranges from 60 to 70 percent. The content of organic matter is 1 to 3 percent. Reaction ranges from slightly acid to strongly acid because of applications of fertilizer. The content of exchangeable sodium is 1 to 2 percent.

The Bssg horizon has dry color of 10YR 3/1, 4/1, or 5/1. Moist color is 10YR 3/1 or 4/1 or N 4/0. The content of clay ranges from 60 to 70 percent. The content of organic matter is 0.5 to 1 percent. Reaction ranges from slightly alkaline to moderately alkaline. The content of exchangeable sodium is 1 to 2 percent.

The Bkssg horizon has dry color of 10YR 3/1, 4/1, or 5/2. Moist color is 10YR 3/1, 3/2, 4/1, or 4/2. The content of clay ranges from 60 to 70 percent. The content of organic matter is 0.5 to 1 percent. Reaction ranges from slightly alkaline to moderately alkaline. The content of exchangeable sodium is 2 to 3 percent.

The Bkg horizon has dry color of 10YR 5/1, 5/2, 6/2, 7/2, or 8/2. Moist color is 10YR 4/1 or 4/2. Texture is clay or silty clay. The content of clay ranges from 50 to 60 percent. The content of organic matter is 0.1 to 1 percent. Reaction is moderately alkaline or strongly alkaline. The content of exchangeable sodium is 2 to 3 percent.

2Bkq horizon has dry color of 10YR 5/2, 6/2, 7/2, or 8/2. Moist color is 10YR 4/2 or 5/2. Texture is clay loam or silty clay loam. The content of clay ranges from 27 to 40 percent. The content of organic matter is 0.1 to 1 percent. Reaction is moderately alkaline or strongly alkaline. The content of exchangeable sodium is 2 to 3 percent.

The 2Bkqm horizon has dry color of 10YR 5/2, 6/2, 7/2, or 7/3 or 7.5YR 7/4. Moist color is 10YR 4/2, 4/3, or 5/2 or 7.5YR 4/4. Rupture resistance ranges from indurated to strongly cemented. The horizon has alternating layers that are moderately cemented and weakly cemented with silica and calcium carbonate. The content of calcium carbonate ranges from 2 to 11 percent. The content of exchangeable sodium is 3 to 4 percent.

Logtrain Series

The Logtrain series consists of deep, well drained soils that formed in colluvium and residuum derived from metavolcanic and metasedimentary rocks. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada mountains. Slopes range from 3 to 110 percent. The mean annual precipitation is about 72 inches (1,829 mm), and the mean annual air temperature is about 53 degrees F (12 degrees C).

Taxonomic class: Loamy-skeletal, mixed, active, mesic Typic Haploxerults

Typical Pedon

Logtrain gravelly loam, on a southwest-facing slope of 80 percent, under a cover of incense cedar, Douglas-fir, ponderosa pine, canyon live oak, tanoak, and bigleaf maple, at an elevation of 2,720 feet (829 m). When described on 7/27/1999, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 3 cm); slightly decomposed plant material; abrupt smooth boundary.

A—1 to 3 inches (3 to 8 cm); pale yellow (2.5Y 7/3) gravelly loam, light olive brown (2.5Y 5/3) moist; 20 percent clay; weak fine and medium subangular blocky structure parting to moderate fine and medium granular; moderately hard, very friable, slightly sticky, slightly plastic; many very fine and fine roots; many very fine to medium irregular and tubular pores; 30 percent gravel; moderately acid, pH 6.0 by Hellige-Truog; clear smooth boundary.

Bt1—3 to 9 inches (8 to 23 cm); pale yellow (2.5Y 7/3) very gravelly loam, light olive brown (2.5Y 5/3) moist; 22 percent clay; moderate fine and medium subangular blocky structure; moderately hard, very friable, slightly sticky, slightly plastic; common very fine to coarse roots; many very fine to medium tubular pores; 60 percent continuous faint clay films; 10 percent cobbles and 25 percent gravel; moderately acid, pH 6.0 by Hellige-Truog; gradual smooth boundary.

Bt2—9 to 21 inches (23 to 53 cm); pale yellow (2.5Y 7/4) very gravelly loam, light olive brown (2.5Y 5/4) moist; 25 percent clay; moderate fine and medium subangular blocky structure; very hard, very friable, slightly sticky, slightly plastic; common very fine to medium and few coarse roots; many very fine to medium tubular pores; 80 percent continuous faint clay films; 5 percent cobbles and 30 percent gravel; strongly acid, pH 5.5 by Hellige-Truog; gradual smooth boundary.

Bt3—21 to 38 inches (53 to 97 cm); very pale brown (10YR 7/4) very cobbly loam, yellowish brown (10YR 5/4) moist; 26 percent clay; moderate fine and medium subangular blocky structure; moderately hard, very friable, slightly sticky, slightly plastic; many very fine to medium and few coarse roots; many very fine to

medium tubular pores; 80 percent continuous faint clay films; 15 percent gravel and 25 percent cobbles; very strongly acid, pH 5.0 by Hellige-Truog; gradual smooth boundary.

Bt4—38 to 54 inches (97 to 137 cm); very pale brown (10YR 7/3) extremely gravelly loam, light yellowish brown (10YR 6/4) moist; 23 percent clay; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; common very fine to medium roots; many very fine to medium tubular pores; 60 percent continuous faint clay films; 20 percent stones, 20 percent cobbles, and 30 percent gravel; very strongly acid, pH 5.0 by Hellige-Truog; gradual smooth boundary.

R—54 inches (137 cm); strongly cemented metavolcanic bedrock; very strongly acid, pH 5.0 by Hellige-Truog.

Type location: Butte County, California; about 0.87 mile northeast of Robley Point, approximately 125 feet south and 1,950 feet west of the northeast corner of sec. 10, T. 23 N., R. 4 E.; 39 degrees, 52 minutes, 21 seconds north latitude and 121 degrees, 30 minutes, 27 seconds west longitude; NAD83; USGS Quad: Paradise East, California.

Range in Characteristics

The depth to lithic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 47 to 57 degrees F (8 to 14 degrees C). The particle-size control section averages 15 to 27 percent clay and 35 to 85 percent rock fragments, mostly gravel. Mineralogy is mixed. Rock fragments on the surface range from 0 to 50 percent gravel, 0 to 30 percent cobbles, 0 to 20 percent stones, and 0 to 10 percent boulders.

The A horizon has dry color of 7.5YR 6/3 or 6/4; 10YR 6/2, 6/3, 6/4, or 7/4; or 2.5Y 6/3 or 7/3. Moist color is 7.5YR 3/2, 4/2, or 4/3; 10YR 3/2, 4/2, or 4/3; or 2.5Y 4/3 or 5/3. Texture is gravelly loam, very gravelly loam, gravelly sandy loam, very gravelly sandy loam, or extremely gravelly sandy loam. The content of clay ranges from 10 to 22 percent. The horizon has 25 to 65 percent gravel, 0 to 10 percent cobbles, and 0 to 5 percent stones. Reaction ranges from slightly acid to very strongly acid.

The Bt horizon has dry color of 7.5YR 6/3, 6/4, 6/6, 7/3, or 7/4; 10YR 5/4, 6/4, 6/6, 7/3, 7/4, 8/2, or 8/3; or 2.5Y 7/3 or 7/4. Moist color is 7.5YR 3/3, 4/2, 4/3, 4/4, 4/6, or 5/4; 10YR 4/4, 4/6, 5/3, 5/4, 6/4, or 6/6; or 2.5Y 5/3, 5/4, or 6/4. Texture is very gravelly loam, extremely gravelly loam, very cobbly loam, gravelly sandy loam, very gravelly sandy loam, extremely gravelly sandy loam, very cobbly sandy loam, extremely cobbly sandy loam, very stony sandy loam, or gravelly sandy clay loam. The content of clay ranges from 12 to 27 percent. The horizon has 15 to 80 percent gravel, 0 to 40 percent cobbles, and 0 to 40 percent stones. Reaction ranges from slightly acid to extremely acid.

Lomarica Series

The Lomarica series consists of moderately deep, well drained soils that formed in colluvium and residuum derived from metavolcanic rocks, mainly greenschist. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada foothills. Slopes range from 4 to 30 percent. The mean annual precipitation is about 30 inches (762 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Clayey-skeletal, mixed, superactive, thermic Ultic Haploxeralfs

Typical Pedon

Lomarica loam, on a east-facing slope of 25 percent, under a cover of annual grasses, forbs, and a trace of blue oak, at an elevation of 350 feet (107 m). When

described on 7/13/2000, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

- A—0 to 1 inch (0 to 3 cm); brown (7.5YR 5/3) loam, dark brown (7.5YR 3/3) moist; 15 percent clay; moderate very fine and fine subangular blocky structure; slightly hard, very friable, nonsticky, slightly plastic; many very fine roots; common fine and few very fine tubular pores; 3 percent subangular metavolcanic gravel; slightly acid, pH 6.6 by Hellige-Truog; clear smooth boundary.
- BAt—1 to 5 inches (3 to 13 cm); brown (7.5YR 5/4) loam, dark brown (7.5YR 3/4) moist; 20 percent clay; strong fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; few fine and many very fine roots; many very fine tubular pores; 10 percent discontinuous faint clay films; 3 percent subangular metavolcanic gravel; slightly acid, pH 6.6 by Hellige-Truog; clear wavy boundary.
- Bt1—5 to 9 inches (13 to 23 cm); brown (7.5YR 5/4) clay loam, brown (7.5YR 4/4) moist; 29 percent clay; strong fine and medium subangular blocky structure; moderately hard, very friable, slightly sticky, slightly plastic; common fine, few medium, and many very fine roots; common fine and many very fine tubular pores; 15 percent discontinuous faint clay films; 5 percent subangular metavolcanic gravel; slightly acid, pH 6.5 by Hellige-Truog; clear wavy boundary.
- Bt2—9 to 12 inches (23 to 30 cm); brown (7.5YR 5/4) clay loam, brown (7.5YR 4/4) moist; 32 percent clay; moderate very fine and fine subangular blocky structure; moderately hard, friable, moderately sticky, moderately plastic; common fine and many very fine roots; few medium and many very fine tubular pores; 20 percent discontinuous distinct clay films; 10 percent subangular metavolcanic gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual irregular boundary.
- 2Bt3—12 to 25 inches (30 to 64 cm); strong brown (7.5YR 5/6) extremely gravelly clay loam, strong brown (7.5YR 4/6) moist; 39 percent clay; moderate very fine and fine subangular blocky structure; hard, friable, moderately sticky, moderately plastic; few coarse and many very fine roots; few medium and common very fine tubular pores; 35 percent discontinuous distinct clay films; 65 percent subangular metavolcanic gravel; slightly acid, pH 6.6 by Hellige-Truog; clear wavy boundary.
- 2Btss—25 to 32 inches (64 to 81 cm); yellowish brown (10YR 5/4) extremely gravelly clay, dark yellowish brown (10YR 4/4) moist; 52 percent clay; strong medium and coarse subangular blocky structure; very hard, very firm, very sticky, very plastic; common fine, few coarse, and many very fine roots; common very fine tubular pores; 15 percent slickensides; 45 percent continuous distinct clay films; 80 percent subangular metavolcanic gravel; neutral, pH 6.7 by Hellige-Truog; clear wavy boundary.
- 2Cr—32 inches (81 cm); greenschist; few very fine roots in cracks; many very fine and few fine tubular pores.

Type location: Butte County, California; about 6.5 miles northwest of Loma Rica, approximately 450 feet north and 2,400 feet east of the southwest corner of sec. 8, T. 17 N., R. 5 E.; 39 degrees, 20 minutes, 20.10 seconds north latitude and 121 degrees, 26 minutes, 11.70 seconds west longitude; NAD83; USGS Quad: Loma Rica, California.

Range in Characteristics

The depth to paralithic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 59 to 65 degrees F (15 to 18 degrees C). The soil moisture control section is dry in all parts from about June 1 to October 15 (about 150 days). The particle-size control section averages 35 to 45 percent clay and 40 to 65 percent rock fragments, mostly gravel. Mineralogy is mixed. Slickensides range from 45 to 55

percent in the 2Btss horizon. Rock fragments on the surface range from 0 to 5 percent gravel and 0 to 2 percent cobbles. Some pedons have a BCt horizon.

The A horizon has dry color of 7.5YR 4/4, 4/6, or 5/3 or 5YR 4/4. Moist color is 7.5YR 3/3 or 3/4 or 5YR 3/4. Texture is loam. The content of clay ranges from 15 to 20 percent. The horizon has 3 to 10 percent gravel and 0 to 5 percent cobbles. By sum of cations, base saturation ranges from 60 to 70 percent. The content of organic matter is 5 to 10 percent. Reaction ranges from moderately acid to neutral.

The BA_t horizon has dry color of 7.5YR 5/4 or 5YR 4/6 or 5/6. Moist color is 7.5YR 3/4 or 5YR 4/4 or 4/6. Texture is loam or gravelly loam. The content of clay ranges from 18 to 23 percent. The horizon has 3 to 20 percent gravel and 0 to 5 percent cobbles. By sum of cations, base saturation ranges from 65 to 74 percent. The content of organic matter is 1 to 4 percent. Reaction is slightly acid or neutral.

The B_t1 horizon has dry color of 7.5YR 5/4 or 5YR 4/6 or 5/6. Moist color is 7.5YR 4/4 or 5YR 3/4 or 4/4. Texture is clay loam, gravelly clay loam, very gravelly clay loam, or extremely gravelly clay loam. The content of clay ranges from 29 to 38 percent. The horizon has 5 to 60 percent gravel and 0 to 15 percent cobbles. By sum of cations, base saturation ranges from 65 to 75 percent. The content of organic matter is 0.5 to 2 percent. Reaction is slightly acid.

The B_t2 horizon has dry color of 7.5YR 5/4 or 5YR 4/6 or 5/6. Moist color is 7.5YR 4/4 or 5YR 3/4, 4/4, or 4/6. Texture is clay loam, gravelly clay loam, very gravelly clay, or extremely gravelly clay. The content of clay ranges from 32 to 44 percent. The horizon has 10 to 65 percent gravel and 0 to 15 percent cobbles. By sum of cations, base saturation ranges from 65 to 75 percent. The content of organic matter is 0.5 to 2 percent. Reaction is moderately acid or slightly acid.

The 2B_t3 horizon has dry color of 7.5YR 5/6 or 5YR 4/6. Moist color is 7.5YR 4/6 or 5YR 3/4. Texture is extremely gravelly clay loam or extremely gravelly clay. The content of clay ranges from 35 to 45 percent. The horizon has 60 to 65 percent gravel and 0 to 15 percent cobbles. By sum of cations, base saturation ranges from 65 to 75 percent. The content of organic matter is 0.5 to 2 percent. Reaction is slightly acid or neutral.

The 2B_tss horizon has dry color of 5YR 4/6 or 10YR 6/4. Moist color is 5YR 4/4 or 10YR 5/4. Texture is clay or extremely gravelly clay. The content of clay ranges from 45 to 55 percent. The horizon has 5 to 80 percent gravel and 0 to 15 percent cobbles. By sum of cations, base saturation ranges from 75 to 85 percent. The content of organic matter is 0.5 to 1 percent. Reaction is neutral.

Lucksev Series

The Lucksev series consists of shallow or very shallow, moderately well drained soils that formed in residuum, colluvium, and alluvium derived from volcanic rocks. These soils are on ridgetops, side slopes, and strath terraces on Cascade foothills. Slopes range from 2 to 35 percent. The mean annual precipitation is about 27 inches (686 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Clayey, mixed, superactive, thermic, shallow Typic Haploxeralfs

Typical Pedon

Lucksev loam, on a west-facing slope of 35 percent, under a cover of annual grasses and forbs, at an elevation of 300 feet (91 m). When described on 5/10/2001, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); light yellowish brown (10YR 6/4) loam, brown (10YR 4/3) moist; 25 percent clay; moderate thin and medium platy structure parting to moderate fine and medium subangular blocky; very hard, friable, slightly sticky,

slightly plastic; common fine and many very fine roots; common very fine and fine and few medium irregular and tubular pores; 5 percent andesite gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

Bt1—2 to 7 inches (5 to 18 cm); brown (7.5YR 5/3) clay loam, brown (7.5YR 4/3) moist; 34 percent clay; strong medium and coarse angular blocky structure; extremely hard, firm, moderately sticky, moderately plastic; common very fine roots; common very fine and fine irregular and tubular pores; 70 percent continuous faint clay films; 2 percent quartz gravel and 10 percent andesite gravel; neutral, pH 6.8 by Hellige-Truog; clear smooth boundary.

Bt2—7 to 15 inches (18 to 38 cm); light brown (7.5YR 6/4) clay, brown (7.5YR 4/3) moist; 40 percent clay; strong fine and medium subangular blocky structure; extremely hard, firm, very sticky, very plastic; common very fine roots; many very fine and fine and common medium tubular pores; 90 percent continuous distinct clay films; 5 percent andesite gravel; neutral, pH 7.0 by Hellige-Truog; abrupt smooth boundary.

2Crq—15 inches (38 cm); moderately cemented volcanic sandstone bedrock with a silica cap, 1 mm thick, on top.

Type location: Butte County, California; about 1.25 miles south of Durham-Pentz Road and about 0.5 mile west of Clark Road, approximately 100 feet south and 2,000 feet east of the northwest corner of sec. 4, T. 20 N., R. 3 E.; 39 degrees, 37 minutes, 30 seconds north latitude and 121 degrees, 38 minutes, 42 seconds west longitude; NAD83; USGS Quad: Shippee, California.

Range in Characteristics

The depth to paralithic bedrock is 4 to 20 inches (10 to 51 cm). The mean annual soil temperature is 60 to 68 degrees F (16 to 20 degrees C). The particle-size control section averages 35 to 45 percent clay and 2 to 35 percent rock fragments, mostly gravel. Mineralogy is mixed. On the gentler slopes, a fluctuating water table can occur between the top of the bedrock and a depth of 2 inches (5 cm) from December through March. Redoximorphic features, such as oxidized iron masses and iron-manganese concretions, occur in the A horizon, and manganese accumulations occur on top of the paralithic contact. Rock fragments on the surface range from 0 to 15 percent gravel, 0 to 20 percent cobbles, 0 to 5 percent stones, and 0 to 2 percent boulders.

The A horizon has dry color of 10YR 6/2, 6/3, or 6/4 or 7.5YR 5/3, 6/3, or 7/3. Moist color is 10YR 4/2 or 4/3 or 7.5YR 4/2 or 4/3. Texture is loam, gravelly loam, sandy clay loam, or gravelly sandy clay loam. The content of clay ranges from 22 to 35 percent. The horizon has 2 to 35 percent gravel and 0 to 15 percent cobbles. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 7.5YR 5/3, 6/3, 6/4, or 7/4 or 10YR 6/3 or 7/3. Moist color is 7.5YR 4/2, 4/3, or 4/4 or 10YR 4/3 or 5/3. Texture is clay loam, sandy clay loam, sandy clay, clay, gravelly clay loam, gravelly clay, gravelly sandy clay, or cobbly clay. The content of clay ranges from 30 to 50 percent. The horizon has 2 to 30 percent gravel and 0 to 15 percent cobbles. Reaction is neutral or slightly alkaline.

Lumpkin Series

The Lumpkin series consists of shallow, well drained soils that formed in mixed tephra and residuum and colluvium derived from basalt. These soils are on the tops and side slopes of basalt ridges on volcanic Sierra Nevada mountains. Slopes range from 0 to 70 percent. The mean annual precipitation is about 80 inches (2,032 mm), and the mean annual air temperature is about 51 degrees F (11 degrees C).

Taxonomic class: Medial-skeletal, amorphic, mesic Lithic Haploxerands

Typical Pedon

Lumpkin gravelly medial sandy loam, on a southwest-facing slope of 2 percent, under a cover of greenleaf manzanita, at an elevation of 4,235 feet (1,318 m). When described on 6/19/1995, the soil was slightly moist throughout. (Colors are for dry soil unless otherwise noted.)

- A—0 to 3 inches (0 to 8 cm); dark brown (10YR 3/3) gravelly medial sandy loam, very dark grayish brown (10YR 3/2) moist; 12 percent clay; weak very fine subangular blocky structure; loose, very friable, nonsticky, nonplastic; common very fine and fine roots; many very fine irregular pores; 20 percent subangular basalt gravel; strongly acid, pH 5.3 by Hellige-Truog; NaF pH 10.6; abrupt smooth boundary.
- Bw1—3 to 8 inches (8 to 20 cm); brown (10YR 4/3) extremely gravelly medial fine sandy loam, very dark grayish brown (10YR 3/2) moist; 15 percent clay; weak very fine subangular blocky structure; loose, very friable, nonsticky, nonplastic; common very fine and fine and few medium roots; many very fine irregular pores; 25 percent subangular basalt cobbles and 40 percent subangular basalt gravel; strongly acid, pH 5.3 by Hellige-Truog; NaF pH 10.9; clear smooth boundary.
- Bw2—8 to 14 inches (20 to 36 cm); brown (10YR 4/3) extremely cobbly medial sandy loam, very dark grayish brown (10YR 3/2) moist; 14 percent clay; weak very fine subangular blocky structure; loose, very friable, nonsticky, nonplastic; common very fine and fine roots; many very fine irregular pores; 5 percent subangular basalt gravel and 80 percent subangular basalt cobbles; strongly acid, pH 5.3 by Hellige-Truog; NaF pH 10.6; abrupt smooth boundary.
- R—14 inches (36 cm); fractured, indurated basalt bedrock.

Type location: Butte County, California; about 1.25 miles east of Camp Eighteen, approximately 1,950 feet east and 400 feet north of the southwest corner of sec. 36, T. 21 N., R. 7 E.; 39 degrees, 37 minutes, 47 seconds north latitude and 121 degrees, 8 minutes, 52 seconds west longitude; NAD27; USGS Quad: Cascade, California.

Range in Characteristics

The depth to lithic bedrock is 10 to 20 inches (25 to 51 cm). The mean annual soil temperature is 47 to 54 degrees F (8 to 12 degrees C). The particle-size control section averages 12 to 18 percent clay and 35 to 65 percent rock fragments, mostly gravel and cobbles. Mineralogy is amorphous. The content of organic matter is 5 to 15 percent to a depth of 14 inches (36 cm). By ammonium acetate, base saturation ranges from 9 to 23 percent to a depth of 14 inches (36 cm). NaF pH is 10.5 to 12.0 throughout the profile. Rock fragments on the surface range from 10 to 80 percent gravel, 5 to 20 percent cobbles, and 0 to 5 percent stones.

The A horizon has dry color of 10YR 3/2, 3/3, 4/3, or 5/3. Moist color is 10YR 2/1 or 3/2 or 7.5YR 3/2. Texture is gravelly medial sandy loam, very gravelly medial fine sandy loam, or extremely gravelly medial fine sandy loam. The content of clay ranges from 8 to 12 percent. The content of gravel is 20 to 65 percent. Reaction ranges from slightly acid to strongly acid.

The Bw horizon has dry color of 10YR 4/3 or 5/3 or 7.5YR 3/2. Moist color is 10YR 3/1 or 3/2, 7.5YR 3/2, or 5YR 2/1. Texture is extremely gravelly medial fine sandy loam, extremely cobbly medial fine sandy loam, extremely cobbly medial sandy loam, or very gravelly medial sandy loam. The content of clay ranges from 9 to 18 percent. The horizon has 5 to 60 percent gravel and 5 to 80 percent cobbles. Reaction ranges from slightly acid to strongly acid.

Lumpkin Taxadjunct

The Lumpkin taxadjunct consists of very shallow, well drained soils that formed in mixed tephra and residuum and colluvium derived from volcanic rocks. These soils are on the tops and side slopes of volcanic nunataks and ridges on Southern Cascade and volcanic Sierra Nevada mountains. Slopes range from 0 to 30 percent. The mean annual precipitation is about 80 inches (2,032 mm), and the mean annual air temperature is about 49 degrees F (9 degrees C).

Taxonomic class: Medial-skeletal, amorphic, frigid Lithic Haploxerands

Typical Pedon

Lumpkin taxadjunct, on a southeast-facing slope of 2 percent, under a cover of shrubs, at an elevation of 5,680 feet (1,731 m). When described on 10/2/2001, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 4 inches (0 to 10 cm); grayish brown (10YR 5/2) very gravelly medial very fine sandy loam, dark brown (7.5YR 3/2) moist; 13 percent clay; moderate medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; few very fine roots; many very fine irregular pores; 55 percent subangular basalt gravel; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 11.5; abrupt smooth boundary.

Bw—4 to 9 inches (10 to 23 cm); yellowish brown (10YR 5/4) very gravelly medial very fine sandy loam, brown (7.5YR 4/3) moist; 15 percent clay; weak very fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; few medium and common very fine roots; many very fine irregular pores; 50 percent subangular basalt gravel; moderately acid, pH 6.0 by Hellige-Truog; NaF pH 10.5; abrupt smooth boundary.

R—9 inches (23 cm); indurated basalt bedrock.

Type location: Plumas County, California; about 2.3 miles southwest of Dogwood Peak, approximately 1,200 feet west and 200 feet north of the southeast corner of sec. 16, T. 22 N., R. 8 E.; 39 degrees, 45 minutes, 37 seconds north latitude and 121 degrees, 5 minutes, 11 seconds west longitude; NAD83; USGS Quad: Dogwood Peak, California.

Range in Characteristics

The depth to lithic bedrock is 5 to 10 inches (13 to 51 cm). The mean annual soil temperature is 40 to 47 degrees F (4 to 8 degrees C). The particle-size control section averages 14 to 18 percent clay and 40 to 55 percent rock fragments, mostly basalt gravel. Mineralogy is amorphic. The content of organic matter is 5 to 12 percent to a depth of 9 inches (23 cm). By ammonium acetate, base saturation ranges from 10 to 35 percent to a depth of 9 inches (23 cm). NaF pH is 10 to 11.5 throughout the profile. Acid-oxalate extractable Al plus $\frac{1}{2}$ Fe ranges from 2.9 to 3.5 percent (by weight) to a depth of 9 inches (23 cm). Rock fragments on the surface range from 50 to 70 percent gravel, 15 to 30 percent cobbles, and 0 to 20 percent boulders.

The A horizon has dry color of 10YR 5/2 or 5/3. Moist color is 7.5YR 3/2 or 3/3. Texture is very gravelly medial very fine sandy loam. The content of clay ranges from 10 to 15 percent. The horizon has 35 to 60 percent gravel and 0 to 10 percent cobbles. Reaction ranges from very strongly acid to slightly acid.

The Bw horizon has dry color of 10YR 5/4 or 6/4. Moist color is 7.5YR 4/3 or 4/4. Texture is very gravelly medial very fine sandy loam. The content of clay ranges from 14 to 18 percent. The horizon has 45 to 60 percent gravel and 0 to 10 percent cobbles. Reaction is moderately acid or slightly acid.

The Lumpkin taxadjunct is a taxadjunct because it has a frigid soil temperature regime and is very shallow. These differences do not significantly affect the use, management, or interpretations of the soils.

Lydon Series

The Lydon series consists of moderately deep, somewhat excessively drained soils that formed in weathered tephra over residuum and colluvium derived from volcanic rocks, dominantly mudflow breccia. These soils are on the tops and side slopes of volcanic ridges in the Cascade Mountains. Slopes range from 2 to 100 percent. The mean annual precipitation is about 62 inches (1,575 mm), and the mean annual air temperature is about 54 degrees F (12 degrees C).

Taxonomic class: Loamy-skeletal, isotic, mesic Andic Dystrochrepts

Typical Pedon

Lydon very gravelly medial coarse sandy loam on an east-facing slope of 5 percent, under a cover of California black oak and scattered mixed conifers, at an elevation of 3,630 feet (1,106 m). When described on 11/27/1995, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 0.5 inch (0 to 1 cm); oak and pine litter.

Oe—0.5 to 1 inch (1 to 2 cm); partially decomposed oak and pine litter.

A—1 to 3 inches (2 to 7 cm); dark grayish brown (10YR 4/2) very gravelly medial coarse sandy loam, dark brown (7.5YR 3/2) moist; 11 percent clay; moderate fine subangular blocky structure parting to moderate fine granular; soft, very friable, nonsticky, slightly plastic; common very fine and fine roots; many very fine and fine and common medium and coarse irregular pores; noneffervescent; 2 percent cobbles and 40 percent gravel; moderately acid, pH 5.7 by pH meter 1:1 water; NaF pH 10.7; clear smooth boundary.

Bw1—3 to 6 inches (7 to 15 cm); brown (10YR 5/3) very gravelly medial coarse sandy loam, dark brown (7.5YR 3/3) moist; 10 percent clay; weak medium subangular blocky structure; soft, very friable, nonsticky, slightly plastic; common very fine and fine and few medium roots; many very fine and fine irregular pores, common very fine and fine tubular pores, and common medium irregular pores; noneffervescent; 10 percent cobbles and 35 percent gravel; moderately acid, pH 5.8 by pH meter 1:1 water; NaF pH 10.8; clear smooth boundary.

Bw2—6 to 13 inches (15 to 33 cm); brown (7.5YR 5/3) extremely gravelly sandy loam, dark brown (7.5YR 3/4) moist; 11 percent clay; weak fine subangular blocky structure; soft, very friable, nonsticky, slightly plastic; many very fine to coarse roots; many very fine and fine and common medium irregular and tubular pores; noneffervescent; 15 percent cobbles and 50 percent gravel; moderately acid, pH 5.6 by pH meter 1:1 water; NaF pH 10.5; clear smooth boundary.

Bw3—13 to 21 inches (33 to 53 cm); light brown (7.5YR 6/4) extremely gravelly sandy loam, brown (7.5YR 4/4) moist; 15 percent clay; moderate fine granular structure; loose, nonsticky, slightly plastic; many very fine to medium and few coarse roots; many very fine and fine and common medium irregular and tubular pores; noneffervescent; 25 percent cobbles and 65 percent gravel; moderately acid, pH 5.6 by pH meter 1:1 water; NaF pH 10.2; clear smooth boundary.

Bw4—21 to 35 inches (53 to 88 cm); light yellowish brown (10YR 6/4) extremely cobbly fine sandy loam, dark yellowish brown (10YR 4/4) moist; 16 percent clay; moderate fine granular structure; loose, nonsticky, slightly plastic; common very fine to medium roots; many very fine and fine and common medium irregular and tubular pores; noneffervescent; 70 percent cobbles and 20 percent gravel; moderately acid, pH 5.6 by pH meter 1:1 water; NaF pH 10.3; clear smooth boundary.

R—35 inches (88 cm); fractured, indurated andesite; fractures occurring 8 to 20 inches (20 to 51 cm) apart.

Type location: Butte County, California; about 0.6 mile southeast of Ewalt Camp, approximately 2,100 feet east and 350 feet north of the northwest corner of sec. 2, T. 24 N., R. 3 E.; in an unsectionized area; 39 degrees, 58 minutes, 30.3 seconds north latitude and 121 degrees, 36 minutes, 30.4 seconds west longitude; NAD27; USGS Quad: Stirling City, California.

Range in Characteristics

The depth to lithic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 52 to 59 degrees F (11 to 15 degrees C). The soil moisture control section is dry in all parts from about July to October (about 90 days). The particle-size control section averages 12 to 20 percent clay and 35 to 80 percent rock fragments, mostly gravel. Mineralogy is isotic. Acid oxalate extractable Al plus $\frac{1}{2}$ Fe ranges from 2.94 in the A horizon to 1.34 in the Bw4 horizon. Rock fragments on the surface range from 20 to 50 percent gravel, 0 to 20 percent cobbles, and 0 to 15 percent stones.

The A horizon has dry color of 5YR 6/4, 7.5YR 5/3 or 6/3, or 10YR 4/2. Moist color is 5YR 3/2, 3/3, or 4/3 or 7.5YR 3/2, 3/4, or 4/3. Texture is very gravelly medial coarse sandy loam, very gravelly medial sandy loam, or gravelly medial sandy loam. The content of clay ranges from 10 to 18 percent. The horizon has 20 to 40 percent gravel, 0 to 20 percent cobbles, and 0 to 15 percent stones. The content of organic matter is 10 to 18 percent. By ammonium acetate, base saturation ranges from 30 to 40 percent. NaF pH is 10 to 11. Reaction ranges from moderately acid to neutral.

The upper part of the Bw horizon has dry color of 7.5YR 4/4, 5/3, 5/4, 6/4, or 6/6 or 10YR 5/3 or 6/3. Moist color is 7.5YR 3/3, 3/4, 4/3, or 4/4 or 5YR 4/3 or 4/4. Texture is very gravelly medial coarse sandy loam, gravelly medial sandy loam, very gravelly medial sandy loam, or extremely gravelly medial sandy loam. The content of clay ranges from 10 to 18 percent. The content of gravel is 10 to 50 percent, the content of cobbles is 5 to 20 percent, and the content of stones is 0 to 15 percent. The content of organic matter is 3 to 13 percent. By ammonium acetate, base saturation ranges from 25 to 35 percent. NaF pH is 9.8 to 11. Reaction ranges from strongly acid to neutral.

The lower part of the Bw horizon has dry color of 7.5YR 6/3 or 6/4 or 10YR 6/3 or 6/4. Moist color is 5YR 4/4; 7.5YR 3/4, 4/3, or 4/4; or 10YR 4/3. Texture is very gravelly sandy loam, extremely gravelly sandy loam, or extremely cobbly fine sandy loam. The content of clay ranges from 12 to 20 percent. The content of gravel is 20 to 65 percent, the content of cobbles is 15 to 70 percent, and the content of stones is 0 to 15 percent. The content of organic matter is 1 to 5 percent. By ammonium acetate, base saturation ranges from 35 to 45 percent. NaF pH is 9.5 to 10.5. Reaction ranges from strongly acid to slightly acid.

Mac Series

The Mac series consists of moderately deep, well drained soils that formed in residuum and colluvium derived from metasedimentary and metavolcanic rocks. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada mountains. Slopes range from 3 to 70 percent. The mean annual precipitation is about 65 inches (1,651 mm), and the mean annual air temperature is about 55 degrees F (13 degrees C).

Taxonomic class: Fine-loamy, mixed, active, mesic Typic Haploxerults

Typical Pedon

Mac gravelly loam, on a south-southwest-facing slope of 15 percent, under a cover of ponderosa pine, white fir, sugar pine, Douglas-fir, incense cedar, and tanoak, at an elevation of 3,540 feet (1,079 m). When described on 7/15/1999, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

- Oi—0 to 1 inch (0 to 3 cm); slightly decomposed plant material; abrupt smooth boundary.
- A—1 to 4 inches (3 to 10 cm); light brown (7.5YR 6/4) gravelly loam, brown (7.5YR 4/4) moist; 23 percent clay; moderate fine and medium granular structure; soft, very friable, slightly sticky, slightly plastic; many very fine and fine and few medium roots; many very fine to medium irregular and tubular pores; 15 percent gravel; moderately acid, pH 6.0 by Hellige-Truog; clear smooth boundary.
- Bt1—4 to 9 inches (10 to 22 cm); reddish yellow (5YR 7/6) very gravelly loam, yellowish red (5YR 5/6) moist; 27 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common fine and medium, few coarse, and many very fine roots; many very fine to coarse irregular and tubular pores; 80 percent continuous faint clay films; 15 percent cobbles and 25 percent gravel; strongly acid, pH 5.5 by Hellige-Truog; clear smooth boundary.
- Bt2—9 to 15 inches (22 to 38 cm); reddish yellow (5YR 6/6) gravelly silty clay loam, yellowish red (5YR 5/6) moist; 29 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; common very fine to medium and few coarse roots; many very fine to coarse tubular pores; 80 percent continuous distinct clay films; 25 percent gravel; strongly acid, pH 5.4 by Hellige-Truog; gradual smooth boundary.
- Bt3—15 to 23 inches (38 to 58 cm); reddish yellow (5YR 6/6) silty clay loam, yellowish red (5YR 5/6) moist; 31 percent clay; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky, moderately plastic; common very fine to coarse roots; many very fine and fine and common medium tubular pores; 80 percent continuous distinct clay films; 10 percent gravel; strongly acid, pH 5.3 by Hellige-Truog; clear smooth boundary.
- Crt—23 to 37 inches (58 to 94 cm); pale brown (10YR 6/3) very gravelly silt loam, brown (10YR 5/3) moist; 27 percent clay; massive; soft, very friable, slightly sticky, slightly plastic; few very fine and fine and common medium roots; few very fine to medium tubular pores; 20 percent continuous distinct clay films; 60 percent gravel; very strongly acid, pH 5.0 by Hellige-Truog; clear smooth boundary.
- Cr—37 inches (94 cm); weakly cemented phyllite bedrock.

Type location: Butte County, California; about 2.9 miles northeast of Sawmill Peak, approximately 2,000 feet north and 2,000 feet west of the southeast corner of sec. 22, T. 23 N., R. 4 E.; 39 degrees, 50 minutes, 8 seconds north latitude and 121 degrees, 30 minutes, 45 seconds west longitude; NAD83; USGS Quad: Paradise East, California.

Range in Characteristics

The depth to paralithic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 50 to 57 degrees F (10 to 14 degrees C). The particle-size control section averages 18 to 35 percent clay and 15 to 35 percent rock fragments, mostly gravel. Mineralogy is mixed. Rock fragments on the surface range from 5 to 50 percent gravel, 0 to 10 percent cobbles, and 0 to 5 percent stones.

The A horizon has dry color of 7.5YR 5/4, 6/4, or 6/6 or 10YR 6/2, 6/3, 6/4, 7/2, 7/3, or 7/4. Moist color is 7.5YR 4/4, 5YR 4/4 or 4/6, or 10YR 3/2, 4/2, 4/3, 4/4, or 5/4. Texture is gravelly loam, very gravelly loam, or very gravelly sandy loam. The content

of clay ranges from 15 to 25 percent. The horizon has 15 to 45 percent gravel and 0 to 10 percent cobbles. Reaction ranges from moderately acid to neutral.

The Bt horizon has dry color of 5YR 5/6, 6/6, or 7/6; 7.5YR 5/6, 6/6, 7/6, or 7/3; or 10YR 6/4, 7/4, 7/2, 7/3, or 8/6. Moist color is 5YR 4/4, 4/6, 5/6, or 5/8; 7.5YR 4/3, 4/4, 5/4, 5/6, or 6/6; 10YR 4/2, 4/3, 5/3, or 6/6; or 2.5YR 4/6. Texture is gravelly loam, very gravelly loam, clay loam, gravelly clay loam, silt loam, silty clay loam, gravelly silty clay loam, or gravelly sandy loam. The content of clay ranges from 17 to 35 percent. The horizon has 10 to 45 percent gravel and 0 to 15 percent cobbles. Reaction ranges from strongly acid to slightly acid.

The Crt horizon has dry color of 10YR 6/3, 6/4, or 7/3 or 2.5Y 6/2. Moist color is 10YR 5/3 or 2.5Y 4/2. Texture is very gravelly silt loam, extremely gravelly loam, extremely gravelly sandy clay loam, or extremely cobbly loam. The content of clay ranges from 16 to 27 percent. The horizon has 30 to 80 percent gravel and 0 to 40 percent cobbles. Reaction ranges from very strongly acid to slightly acid.

Marcum Series

The Marcum series consists of deep or very deep, moderately well drained soils that formed in alluvium derived from mixed sources. These soils are on low terraces and basin rims. Slopes range from 0 to 2 percent. The mean annual precipitation is about 18 inches (457 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Fine, smectitic, thermic Typic Argixerolls

Typical Pedon

Marcum clay loam, on a slope of 1 percent, in an irrigated pear orchard, at an elevation of 37 feet (11 m). When described on 8/16/1978, the soil was dry to a depth of 6 inches (15 cm) and moist below that depth. (Colors are for dry soil unless otherwise noted.)

- Ap—0 to 6 inches (0 to 15 cm); brown (10YR 5/3) clay loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; hard, friable, sticky, plastic; few fine tubular and irregular pores; neutral, pH 7.0; clear smooth boundary.
- A—6 to 16 inches (15 to 41 cm); brown (10YR 4/3) clay loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; hard, friable, sticky, plastic; common very fine and few fine roots; common very fine tubular pores; slightly alkaline, pH 7.5; gradual wavy boundary.
- Bt1—16 to 28 inches (41 to 71 cm); dark yellowish brown (10YR 4/4) clay loam, dark yellowish brown (10YR 3/4) moist; weak medium and coarse subangular blocky structure; very hard, firm, very sticky, very plastic; few very fine and fine roots; few very fine tubular pores; few thin clay films and pressure faces on ped; few fine manganese concretions; moderately alkaline, pH 8.0; clear wavy boundary.
- Bt2—28 to 40 inches (71 to 102 cm); strong brown (7.5YR 5/6) clay, strong brown (7.5YR 4/6) moist; weak fine and medium prismatic structure; very hard, firm, very sticky, very plastic; few very fine roots; few very fine tubular pores; many thin clay films and pressure faces on ped; few very fine and fine manganese concretions; moderately alkaline, pH 8.0; gradual wavy boundary.
- Bk—40 to 43 inches (102 to 109 cm); light yellowish brown (10YR 6/4) clay loam, dark yellowish brown (10YR 4/4) moist; massive; hard, friable, sticky, plastic; few very fine roots; few very fine tubular pores; few thin clay films on faces of ped; few very fine manganese concretions; slightly effervescent; disseminated lime; moderately alkaline, pH 8.0; abrupt wavy boundary.
- 2Cr—43 to 62 inches (109 to 158 cm); very pale brown (10YR 7/4) siltstone, light yellowish brown (10YR 6/4) moist; many black (10YR 2/1) manganese stains on

fracture faces; many yellowish brown (10YR 5/8), brownish yellow (10YR 6/6 and 6/8), and strong brown (7.5YR 5/8) mottles on fracture faces and in pores; massive; very hard, very firm; many very fine and few fine and coarse tubular pores; slightly effervescent; lime in seams and in a laminar cap, 0.5 cm thick, that is discontinuous within the pedon; moderately alkaline, pH 8.0.

Type location: Sutter County, California; about 0.6 mile northwest of Tudor on Highway 99, then 150 feet west into a pear orchard, approximately 365 feet south and 120 feet west of the northeast corner of sec. 4, T. 13 N., R. 3 E.; 39 degrees, 37 minutes, 8 seconds north latitude and 121 degrees, 38 minutes, 3 seconds west longitude; NAD27; USGS Quad: Gilsizer Slough, California.

Range in Characteristics

The depth to paralithic bedrock is 40 to 80 inches (102 to 203 cm). The mean annual soil temperature is 60 to 65 degrees F (16 to 18 degrees C). The soil temperature is above 47 degrees F (8 degrees C) the entire year. The difference between the mean summer and mean winter soil temperature is 30 to 33 degrees F. In nonirrigated areas, the soil between depths of 6 and 17 inches (15 to 43 cm) is dry in all parts from June to October and is moist in some or all parts from November to May. Reaction is neutral to moderately alkaline.

The A horizon has dry color of 10YR 5/2, 5/3, or 4/3 or 7.5YR 5/2. Moist color is 10YR 3/2 or 3/3 or 7.5YR 3/2. The content of clay ranges from 27 to 35 percent.

The Bt horizon has dry color of 10YR 4/4, 5/3, 5/4, 6/3, 6/4, or 7/4 or 7.5YR 6/4 or 5/6. Moist color is 10YR 3/4, 4/3, 4/4, or 5/4 or 7.5YR 3/2, 3/3, 4/4, or 4/6. Texture is clay loam, silty clay loam, clay, or silty clay. The content of clay ranges from 30 to 60 percent.

The Bk horizon has dry color of 10YR 5/4 or 6/4. Moist color is 10YR 4/3, 4/4, or 5/4. The content of clay ranges from 30 to 40 percent.

Mariposa Taxadjunct

The Mariposa taxadjunct consists of shallow or moderately deep, well drained soils that formed in material weathered from metamorphic rocks. These soils are on metamorphic Sierra Nevada mountains. Slopes range from 2 to 75 percent. The mean annual precipitation is about 65 inches (1,651 mm), and the mean annual air temperature is about 55 degrees F (13 degrees C).

Taxonomic class: Fine-loamy, parasesquic, mesic Typic Haploxerults

Typical Pedon

Mariposa gravelly loam. (Colors are for dry soil unless otherwise noted.)

Oi—2 inches to 0 (5 cm to 0); partially decomposed leaves, twigs, and needles.

A—0 to 4 inches (0 to 10 cm); brown (7.5YR 5/4) gravelly loam, reddish brown (5YR 3/4) moist; strong medium granular structure; soft, very friable, nonsticky, nonplastic; many very fine to medium roots; many very fine irregular pores; 20 percent gravel and 5 percent cobbles; neutral; clear smooth boundary.

Bt1—4 to 10 inches (10 to 25 cm); reddish brown (5YR 5/4) gravelly loam, dark reddish brown (5YR 3/4) moist; moderate medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; many very fine to medium roots; common very fine irregular and many very fine and fine tubular pores; 20 percent gravel and 5 percent cobbles; few thin clay films lining pores; moderately acid; clear smooth boundary.

Bt2—10 to 17 inches (25 to 43 cm); yellowish red (5YR 4/6) gravelly loam, dark red (2.5YR 3/6) moist; weak medium subangular blocky structure; slightly hard, very

friable, slightly sticky, slightly plastic; many very fine to medium and common coarse roots; common very fine and fine tubular pores; common thin clay films in pores; 20 percent gravel and 5 percent cobbles; moderately acid; clear smooth boundary.

Bt3—17 to 23 inches (43 to 58 cm); yellowish red (5YR 5/6) gravelly clay loam, dark red (2.5YR 3/6) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; common very fine to coarse roots; common fine tubular pores; 20 percent gravel and 5 percent cobbles; common thin clay films on faces of peds and in pores; moderately acid; abrupt smooth boundary.

R—23 inches (58 cm); gray (10YR 6/1), indurated schist bedrock; tilted about 80 degrees from horizontal.

Type location: Yuba County, California; about 0.6 mile northeast of Challenge, approximately 600 feet south and 1,500 feet east of the northwest corner of sec. 20, T. 19 N., R. 7 E.; 39 degrees, 29 minutes, 46 seconds north latitude and 121 degrees, 12 minutes, 57 seconds west longitude; NAD27; USGS Quad: Challenge, California.

Range in Characteristics

The depth to lithic bedrock ranges from 15 to 35 inches (38 to 89 cm). It varies over very short distances. The mean annual soil temperature is 47 to 54 degrees F (8 to 12 degrees C). The soil moisture control section is dry in all parts from about July 1 to October 15 (about 85 days). Mineralogy is mixed. The content of organic matter is 1 to 3 percent to a depth of 6 inches (15 cm). The content of gravel is 15 to 25 percent, the content of cobbles is 0 to 10 percent, and the content of stones is 0 to 10 percent.

The A horizon has dry color of 7.5YR 5/4, 5/6, or 4/4. Moist color is 7.5YR 3/4 or 5YR 3/4. Texture is gravelly or stony loam. The content of clay ranges from 10 to 20 percent. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 7.5YR 5/6 or 5YR 4/4, 4/6, 5/6, or 5/8. Moist color is 5YR 3/4, 4/6, or 3/6 or 2.5YR 3/6. Texture is gravelly loam, gravelly clay loam, stony loam, or stony clay loam. The content of clay ranges from 20 to 30 percent. The absolute clay increase from the A horizon to the Bt horizon is 3 to 4 percent in 50 to 70 percent of each pedon. It is 1 to 2 percent in the remaining 30 to 50 percent of each pedon, where bedrock ledges interrupt at a shallow depth. Reaction is moderately acid.

The Mariposa taxadjunct is a taxadjunct because it has a greater quantity of free iron oxides and carbon in the Bt horizon than is defined as the range for the series and has parasesquic mineralogy. These differences do not significantly affect the use, management, or interpretations of the soils.

McNair Series

The McNair series consists of deep, well drained soils that formed in tephra over residuum and colluvium weathered from volcanic mudflow. These soils are on lahar over narrow basalt plateaus on volcanic Sierra Nevada mountains. Slopes range from 2 to 50 percent. The mean annual precipitation is about 80 inches (2,032 mm), and the mean annual air temperature is about 50 degrees F (10 degrees C.)

Taxonomic class: Medial-skeletal, amorphic, frigid Humic Haploxerands

Typical Pedon

McNair medial coarse sandy loam, on a west-facing slope of 5 percent, under a cover of mixed conifers and shrubs, at an elevation of 4,960 feet (1,512 m). When described

on 7/23/1997, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

- Oi—0 to 3 inches (0 to 8 cm); partially decomposed litter of needles, leaves, cones, and twigs.
- A1—3 to 6 inches (8 to 15 cm); very dark grayish brown (10YR 3/2) medial coarse sandy loam, black (10YR 2/1) moist; 5 percent clay; weak very fine granular structure; loose, very friable, nonsticky, nonplastic; common fine roots; many very fine irregular pores; extremely hydrophobic; 12 percent subrounded andesite gravel; neutral, pH 6.7 by Hellige-Truog; NaF pH 11.7; abrupt smooth boundary.
- A2—6 to 16 inches (15 to 41 cm); dark grayish brown (10YR 4/2) gravelly medial coarse sandy loam, black (10YR 2/1) moist; 10 percent clay; weak very fine subangular blocky structure parting to weak fine granular; loose, very friable, nonsticky, nonplastic; common fine to coarse roots; many very fine irregular pores; moderately hydrophobic, smeary; 10 percent rounded andesite gravel and 5 percent rounded andesite stones; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 11.5; clear smooth boundary.
- Bw1—16 to 25 inches (41 to 63 cm); brown (7.5YR 5/3) very gravelly medial sandy loam, brown (7.5YR 4/2) moist; 12 percent clay; weak fine subangular blocky structure parting to weak fine granular; loose, very friable, nonsticky, nonplastic; common fine and medium roots; many very fine irregular pores; smeary; 30 percent rounded andesite gravel, 5 percent rounded volcanic mudflow cobbles, and 5 percent rounded andesite stones; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 11.5; clear wavy boundary.
- Bw2—25 to 33 inches (63 to 84 cm); brown (7.5YR 5/3) very gravelly medial sandy loam, brown (7.5YR 4/2) moist; 15 percent clay; weak very fine subangular blocky structure; loose, very friable, nonsticky, nonplastic; common fine and medium roots; many very fine irregular pores; 35 percent rounded andesite gravel and 5 percent subrounded volcanic mudflow gravel; moderately acid, pH 6.0 by Hellige-Truog; NaF pH 11.3; clear wavy boundary.
- Bw3—33 to 48 inches (84 to 122 cm); brown (7.5YR 5/3) very gravelly medial sandy loam, brown (7.5YR 4/3) moist; 16 percent clay; weak very fine subangular blocky structure; loose, very friable, nonsticky, nonplastic; many fine and medium and few coarse roots; many very fine irregular pores; smeary; 30 percent rounded andesite gravel, 5 percent rounded andesite cobbles, 5 percent rounded andesite stones, and 15 percent subrounded volcanic mudflow gravel; very strongly acid, pH 4.7 by Hellige-Truog; NaF pH 10.7; abrupt smooth boundary.
- BC—48 to 57 inches (122 to 145 cm); pale brown (10YR 6/3) extremely gravelly coarse sandy loam, brown (10YR 4/3) moist; 8 percent clay; weak very fine granular structure; loose, very friable, nonsticky, nonplastic; common fine and medium roots; many very fine irregular pores; 60 percent rounded andesite gravel and 20 percent subrounded volcanic mudflow gravel; very strongly acid, pH 5.0 by Hellige-Truog; NaF pH 10.5; clear smooth boundary.
- Cr—57 to 88 inches (145 to 223 cm); moderately cemented volcanic mudflow; few medium roots in horizontal fractures about 8 to 12 inches apart; few pockets of highly weathered volcanic mudflow.

Type location: Plumas County, California; about 2.4 miles east of Cascade, approximately 650 feet east and 1,200 feet south of the northwest corner of sec. 7, T. 21 N., R. 8 E.; 39 degrees 41 minutes 51.4 seconds north latitude and 121 degrees 8 minutes 3.3 seconds west longitude; NAD83; USGS Quad: Cascade, California.

Range in Characteristics

The depth to paralithic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 40 to 47 degrees F (4 to 8 degrees C.) The soil moisture

control section is dry in all parts from about July to October (about 90 days). The particle-size control section averages 10 to 18 percent clay and 35 to 50 percent rock fragments, mostly gravel and cobbles. Mineralogy is amorphous. By ammonium acetate, base saturation ranges from 10 to 35 percent. P retention is more than 95 percent to a depth of 33 inches (84 cm). Rock fragments on the surface range from 0 to 10 percent gravel, 0 to 10 percent cobbles, 0 to 10 percent stones, and 0 to 10 percent boulders. Some pedons do not have a BC horizon.

The A horizon has dry color of 10YR 3/2, 4/2, 4/3, or 5/3. Moist color is 10YR 2/1, 2/2, or 3/2 or 7.5YR 3/2 or 3/3. Texture is dominantly medial coarse sandy loam and gravelly medial coarse sandy loam, but in some pedons it is very gravelly medial sandy loam or gravelly medial silt loam. The content of clay ranges from 5 to 12 percent. The horizon has 5 to 20 percent gravel, 0 to 5 percent cobbles, and 0 to 5 percent stones. The content of organic matter is 9 to 36 percent. Acid oxalate extractable Al plus $\frac{1}{2}$ Fe ranges from 2.9 to 3.5. NaF pH is 11.0 to 12.0. Reaction ranges from strongly acid to neutral.

The Bw horizon has dry color of 7.5YR 5/3, 6/4, or 7/4 or 10YR 4/3, 5/4, 6/3, 6/4, 7/3, 7/4, or 8/3. Moist color is 7.5YR 3/4, 4/2, 4/3, 4/4, or 5/4 or 10YR 2/2, 4/3, 4/4, 6/6, or 8/4. Texture is very gravelly medial sandy loam, extremely gravelly medial sandy loam, extremely gravelly medial coarse sandy loam, very gravelly medial loam, extremely gravelly medial loam, or extremely gravelly medial sandy clay loam. The content of clay ranges from 10 to 25 percent. The horizon has 35 to 50 percent gravel, 0 to 30 percent cobbles, and 0 to 10 percent stones. Pararock fragments consist of a weathered volcanic mudflow matrix. The content of paragravel is 5 to 15 percent, and the content of paracobbles is 0 to 5 percent. The content of organic matter is 6 to 9 percent. Acid oxalate extractable Al plus $\frac{1}{2}$ Fe ranges from 1.7 to 2.5. The content of glass ranges from 10 to 29 percent. NaF pH is 10.5 to 11.5. Reaction ranges from very strongly acid to slightly acid.

The BC horizon has dry color of 10YR 6/3 or 7/4. Moist color is 10YR 4/3 or 5/4. Texture is extremely gravelly sandy loam, extremely gravelly coarse sandy loam, extremely gravelly loam, or extremely gravelly sandy clay loam. The content of clay ranges from 8 to 25 percent. The horizon has 60 to 80 percent gravel, 0 to 10 percent cobbles, and 0 to 10 percent stones. The content of paragravel is 20 to 30 percent. The content of organic matter is 4 to 6 percent. NaF pH is 10.5 to 11.0. Reaction is very strongly acid or strongly acid.

Mildred Series

The Mildred series consists of moderately deep, well drained soils that formed in material weathered from basic intrusive igneous rocks. These soils are on plutons in the Sierra Nevada Mountains. Slopes range from 3 to 50 percent. The mean annual precipitation is about 45 inches (114 mm), and the mean annual air temperature is about 57 degrees F (14 degrees C).

Taxonomic class: Fine, mixed, active, mesic Ultic Haploxeralfs

Typical Pedon

Mildred cobbly loam, on a northeast-facing slope of 18 percent, under a cover of whiteleaf manzanita, scattered ponderosa pine, and foothill pine, at an elevation of 1,670 feet (509 m). When described on 8/28/1985, the soil was dry throughout. (Colors are for dry soil unless otherwise noted).

A—0 to 3 inches (0 to 8 cm); pale brown (10YR 6/3) cobbly loam, dark yellowish brown (10YR 4/4) moist; moderate medium granular structure; slightly hard, very friable, slightly sticky, slightly plastic; many very fine and few fine roots; common

- very fine irregular and few very fine tubular pores; 20 percent cobbles, 10 percent gravel, and 3 percent stones; slightly acid, pH 6.2; clear wavy boundary.
- Bt—3 to 9 inches (8 to 23 cm); light brown (7.5YR 6/4) cobbly clay loam, brown (7.5YR 4/4) moist; weak medium subangular blocky structure; slightly hard, friable, sticky, plastic; common very fine and few fine roots; common very fine tubular pores; few thin clay films on faces of peds and common moderately thick clay films in pores; 20 percent cobbles, 10 percent gravel, and 3 percent stones; slightly acid, pH 6.4; abrupt smooth boundary.
- 2Bt1—9 to 15 inches (23 to 38 cm); reddish brown (5YR 4/4) clay, yellowish red (5YR 4/6) moist; strong medium prismatic structure parting to weak medium subangular blocky; hard, firm, very sticky, very plastic; few very fine roots; common very fine tubular pores; common pressure faces; neutral, pH 6.8; clear smooth boundary.
- 2Bt2—15 to 20 inches (38 to 51 cm); brown (10YR 5/3) clay, dark brown (10YR 4/3) moist; strong medium prismatic structure parting to weak medium subangular blocky; very hard, very firm, very sticky, very plastic; few very fine roots; common very fine tubular pores; common pressure faces; neutral, pH 7.0; clear smooth boundary.
- 2BCt—20 to 23 inches (51 to 58 cm); reddish yellow (7.5YR 6/6) clay loam, strong brown (7.5YR 5/6) moist; strong medium prismatic structure parting to weak medium subangular blocky; very hard, very firm, very sticky, very plastic; few very fine and medium roots; common very fine tubular pores; few pressure faces; common moderately thick clay films on faces of peds and many moderately thick clay films in pores; neutral, pH 7.0; abrupt wavy boundary.
- 2Cr—23 inches (58 cm); mixed reddish yellow (7.5YR 7/8), light gray (10YR 7/1), and white (10YR 8/1), weathered norite.

Type location: Yuba County, California; about 0.75 mile north of Oregon House on Frenchtown Road, then northwest about 1 mile in the Thousand Trails Campground, approximately 2,550 feet south and 1,850 feet west of the northeast corner of sec. 35, T. 18 N., R. 6 E.; 39 degrees, 22 minutes, 31 seconds north latitude and 121 degrees, 15 minutes, 54 seconds west longitude; NAD27; USGS Quad: Rackerby, California.

Range in Characteristics

The depth to paralithic bedrock ranges from 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 52 to 56 degrees F (11 to 13 degrees C). The soil temperature is below 47 degrees (8 degrees C) from January 1 to February 31. The soil moisture control section is dry in all parts from June 15 to October 31 and is moist in some or all parts from November 1 to June 15.

The A horizon has dry color of 10YR 6/3 or 7.5YR 5/6, 5/4, or 5/3. Moist color is 10YR 4/4 or 3/4 or 7.5YR 3/4. The content of clay ranges from 18 to 27 percent. The content of rock fragments ranges from 15 to 35 percent, including 0 to 5 percent stones, 5 to 25 percent cobbles, and 10 to 25 percent gravel. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 10YR 6/4 or 7.5YR 7/4, 6/4, 5/4, or 5/3. Moist color is 10YR 4/3 or 7.5YR 4/6, 4/4, 4/3, or 3/4. The content of clay ranges from 27 to 35 percent. The content of rock fragments ranges from 15 to 35 percent, including 0 to 5 percent stones, 5 to 25 percent cobbles, and 10 to 25 percent gravel. Reaction is slightly acid or neutral. Base saturation is 50 to 75 percent in some part of the horizon.

The 2Bt horizon has dry color of 10YR 5/3; 7.5YR 6/6, 6/4, 5/5, or 5/4; or 5YR 5/6, 5/4, or 4/4. Moist color is 10YR 4/3; 7.5YR 5/6, 4/4, or 3/4; or 5YR 4/6 or 4/4. The horizon has an abrupt upper boundary. Texture is clay loam or clay. The content of clay ranges from 35 to 60 percent. The absolute clay increase from the Bt horizon to the 2Bt horizon is 15 to 30 percent. The content of rock fragments ranges from 0 to

15 percent, including 0 to 15 percent cobbles and 0 to 15 percent gravel. Reaction is slightly acid or neutral. Base saturation is 75 to 95 percent.

Millerridge Series

The Millerridge series consists of moderately deep, well drained soils that formed in residuum and colluvium derived from ultramafic rocks. These soils are on ridgetops and side slopes on ultramafic Sierra Nevada mountains. Slopes range from 3 to 70 percent. The mean annual precipitation is about 52 inches (1,321 mm), and the mean annual air temperature is about 56 degrees F (13 degrees C).

Taxonomic class: Fine-loamy, mixed, active, mesic Ultic Haploxeralfs

Typical Pedon

Millerridge gravelly sandy clay loam, on a south-facing slope of 15 percent, under a cover of yellow starthistle, buckbrush, whiteleaf manzanita, and toyon, at an elevation of 2,180 feet (664 m). When described on 10/24/2000, the soil was moderately dry to a depth of 12 inches (30 cm) and dry below that depth. (Colors are for dry soil unless otherwise noted.)

- A—0 to 2 inches (0 to 5 cm); light brown (7.5YR 6/4) gravelly sandy clay loam, brown (7.5YR 4/3) moist; 23 percent clay; moderate fine and medium granular structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine and fine and common medium roots; many very fine to medium tubular and irregular pores; 5 percent stones, 5 percent cobbles, and 7 percent gravel; neutral, pH 6.7 by Hellige-Truog; clear smooth boundary.
- Bt1—2 to 6 inches (5 to 15 cm); reddish yellow (7.5YR 7/6) stony sandy clay loam, strong brown (7.5YR 4/6) moist; 28 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine to medium roots; common very fine to medium tubular pores; 60 percent continuous faint clay films; 5 percent stones, 5 percent cobbles, and 5 percent gravel; slightly acid, pH 6.6 by Hellige-Truog; gradual smooth boundary.
- Bt2—6 to 12 inches (15 to 30 cm); reddish yellow (5YR 6/6) cobbly clay loam, yellowish red (5YR 4/6) moist; 32 percent clay; moderate fine and medium subangular blocky structure; moderately hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine to medium tubular pores; 90 percent continuous distinct clay films; 5 percent stones, 5 percent gravel, and 10 percent cobbles; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.
- Bt3—12 to 20 inches (30 to 51 cm); reddish yellow (5YR 6/6) cobbly clay loam, yellowish red (5YR 4/6) moist; 36 percent clay; strong fine and medium subangular blocky structure; moderately hard, friable, moderately sticky, moderately plastic; common very fine to coarse roots; many very fine to medium tubular pores; 90 percent continuous distinct clay films; 5 percent stones, 8 percent gravel, and 10 percent cobbles; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.
- Bt4—20 to 26 inches (51 to 67 cm); reddish yellow (5YR 6/6) gravelly clay, yellowish red (5YR 5/6) moist; 40 percent clay; strong fine and medium subangular blocky structure; moderately hard, friable, moderately sticky, moderately plastic; few very fine to coarse roots; many very fine to medium and common coarse tubular pores; 90 percent continuous distinct clay films; 5 percent stones, 5 percent cobbles, and 8 percent gravel; neutral, pH 6.7 by Hellige-Truog; abrupt smooth boundary.

Crt—26 inches (67 cm); light greenish gray (5GY 7/1), weakly cemented ultramafic bedrock, light greenish gray (5G 7/1) moist; few very fine and fine roots; 20 percent continuous distinct clay films; neutral, pH 7.0 by Hellige-Truog.

Type location: Butte County, California; about 1.12 miles east of Concow School, approximately 600 feet north and 800 feet west of the southeast corner of sec. 27, T. 22 N., R. 4 E.; 39 degrees, 43 minutes, 39 seconds north latitude and 121 degrees, 30 minutes, 28 seconds west longitude; NAD83; USGS Quad: Cherokee, California.

Range in Characteristics

The depth to paralithic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 54 to 59 degrees F (12 to 15 degrees C). The particle-size control section averages 27 to 35 percent clay and 15 to 35 percent rock fragments, mostly gravel. Mineralogy is mixed but is affected by a high content of magnesium-rich minerals in the series control section. Rock fragments on the surface range from 0 to 60 percent gravel, 0 to 30 percent cobbles, 0 to 20 percent stones, and 0 to 15 percent boulders.

The A horizon has dry color of 7.5YR 6/4, 7/3, or 7/6. Moist color is 7.5YR 4/3 or 5/4 or 5YR 4/6. Texture is gravelly sandy clay loam or gravelly loam. The content of clay ranges from 20 to 27 percent. The horizon has 7 to 25 percent gravel, 0 to 10 percent cobbles, 0 to 5 percent stones, and 0 to 5 percent boulders. Reaction is slightly acid or neutral.

The upper part of the Bt horizon has dry color of 7.5YR 6/6, 7/4, or 7/6 or 5YR 6/6. Moist color is 7.5YR 4/6, 5/4, or 5/6 or 5YR 4/6 or 5/6. Texture is gravelly clay loam, cobbly clay loam, stony sandy clay loam, gravelly sandy clay loam, or cobbly sandy clay loam. The content of clay ranges from 27 to 35 percent. The content of gravel is 5 to 30 percent, the content of cobbles is 0 to 20 percent, the content of stones is 0 to 5 percent, and the content of boulders is 0 to 5 percent. Reaction is slightly acid or neutral.

The lower part of the Bt horizon has dry color of 5YR 5/6, 6/6, or 7/6 or 7.5YR 7/6. Moist color is 5YR 4/6, 5/6, or 5/8 or 7.5YR 5/8. Texture is gravelly clay loam, cobbly clay loam, very cobbly clay loam, cobbly sandy clay loam, gravelly clay, or cobbly clay. The content of clay ranges from 30 to 50 percent. The content of gravel is 5 to 30 percent, the content of cobbles is 5 to 25 percent, the content of stones is 0 to 5 percent, and the content of boulders is 0 to 5 percent. Reaction is slightly acid or neutral.

Minniecreek Series

The Minniecreek series consists of moderately deep, well drained soils that formed in colluvium and residuum derived from metavolcanic rocks, mainly greenschist. These soils are on metamorphic Sierra Nevada foothills. Slopes range from 2 to 70 percent. The mean annual precipitation is about 48 inches (1,219 mm), and the mean annual air temperature is about 57 degrees F (14 degrees C).

Taxonomic class: Fine-loamy, mixed, active, mesic Ultic Haploxeralfs

Typical Pedon

Minniecreek loam, on a north-facing slope of 43 percent, under a cover of whiteleaf manzanita, interior live oak, Pacific madrone, ponderosa pine, and California black oak, at an elevation of 2,160 feet (658 m). When described on 8/17/2000, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); light yellowish brown (10YR 6/4) loam, dark yellowish brown (10YR 4/4) moist; 20 percent clay; strong medium granular structure; slightly hard, friable, nonsticky, slightly plastic; many fine roots; many very fine

- irregular pores; 10 percent subangular gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.
- BAt—2 to 8 inches (5 to 20 cm); very pale brown (10YR 7/4) loam, brown (7.5YR 5/4) moist; 22 percent clay; moderate fine subangular blocky structure; slightly hard, friable, nonsticky, slightly plastic; common fine and few medium roots; common very fine tubular pores; 5 percent discontinuous distinct clay films on faces of peds; 5 percent subangular gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.
- Bt1—8 to 15 inches (20 to 38 cm); pink (7.5YR 7/4) loam, strong brown (7.5YR 4/6) moist; 25 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common fine and few medium roots; common very fine tubular pores; 15 percent discontinuous distinct clay films on faces of peds; 5 percent subangular gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.
- Bt2—15 to 24 inches (38 to 61 cm); light reddish brown (5YR 6/4) silty clay loam, yellowish red (5YR 4/6) moist; 30 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; common fine and few medium roots; common very fine tubular pores; 10 percent continuous distinct clay films on surfaces along pores and 20 percent continuous distinct clay films on faces of peds; moderately acid, pH 6.0 by Hellige-Truog; clear wavy boundary.
- BCt—24 to 32 inches (61 to 81 cm); reddish yellow (7.5YR 7/6) silty clay loam, strong brown (7.5YR 5/6) moist; 37 percent clay; moderate fine subangular blocky structure; slightly hard, firm, moderately sticky, moderately plastic; few fine and medium and common coarse roots; many fine tubular pores; 20 percent continuous distinct clay films on faces of peds; strongly acid, pH 5.5 by Hellige-Truog; gradual smooth boundary.
- Crt1—32 to 47 inches (81 to 119 cm); moderately cemented, weathered greenschist; common fine and few medium roots in cracks; 80 percent continuous prominent clay films; gradual smooth boundary.
- Crt2—47 to 58 inches (119 to 147 cm); moderately cemented, weathered greenschist; common fine and few medium roots in cracks; 80 percent continuous prominent clay films; gradual wavy boundary.
- Cr—58 to 75 inches (147 to 190 cm); moderately cemented greenschist bedrock; bedding plane tilted to 30 degrees; common medium roots around rocks.

Type location: Butte County, California; about 1.6 miles southeast of Bloomer Hill Lookout, approximately 1,500 feet west and 1,500 feet north of the southeast corner of sec. 31, T. 21 N., R. 5 E.; 39 degrees, 37 minutes, 47.91 seconds north latitude and 121 degrees, 27 minutes, 20.51 seconds west longitude; NAD83; USGS Quad: Berry Creek, California.

Range in Characteristics

The depth to paralithic bedrock is 20 to 40 inches. The mean annual soil temperature is 53 to 59 degrees F (12 to 14 degrees C). The soil moisture control section is dry in all parts from about June to October (about 120 days). The particle-size control section averages 25 to 30 percent clay with a silt content of as much as 50 percent, and it averages 2 to 35 percent rock fragments, mostly gravel. Mineralogy is mixed. The content of organic matter is 1 to 4 percent to a depth of 15 inches (38 cm) and is less than 1 percent below that depth. By sum of cations, base saturation ranges from 39 to 50 percent to a depth of 20 inches (51 cm) and is 50 to 75 percent below that depth. Rock fragments on the surface range from 0 to 40 percent gravel, 0 to 25 percent cobbles, 0 to 15 percent stones, and 0 to 10 percent boulders. Some pedons have a BA horizon. Some do not have a BCt horizon.

The A horizon has dry color of 10YR 5/3, 6/3, or 6/4 or 7.5YR 6/4 or 7/3. Moist color is 10YR 4/3 or 4/4 or 7.5YR 4/3 or 4/4. Texture is loam or gravelly loam with a high content of silt. The content of clay ranges from 15 to 20 percent. The horizon has 5 to 30 percent gravel and 0 to 5 percent cobbles. Reaction ranges from strongly acid to slightly acid.

The BA_t horizon has dry color of 10YR 6/4 or 7/4 or 7.5YR 7/3. Moist color is 5YR 6/6; 7.5YR 5/4, 5/6, or 6/4; or 10YR 4/4. Texture is loam, gravelly loam, or very gravelly loam with a high content of silt. The content of clay ranges from 18 to 22 percent. The horizon has 0 to 40 percent gravel and 0 to 5 percent cobbles. Reaction is moderately acid or slightly acid.

The B_t horizon has dry color of 7.5YR 6/4, 6/6, 7/3, 7/4, 8/4, or 8/6 or 5YR 4/4, 6/4, or 6/6. Moist color is 7.5YR 4/4, 4/6, or 5/4 or 5YR 4/4 or 4/6. Texture is loam, gravelly loam, or clay loam with a high content of silt, or it is silty clay loam. The content of clay ranges from 24 to 30 percent. The horizon has 0 to 30 percent gravel and 0 to 5 percent cobbles. Reaction is moderately acid or slightly acid.

The BC_t horizon has dry color of 7.5YR 7/4 or 7/6. Moist color is 7.5YR 5/6. Texture is silty clay loam or gravelly clay loam with a high content of silt. The content of clay ranges from 29 to 37 percent. The content of gravel is 0 to 20 percent. Reaction ranges from strongly acid to slightly acid.

Moda Taxadjunct

The Moda taxadjunct consists of moderately deep, somewhat poorly drained soils that formed in alluvium derived from mixed rock sources. These soils are in swales on low terraces. Slopes range from 0 to 2 percent. The mean annual precipitation is about 19 inches (483 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine, mixed, active, thermic Abruptic Durixeralfs

Typical Pedon

Moda taxadjunct loam, on a southwest-facing slope of 2 percent, under a cover of annual grasses and forbs, at an elevation of 107 feet (33 m). When described on 2/8/2001, the soil was slightly moist throughout. (Colors are for dry soil unless otherwise noted.)

A1—0 to 2 inches (0 to 5 cm); pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; 10 percent clay; moderate thin platy structure; slightly hard, very friable, nonsticky, nonplastic; few fine and many very fine roots; few very fine and fine irregular pores; 5 percent fine irregular oxidized iron masses lining pores; 10 percent well rounded gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.

A2—2 to 6 inches (5 to 15 cm); brown (10YR 5/3) loam, brown (10YR 4/3) moist; 20 percent clay; moderate fine subangular blocky structure; hard, friable, nonsticky, slightly plastic; few very fine roots; few very fine tubular pores; 2 percent very fine irregular oxidized iron masses lining pores; 10 percent well rounded gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

B_t1—6 to 13 inches (15 to 33 cm); pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; 25 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine roots; common very fine and fine tubular pores; 20 percent discontinuous distinct clay films; 5 percent well rounded gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

2B_t2—13 to 22 inches (33 to 56 cm); brown (7.5YR 5/4) clay, brown (7.5YR 5/3) moist; 45 percent clay; weak medium prismatic structure parting to moderate fine angular blocky; very hard, very firm, very sticky, very plastic; few very fine roots;

few very fine tubular pores; 50 percent continuous distinct clay films; 2 percent well rounded gravel; neutral, pH 7.0 by Hellige-Truog; abrupt smooth boundary. 2Bkqm—22 inches (56 cm); indurated duripan; cemented by silica; common very fine roots on top of the horizon; 15 percent very fine irregular manganese masses at the top of the horizon; strongly effervescent.

Type location: Butte County, California; about 3.4 miles southeast of the Rancho Llano Seco headquarters, approximately 300 feet east of the Mt. Diablo meridian and 11,260 feet north of the Butte-Glenn County line; in an unsectionized area in the Llano Seco Land Grant; 39 degrees, 34 minutes, 3 seconds north latitude and 121 degrees, 54 minutes, 47 seconds west longitude; NAD27; USGS Quad: Llano Seco, California.

Range in Characteristics

Depth to an indurated duripan is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The particle-size control section averages 35 to 50 percent clay and 2 to 10 percent rock fragments, mostly gravel. Mineralogy is mixed. The content of organic matter is estimated to be 0.5 to 0.8 percent to a depth of 6 inches (15 cm) and less than 0.5 percent below that depth. By sum of cations, base saturation is assumed to be more than 75 percent throughout the profile. A fluctuating water table can occur between the top of the duripan and the surface of the soil from December through April. Redoximorphic features, such as soft oxidized iron masses with color of 7.5YR 4/4, 4/6, or 5/6 and manganese masses with color of N 2/0, occur throughout the profile. Rock fragments on the surface range from 0 to 10 percent gravel.

The A horizon has dry color of 10YR 5/2, 5/3, or 6/3. Moist color is 10YR 3/2, 3/3, or 4/3. Texture is loam. The content of clay ranges from 10 to 20 percent. The content of gravel is 5 to 10 percent. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 10YR 6/2 or 6/3 or 7.5YR 6/4. Moist color is 10YR 3/4, 4/2, or 4/3 or 7.5YR 5/4. Texture is loam, sandy clay loam, or clay loam. The content of clay ranges from 24 to 30 percent. The content of gravel is 5 to 10 percent. Reaction is slightly acid or neutral.

The 2Bt horizon has dry color of 7.5YR 5/4 or 6/4. Moist color is 7.5YR 4/4, 5/3, or 5/4. Texture is clay. The content of clay ranges from 45 to 50 percent. The content of gravel is 0 to 10 percent. Reaction ranges from neutral to moderately alkaline.

The 2Bkqm horizon has dry color of 10YR 7/4. Moist color is 10YR 4/4 or 4/6. An indurated silica and lime capping ranges from 0.06 to 0.12 inch in thickness.

Some pedons have a flood deposit of silt loam about 0.25 inch (0.6 cm) thick on the surface.

The Moda taxadjunct is a taxadjunct because the mineralogy is most likely mixed rather than vermiculitic. This difference does not significantly affect the use, management, or interpretations of the soils.

Mounthope Series

The Mounthope series consists of deep, well drained soils that formed in colluvium and residuum derived from metasedimentary rocks, metavolcanic rocks (mainly greenschist), and intrusive igneous rocks (mainly quartz diorite and gabbro). These soils are on ridgetops and side slopes on Sierra Nevada foothills. Slopes range from 2 to 100 percent. The mean annual precipitation is about 43 inches (1,092 mm), and the mean annual air temperature is about 58 degrees F (14 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Ultic Haploxeralfs

Typical Pedon

Mounthope loam, on a southeast-facing slope of 27 percent, under a cover of whiteleaf manzanita, toyon, buckbrush, interior live oak, blue oak, foothill pine, and Pacific poison oak, at an elevation of 1,640 feet (500 m). When described on 11/20/2000, the soil was slightly moist throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 3 cm); slightly decomposed plant material.

A—1 to 3 inches (3 to 8 cm); brown (7.5YR 5/4) loam, reddish brown (5YR 4/4) moist; 20 percent clay; moderate medium subangular blocky structure parting to moderate fine granular; slightly hard, very friable, nonsticky, slightly plastic; few very fine roots; common fine and medium irregular pores; 5 percent subangular metavolcanic gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

Bt1—3 to 7 inches (8 to 18 cm); yellowish red (5YR 5/6) loam, reddish brown (5YR 4/4) moist; 24 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common fine, few medium, and many coarse roots; common fine and few medium tubular pores; 5 percent discontinuous distinct clay films on surfaces along pores and 20 percent discontinuous distinct clay films on faces of peds; 10 percent subangular metavolcanic gravel; slightly acid, pH 6.2 by Hellige-Truog; abrupt smooth boundary.

Bt2—7 to 15 inches (18 to 38 cm); yellowish red (5YR 5/6) loam, reddish brown (5YR 4/4) moist; 26 percent clay; moderate medium subangular blocky structure; hard, friable, slightly sticky, moderately plastic; common fine and medium and few coarse roots throughout; common fine tubular pores; 10 percent discontinuous distinct clay films on surfaces along pores and 20 percent discontinuous distinct clay films on all faces of peds; 5 percent subangular metavolcanic gravel; slightly acid, pH 6.2 by Hellige-Truog; clear wavy boundary.

Bt3—15 to 22 inches (38 to 56 cm); yellowish red (5YR 5/6) gravelly clay loam, yellowish red (5YR 4/6) moist; 28 percent clay; moderate medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; few fine and medium roots; common fine and medium tubular pores; 10 percent discontinuous distinct clay films on surfaces along pores and 25 percent discontinuous distinct clay films on faces of peds; 25 percent subangular metavolcanic gravel; slightly acid, pH 6.3 by Hellige-Truog; gradual wavy boundary.

Bt4—22 to 26 inches (56 to 66 cm); yellowish red (5YR 5/6) gravelly clay loam, yellowish red (5YR 4/6) moist; 29 percent clay; moderate fine subangular blocky structure; hard, firm, moderately sticky, moderately plastic; few fine and medium roots; few fine tubular pores; 10 percent discontinuous distinct clay films on surfaces along pores and 35 percent discontinuous distinct clay films on faces of peds; 30 percent subangular metavolcanic gravel; slightly acid, pH 6.3 by Hellige-Truog; gradual wavy boundary.

Bt5—26 to 31 inches (66 to 79 cm); yellowish red (5YR 5/6) very gravelly clay loam, yellowish red (5YR 4/6) moist; 31 percent clay; moderate medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; few fine and medium roots; common fine and medium tubular pores; 15 percent discontinuous distinct clay films on surfaces along pores and 35 percent discontinuous distinct clay films on faces of peds; 50 percent subangular metavolcanic gravel; slightly acid, pH 6.4 by Hellige-Truog; gradual wavy boundary.

Bt6—31 to 42 inches (79 to 107 cm); yellowish red (5YR 5/6) very gravelly clay loam, yellowish red (5YR 4/6) moist; 28 percent clay; moderate fine subangular blocky structure; slightly hard, firm, moderately sticky, moderately plastic; few fine roots; few fine tubular pores; 10 percent discontinuous distinct clay films on surfaces along pores and 35 percent discontinuous distinct clay films on faces of peds; 50

percent subangular metavolcanic gravel; slightly acid, pH 6.3 by Hellige-Truog; clear smooth boundary.

Bt7—42 to 52 inches (107 to 132 cm); reddish yellow (5YR 6/6) gravelly clay loam, yellowish red (5YR 4/6) moist; 30 percent clay; weak fine subangular blocky structure; slightly hard, firm, moderately sticky, moderately plastic; few fine roots; few fine tubular pores; 5 percent discontinuous distinct clay films on surfaces along pores and 15 percent discontinuous distinct clay films on faces of peds; 30 percent subangular metavolcanic gravel; slightly acid, pH 6.4 by Hellige-Truog; gradual smooth boundary.

Cr—52 inches (132 cm); moderately cemented greenschist bedrock.

Type location: Butte County, California; about 5.1 miles northeast of Oroville Dam, approximately 1,600 feet east and 1,050 feet south of the northwest corner of sec. 7, T. 20 N., R. 5 E.; 39 degrees, 36 minutes, 34.15 seconds north latitude and 121 degrees, 27 minutes, 33.20 seconds west longitude; NAD83; USGS Quad: Oroville Dam, California.

Range in Characteristics

The depth to paralithic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 59 to 63 degrees F (15 to 17 degrees C). The soil moisture control section is dry in all parts from about May to October (about 150 to 200 days). The particle-size control section averages 20 to 27 percent clay and 10 to 35 percent rock fragments, mostly gravel. Mineralogy is mixed. The content of organic matter is 1 to 3.5 percent to a depth of 15 inches (38 cm) and less than 1 percent from 15 to 52 inches (38 to 132 cm). Rock fragments on the surface range from 0 to 15 percent gravel, 0 to 10 percent cobbles, 0 to 15 percent stones, and 0 to 15 percent boulders.

The A horizon has dry color of 7.5YR 5/4, 6/4, 7/4, or 5/6 or 5YR 7/6. Moist color is 5YR 4/4 or 5/4 or 7.5YR 3/4 or 4/3. Texture is loam or gravelly loam with a high content of silt. The content of clay ranges from 17 to 25 percent. The content of gravel is 0 to 30 percent. Reaction ranges from moderately acid to neutral.

The upper part of the Bt horizon has dry color of 5YR 5/6 or 7.5YR 5/6. Moist color is 5YR 4/4 or 7.5YR 3/4. Texture is gravelly loam or loam. The content of clay ranges from 20 to 27 percent. The content of gravel is 0 to 10 percent. Reaction is slightly acid or moderately acid.

The lower part of the Bt horizon has dry color of 5YR 7/4, 4/6, 5/6, 6/6, or 7/6; 7.5YR 5/6, 6/6, 7/6, or 7/4; or 2.5YR 5/6, 6/6, or 7/6. Moist color is 5YR 3/4, 4/4, 4/6, 5/6, 5/8, or 8/4; 7.5YR 3/4, 4/4, or 4/6; or 2.5YR 4/6, 4/8, or 5/8. Texture is clay loam, very gravelly loam, gravelly clay loam, or very gravelly clay loam with a high content of silt. The content of clay ranges from 20 to 35 percent. The content of gravel is 5 to 50 percent, and the content of cobbles is 0 to 25 percent. Reaction is moderately acid or slightly acid.

The BCt horizon, where it occurs, has dry color of 7.5YR 5/6. Moist color is 5YR 4/6. Texture is extremely gravelly loam, extremely gravelly clay loam, or extremely gravelly clay with a high content of silt. The content of clay ranges from 25 to 27 percent in the upper part of the horizon and from 25 to 40 percent in the lower part. The horizon has 60 to 70 percent gravel and 0 to 20 percent cobbles. Reaction is moderately acid or slightly acid.

Mountyana Series

The Mountyana series consists of very deep, well drained soils that formed in weathered tephra over residuum derived from volcanic rocks. These soils are on volcanic ridges in the Cascade Mountains. Slopes range from 2 to 30 percent. The

mean annual precipitation is about 72 inches (1,829 mm), and the mean annual air temperature is about 53 degrees F (12 degrees C).

Taxonomic class: Fine-loamy, isotic, mesic Andic Haplohumults

Typical Pedon

Mountyana gravelly loam, on a southeast-facing slope of 10 percent, under a cover of mixed conifers, at an elevation of 3,640 feet (1,110 m). When described on 11/27/1995, the soil was dry throughout. (Colors are for dry soil unless otherwise noted).

Oi—0 to 1 inch (0 to 3 cm); pine litter.

Oe—1 to 2 inches (3 to 5 cm); partially decomposed pine litter.

A—2 to 5 inches (5 to 13 cm); reddish brown (5YR 5/4) gravelly loam, dark reddish brown (5YR 3/3) moist; 22 percent clay; strong fine and medium granular structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine to medium roots; many very fine to coarse irregular pores; noneffervescent; 1 percent cobbles and 30 percent gravel; moderately acid, pH 5.9 by pH meter 1:1 water; NaF pH 10.4; clear smooth boundary.

Bt1—5 to 9 inches (13 to 23 cm); reddish brown (5YR 5/4) gravelly loam, dark reddish brown (5YR 3/4) moist; 24 percent clay; strong fine and medium granular structure; slightly hard, friable, slightly sticky, moderately plastic; many very fine to medium roots; many very fine to coarse irregular pores; many distinct discontinuous clay films on faces of peds; noneffervescent; 2 percent cobbles and 18 percent gravel; moderately acid, pH 5.8 by pH meter 1:1 water; NaF pH 10.1; clear smooth boundary.

Bt2—9 to 14 inches (23 to 36 cm); reddish brown (5YR 5/4) gravelly clay loam, reddish brown (5YR 4/4) moist; 28 percent clay; moderate fine and medium granular structure; moderately hard, firm, slightly sticky, moderately plastic; many very fine to medium and common coarse roots; many very fine to coarse irregular pores; many distinct discontinuous clay films on faces of peds; noneffervescent; 2 percent cobbles and 18 percent gravel; moderately acid, pH 5.8 by meter 1:1 water; NaF pH 9.9; clear smooth boundary.

Bt3—14 to 19 inches (36 to 48 cm); reddish brown (5YR 5/4) gravelly clay loam, yellowish red (5YR 4/6) moist; 30 percent clay; moderate medium and coarse subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; common very fine, fine, and coarse and many medium roots; many very fine to coarse irregular pores; many distinct discontinuous clay films on faces of peds and in pores; noneffervescent; 2 percent cobbles and 15 percent gravel; moderately acid, pH 5.7 by pH meter 1:1 water; NaF pH 9.9; clear smooth boundary.

Bt4—19 to 26 inches (48 to 66 cm); brown (7.5YR 5/4) gravelly clay loam, yellowish red (5YR 4/6) moist; 33 percent clay; moderate medium and coarse subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; common very fine to coarse roots; many very fine and fine and common medium and coarse irregular pores; many distinct continuous clay films on faces of peds and in pores; noneffervescent; 2 percent cobbles and 15 percent gravel; strongly acid, pH 5.4 by pH meter 1:1 water; NaF pH 9.9; clear smooth boundary.

Bt5—26 to 38 inches (66 to 97 cm); brown (7.5YR 5/4) gravelly clay loam, yellowish red (5YR 4/6) moist; 33 percent clay; strong medium and coarse subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; few very fine, fine, and coarse and common medium roots; many very fine and fine and common medium and coarse tubular pores; many distinct discontinuous clay films on faces of peds and in pores; noneffervescent; 2 percent cobbles and 20 percent gravel; strongly acid, pH 5.3 by pH meter 1:1 water; NaF pH 9.9; clear irregular boundary.

Bt/Cr—38 to 53 inches (97 to 135 cm); brown (7.5YR 5/4) extremely gravelly clay loam, strong brown (7.5YR 4/6) moist; 28 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine and fine roots; many very fine and fine and common medium tubular pores; many distinct discontinuous clay films on faces of peds and in pores; noneffervescent; 40 percent gravel, 20 percent cobbles, and 10 percent stones; strongly acid, pH 5.3 by pH meter 1:1 water; NaF pH 9.6; clear smooth boundary.

Cr/Bt—53 to 66 inches (135 to 168 cm); brown (7.5YR 5/4) extremely gravelly loam, strong brown (7.5YR 4/6) moist; 24 percent clay; weak fine subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; few very fine and fine roots; many very fine and fine and common medium tubular pores; few distinct discontinuous clay films on faces of peds and in pores; noneffervescent; 30 percent gravel, 20 percent cobbles, and 20 percent stones; strongly acid, pH 5.2 by pH meter 1:1 water; NaF pH 9.6; clear irregular boundary.

Cr—66 to 72 inches (168 to 183 cm); moderately cemented mudflow breccia; few very fine and fine roots; common very fine and fine tubular pores; cracks occurring more than 4 inches (10 cm) apart.

Type location: Butte County, California; about 1 mile east-southeast of Ewalt Camp, approximately 100 feet south and 1,500 feet west of the northeast corner of sec. 2, T. 24 N., R. 3 E.; 39 degrees, 58 minutes, 26.4 seconds north latitude and 121 degrees, 36 minutes, 7.2 seconds west longitude; NAD27; USGS Quad: Stirling, California.

Range in Characteristics

The depth to paralithic bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 54 to 56 degrees F (12 to 13 degrees C). The soil moisture control section is dry in all parts from about July to October (about 90 days). The particle-size control section averages 18 to 35 percent clay and 2 to 25 percent rock fragments, mostly gravel. Mineralogy is isotic. Acid oxalate extractable Al plus $\frac{1}{2}$ Fe ranges from 1.88 to 1.61 to a depth of 9 inches (23 cm). Rock fragments on the surface range from 5 to 30 percent gravel.

The A horizon has dry color of 7.5YR 4/4, 6/3, or 6/4 or 5YR 5/4 or 6/6. Moist color is 5YR 3/2, 3/3, or 3/4 or 7.5YR 3/3, 3/4, or 4/3. Texture is gravelly loam, gravelly sandy loam, loam, or sandy loam. The content of clay ranges from 15 to 25 percent. The horizon has 2 to 30 percent gravel and 0 to 5 percent cobbles. The content of organic matter is 6 to 10 percent. By sum of cations, base saturation ranges from 25 to 35 percent. By ammonium acetate, CEC ranges from 20 to 30. NaF pH is 9.8 to 11. Reaction ranges from moderately acid to neutral.

The upper part of the Bt horizon has dry color of 5YR 5/4, 5/6, 6/4, or 6/6 or 7.5YR 5/4 or 6/6. Moist color is 5YR 3/3, 3/4, 4/4, 4/6, 5/4, 5/6, or 6/4 or 2.5YR 3/4, 4/4, or 4/6. Texture is gravelly loam, gravelly clay loam, loam, or clay loam. The content of clay ranges from 18 to 35 percent. The content of gravel is 2 to 20 percent, and the content of cobbles is 0 to 2 percent. The content of organic matter is 1 to 5 percent. By sum of cations, base saturation ranges from 30 to 37 percent. By ammonium acetate, CEC ranges from 14 to 22. NaF pH is 9.5 to 10.5. Reaction is moderately acid or slightly acid.

The lower part of the Bt horizon has dry color of 5YR 5/4, 5/6, 6/4, or 6/6; 7.5YR 5/4 or 6/6; or 10YR 6/6. Moist color is 5YR 4/4, 4/6, 5/4, 5/6, or 6/4; 7.5YR 4/4 or 5/6; or 10YR 4/4. Texture is gravelly clay loam, gravelly loam, gravelly sandy loam, clay loam, loam, or sandy loam. The content of clay ranges from 18 to 35 percent. The content of gravel is 2 to 25 percent, and the content of cobbles is 0 to 5 percent. The content of organic matter is 0.5 to 1 percent. By sum of cations, base saturation ranges from 19 to 26 percent. By ammonium acetate, CEC ranges from 10 to 15. NaF pH is 9.5 to 10. Reaction ranges from very strongly acid to slightly acid.

The Bt/Cr horizon has dry color of 7.5YR 5/4 or 10YR 7/6. Moist color is 7.5YR 4/6 or 10YR 6/8. Texture is extremely gravelly clay loam, very gravelly clay loam, extremely gravelly loam, very gravelly loam, or very cobbly loam. The content of clay ranges from 18 to 30 percent. The horizon has 20 to 50 percent gravel, 20 to 50 percent cobbles, and 0 to 20 percent stones. The content of organic matter is 0.1 to 1 percent. By sum of cations, base saturation ranges from 5 to 10 percent. By ammonium acetate, CEC ranges from 10 to 15. NaF pH is 9.2 to 9.6. Reaction is very strongly acid or strongly acid.

The Cr/Bt horizon has dry color of 7.5YR 5/4 or 10YR 7/6. Moist color is 7.5YR 4/6 or 10YR 6/8, 5/4, or 4/3. Texture is extremely gravelly or extremely cobbly loam. The content of clay ranges from 16 to 25 percent. The horizon has 20 to 50 percent gravel, 20 to 50 percent cobbles, and 0 to 20 percent stones. The content of organic matter is 0.1 to 1 percent. By sum of cations, base saturation ranges from 5 to 10 percent. By ammonium acetate, CEC ranges from 10 to 15. NaF pH is 9.0 to 9.6. Reaction is very strongly acid or strongly acid.

Mudwash Series

The Mudwash series consists of very deep, well drained soils that formed in tephra deposited over colluvium and residuum derived from basalt. These soils are on the tops and side slopes of basalt ridges on volcanic Sierra Nevada mountains. Slopes range from 0 to 50 percent. The mean annual precipitation is about 80 inches (2,032 mm), and the mean annual air temperature is about 51 degrees F (11 degrees C).

Taxonomic class: Medial over loamy, mixed over isotic, mesic Alfic Humic Haploxerands

Typical Pedon

Mudwash gravelly medial sandy loam, on a southwest-facing slope of 7 percent, under a cover of mixed conifers, at an elevation of 4,650 feet (1,417 m). When described on 10/7/1997, the soil was slightly moist from a depth of 4 to 52 inches (10 to 132 cm) and dry below a depth of 52 inches (132 cm). Clay percentages are based on the apparent field texture. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 2.54 cm); fresh litter.

Oa—1 to 4 inches (2.54 to 10 cm); decomposed litter.

A1—4 to 8 inches (10 to 20 cm); brown (7.5YR 4/2) gravelly medial sandy loam, dark brown (7.5YR 3/2) moist; 10 percent clay; moderate fine subangular blocky structure; slightly hard, very friable, nonsticky, nonplastic; common very fine to medium roots; many very fine irregular pores; 15 percent basalt gravel and 5 percent basalt cobbles; strongly acid, pH 5.4 by pH meter 1:1 water; NaF pH 10.5; abrupt smooth boundary.

A2—8 to 13 inches (20 to 33 cm); brown (7.5YR 4/2) gravelly medial sandy loam, dark brown (7.5YR 3/2) moist; 12 percent clay; weak fine subangular blocky structure; loose, very friable, nonsticky, nonplastic; common coarse and many fine and medium roots; many very fine irregular pores; 20 percent basalt gravel and 5 percent basalt cobbles; strongly acid, pH 5.4 by pH meter 1:1 water; NaF pH 10.5; clear smooth boundary.

Bw—13 to 26 inches (33 to 66 cm); brown (7.5YR 4/3) gravelly medial sandy loam, dark reddish brown (5YR 3/3) moist; 15 percent clay; moderate fine subangular blocky structure; loose, very friable, nonsticky, slightly plastic; common fine to coarse roots; many very fine irregular pores; 25 percent basalt gravel and 5 percent basalt cobbles; strongly acid, pH 5.1 by pH meter 1:1 water; NaF pH 10.0; clear wavy boundary.

- 2Bt1—26 to 35 inches (66 to 89 cm); grayish brown (10YR 5/2) gravelly loam, dark brown (7.5YR 3/2) moist; 22 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common fine to coarse roots; many very fine tubular pores; few distinct continuous clay films on faces of peds; 20 percent rounded basalt gravel; strongly acid, pH 5.1 by pH meter 1:1 water; NaF pH 9.3; clear smooth boundary.
- 2Bt2—35 to 52 inches (89 to 132 cm); brown (10YR 5/3) gravelly loam, dark brown (10YR 3/3) moist; 25 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few fine and medium roots; many very fine and common fine tubular pores; common distinct continuous clay films on faces of peds; 20 percent rounded basalt gravel; strongly acid, pH 5.3 by pH meter 1:1 water; NaF pH 9.4; abrupt smooth boundary.
- 2BCt—52 to 72 inches (132 to 183 cm); brown (10YR 5/3) extremely gravelly loam, dark brown (10YR 3/3) moist; 24 percent clay; weak fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few fine and medium roots; common very fine tubular pores; few distinct continuous clay films on faces of peds; 80 percent rounded basalt gravel; strongly acid, pH 5.4 by pH meter 1:1 water; NaF pH 9.3; gradual smooth boundary.
- 2Cr—72 to 89 inches (183 to 226 cm); moderately cemented basalt bedrock; few fine roots; white and yellow concretions and manganese stains; no fractures.

Type location: Plumas County, California; about 1.6 miles southeast of Cascade, approximately 450 feet west and 500 feet south of the northeast corner of sec. 14, T. 21 N., R. 7 E.; 39 degrees, 41 minutes, 9.3 seconds north latitude and 121 degrees, 9 minutes, 21.9 seconds west longitude; NAD83; USGS Quad: Cascade, California.

Range in Characteristics

The depth to paralithic bedrock (basalt, mudflow, or volcanoclastic material) is more than 60 inches (152 cm). The mean annual soil temperature is 47 to 54 degrees F (8 to 12 degrees C). The soil moisture control section is dry in all parts from about July to September (about 90 days). The particle-size control section averages 11 to 30 percent clay and 5 to 27 percent rock fragments in the medial part and 23 to 35 percent clay and 5 to 20 percent rock fragments in the loamy part. Mineralogy is mixed over isotic. Rock fragments on the surface range from 0 to 20 percent gravel and 0 to 25 percent cobbles. Some pedons have a C horizon and/or do not have a 2BCt horizon.

The A horizon has dry color of 10YR 4/2 or 4/3; 7.5YR 4/2, 4/3, or 4/4; or 5YR 4/6, 5/3, or 5/4. Moist color is 10YR 2/1 or 2/2, 7.5YR 3/2 or 3/3, or 5YR 3/2, 3/3, or 3/4. Texture is gravelly medial sandy loam, gravelly medial loam, medial sandy loam, or medial loam. The content of clay ranges from 8 to 18 percent. The horizon has 5 to 20 percent gravel and 5 to 10 percent cobbles. The content of organic matter is 5 to 10 percent. By sum of cations, base saturation ranges from 15 to 20 percent. NaF pH is 10.0 to 11.5. Acid oxalate extractable Al plus $\frac{1}{2}$ Fe ranges from 2.2 to 2.5. P retention ranges from 90 to 92. Reaction ranges from slightly acid to strongly acid.

The Bw horizon has dry color of 7.5YR 4/3 or 5/3 or 5YR 4/6 or 5/4. Moist color is 7.5YR 3/2, 3/4, or 4/2 or 5YR 3/3, 4/3, or 4/4. Texture is gravelly medial sandy loam, gravelly medial loam, medial sandy loam, or medial loam. The content of clay ranges from 12 to 22 percent. The horizon has 5 to 25 percent gravel and 0 to 5 percent cobbles. The content of organic matter is 5 to 9 percent. By sum of cations, base saturation ranges from 10 to 25 percent. NaF pH is 10.5 to 11. Acid oxalate extractable Al plus $\frac{1}{2}$ Fe ranges from 2.0 to 2.5. P retention ranges from 85 to 90. Reaction ranges from slightly acid to very strongly acid.

The 2Bt horizon has dry color of 10YR 4/3, 5/2, 5/3, or 8/4; 7.5YR 4/3, 5/3, or 5/4; 5YR 4/4 or 4/6; or 2.5YR 4/6. Moist color is 10YR 3/3; 7.5YR 3/2, 3/3, 4/2, 4/3, or 4/6; 5YR 3/2, 3/3, 4/3, or 4/4; or 2.5YR 3/6 or 4/6. Texture is gravelly loam, loam, sandy

loam, clay loam, sandy clay loam, silty clay loam, gravelly sandy clay loam, or cobbly loam. The content of clay ranges from 18 to 38 percent. The content of gravel is 0 to 20 percent. The content of cobbles also is 0 to 20 percent. The content of organic matter is 0.8 to 5 percent. By sum of cations, base saturation ranges from 50 to 70 percent. NaF pH is 9.3 to 11.3. Acid oxalate extractable Al plus $1/2$ Fe ranges from 1.0 to 1.8. P retention ranges from 55 to 70. Reaction ranges from slightly acid to extremely acid.

The 2BCt horizon has dry color of 10YR 4/2, 5/3, or 6/3 or 7.5YR 5/3 or 6/3. Moist color is 10YR 3/1, 3/3, 4/3, 4/4, or 5/2 or 7.5YR 4/2, 4/3, or 4/4. Texture is extremely gravelly loam, gravelly sandy loam, loam, coarse sandy loam, sandy clay loam, or silty clay loam. The content of clay ranges from 15 to 28 percent. The content of gravel is 5 to 80 percent. The content of organic matter is 0.8 to 1 percent. By sum of cations, base saturation ranges from 50 to 70 percent. NaF pH is 9.3 to 10.5. Acid oxalate extractable Al plus $1/2$ Fe ranges from 0.7 to 1. P retention ranges from 50 to 60. Reaction ranges from moderately acid to extremely acid.

Munjar Series

The Munjar series consists of moderately deep, moderately well drained soils that formed in alluvium derived from dominantly volcanic rocks. These soils are on bars on fan terraces. Slopes range from 0 to 2 percent. The mean annual precipitation is about 25 inches (635 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Loamy-skeletal, mixed, superactive, thermic Typic Durixeralfs

Typical Pedon

Munjar gravelly loam, on a southwest-facing slope of 1 percent, under a cover of annual grasses, at an elevation of 275 feet (84 m). When described on 4/10/1999, the soil was dry to a depth of 9 inches (23 cm) and slightly moist from 9 to 46 inches (23 to 117 cm). (Colors are for dry soil unless otherwise noted.)

- A—0 to 2 inches (0 to 5 cm); light brown (7.5YR 6/4) gravelly loam, brown (7.5YR 4/3) moist; 20 percent clay; strong fine and medium subangular blocky structure parting to strong fine granular; hard, friable, slightly sticky, slightly plastic; many very fine roots; many very fine and fine vesicular and tubular pores; 15 percent andesite gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.
- Bt1—2 to 5 inches (5 to 13 cm); light brown (7.5YR 6/4) gravelly loam, brown (7.5YR 4/3) moist; 23 percent clay; moderate medium platy structure parting to moderate medium and coarse subangular blocky; hard, friable, slightly sticky, slightly plastic; common very fine roots; few medium and coarse and common very fine vesicular and tubular pores; 80 percent continuous distinct clay films on faces of peds; 30 percent andesite gravel; neutral, pH 6.7 by Hellige-Truog; clear smooth boundary.
- Bt2—5 to 9 inches (13 to 23 cm); light brown (7.5YR 6/4) gravelly loam, brown (7.5YR 4/3) moist; 26 percent clay; moderate fine and medium subangular blocky structure; hard, friable, slightly sticky, slightly plastic; common very fine roots; few medium and many very fine vesicular and tubular pores; 100 percent continuous distinct clay films on faces of peds; 2 percent andesite cobbles and 15 percent andesite gravel; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.
- Bt3—9 to 16 inches (23 to 41 cm); brown (7.5YR 5/4) gravelly loam, brown (7.5YR 4/3) moist; 24 percent clay; moderate fine and medium subangular blocky structure; hard, friable, slightly sticky, slightly plastic; common very fine roots; many very fine to medium vesicular and tubular pores; 100 percent continuous distinct clay films on faces of peds; 10 percent andesite cobbles and 20 percent andesite gravel; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.

- Bt4—16 to 22 inches (41 to 56 cm); brown (7.5YR 5/4) extremely gravelly clay loam, dark brown (7.5YR 3/4) moist; 28 percent clay; moderate fine and medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; common very fine roots; many very fine and fine and many medium vesicular and tubular pores; 100 percent continuous distinct clay films on faces of peds; 25 percent andesite cobbles and 40 percent andesite gravel; slightly alkaline, pH 7.4 by Hellige-Truog; abrupt smooth boundary.
- 2Btq—22 to 31 inches (56 to 79 cm); brown (7.5YR 5/4) extremely cobbly sandy clay, dark brown (7.5YR 3/4) moist; 37 percent clay; massive; very hard, firm, noncemented, moderately sticky, moderately plastic; few very fine roots; common very fine to medium vesicular and tubular pores; 100 percent continuous distinct clay films on rock fragments; 35 percent andesite cobbles and 35 percent andesite gravel; slightly alkaline, pH 7.6 by Hellige-Truog; gradual smooth boundary.
- 2Btqm—31 to 46 inches (79 to 117 cm); strongly cemented duripan; brown (7.5YR 5/4) extremely gravelly sandy clay loam, brown (7.5YR 4/3) moist; 27 percent clay; massive; very hard, firm, strongly cemented by silica, moderately sticky, moderately plastic; few very fine roots; common very fine and fine vesicular and tubular pores; 100 percent continuous distinct clay films on rock fragments; 5 percent andesite stones, 35 percent andesite cobbles, and 40 percent andesite gravel; slightly alkaline, pH 7.8 by Hellige-Truog.

Type location: Butte County, California; about 6.3 miles northeast of Nord, approximately 1,100 feet west and 2,300 feet south of the northeast corner of sec. 7, T. 23 N., R. 1 E.; 39 degrees, 51 minutes, 47 seconds north latitude and 121 degrees, 53 minutes, 14 seconds west longitude; NAD27; USGS Quad: Nord, California.

Range in Characteristics

Depth to the extremely gravelly duripan is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The particle-size control section averages 27 to 30 percent clay and 35 to 45 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. A fluctuating water table can occur between the top of the duripan and 12 inches (30 cm) below the surface of the soil from December through April. Rock fragments on the surface range from 5 to 30 percent gravel.

The A horizon has dry color of 7.5YR 6/4. Moist color is 7.5YR 4/3 or 5YR 3/3. Texture is gravelly loam. The content of clay ranges from 20 to 24 percent. The content of gravel is 15 to 30 percent. The content of organic matter is 2 to 5 percent. Reaction is slightly acid or neutral.

The Bt1 horizon has dry color of 7.5YR 6/4 or 6/6. Moist color is 7.5YR 4/3 or 5YR 4/3. Texture is gravelly loam. The content of clay ranges from 23 to 24 percent. The content of gravel is 15 to 30 percent. The content of organic matter is 0.8 to 1.2 percent. Reaction is slightly acid or neutral.

The Bt2, Bt3, and Bt4 horizons have dry color of 7.5YR 5/4, 6/4, or 6/6 or 5YR 5/4. Moist color is 7.5YR 3/4 or 4/3 or 5YR 4/3. Texture is gravelly loam, extremely gravelly clay loam, very gravelly loam, or very cobbly clay loam. The content of clay ranges from 24 to 35 percent. The horizons have 15 to 40 percent gravel, 2 to 40 percent cobbles, and 0 to 5 percent stones. The content of organic matter is 0.5 to 0.8 percent. Reaction is neutral or slightly alkaline.

The 2Btq horizon has dry color of 7.5YR 5/4. Moist color is 7.5YR 3/4. Texture is extremely cobbly sandy clay. The content of clay ranges from 35 to 40 percent. The horizon has 30 to 35 percent gravel and 20 to 35 percent cobbles. The content of organic matter is 0 to 0.5 percent. Reaction is neutral or slightly alkaline.

The 2Btqm horizon has dry color of 7.5YR 5/4. Moist color is 7.5YR 3/4. Texture is extremely gravelly sandy clay loam. The content of clay ranges from 27 to 35 percent.

The horizon has 40 to 45 percent gravel, 10 to 35 percent cobbles, and 0 to 5 percent stones. Reaction is neutral or slightly alkaline.

Neerdobe Series

The Neerdobe series consists of moderately deep, poorly drained soils that formed in alluvium derived from mixed rock sources. These soils are in flood basins. Slopes are 0 to 1 percent. The mean annual precipitation is about 20 inches (508 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Fine, smectitic, thermic Xeric Duraquerts

Typical Pedon

Neerdobe clay, on a slope of less than 1 percent, under a cover of rice, at an elevation of 98 feet (30 m). When described on 5/3/1995, the soil was moist throughout. The water table was at a depth of 38 inches (97 cm). (Colors are for dry soil unless otherwise noted.)

- Ap—0 to 5 inches (0 to 13 cm); dark gray (10YR 4/1) clay, dark gray (10YR 4/1) moist; 57 percent clay; moderate medium subangular blocky structure parting to strong fine granular; extremely hard, very firm, moderately sticky, very plastic; few very fine and common fine roots; few fine irregular pores; noneffervescent; moderately acid, pH 5.8 by pH meter 1:1 water; abrupt smooth boundary.
- Bssg1—5 to 15 inches (13 to 38 cm); dark gray (10YR 4/1) clay, dark gray (10YR 4/1) moist; 55 percent clay; moderate medium prismatic structure parting to moderate fine angular blocky; extremely hard, very firm, moderately sticky, very plastic; few very fine roots; few very fine tubular pores; continuous slickensides; common fine irregular strong brown (7.5YR 4/6) oxidized iron masses and common fine and coarse threadlike gray (10YR 6/1) iron depletions; noneffervescent; slightly alkaline, pH 7.4 by pH meter 1:1 water; clear smooth boundary.
- Bssg2—15 to 23 inches (38 to 58 cm); dark gray (10YR 4/1) clay, dark gray (10YR 4/1) moist; 56 percent clay; moderate medium prismatic structure parting to moderate fine angular blocky; extremely hard, very firm, moderately sticky, very plastic; few very fine roots; few very fine tubular pores; many slickensides; common fine irregular strong brown (7.5YR 4/6) oxidized iron masses and common fine threadlike gray (10YR 6/1) iron depletions; noneffervescent; moderately alkaline, pH 7.9 by pH meter 1:1 water; clear smooth boundary.
- Bssg3—23 to 28 inches (58 to 71 cm); dark grayish brown (10YR 4/2) clay, dark gray (10YR 4/1) moist; 56 percent clay; moderate medium angular blocky structure; extremely hard, very firm, moderately sticky, very plastic; few very fine roots; few very fine tubular pores; common slickensides; common fine and medium spherical carbonate concretions; common fine irregular gray (10YR 6/1) and few fine spherical gray (N 5/0 dry) iron depletions; noneffervescent; moderately alkaline, pH 8.2 by pH meter 1:1 water; abrupt smooth boundary.
- Bk—28 to 33 inches (71 to 84 cm); light brownish gray (10YR 6/2) clay, grayish brown (10YR 5/2) moist; 55 percent clay; moderate fine angular blocky structure parting to strong fine angular blocky; slightly hard, friable, moderately sticky, very plastic; common very fine and few fine tubular pores; common fine irregular carbonate concretions and common fine irregular carbonate masses; common fine threadlike gray (10YR 6/1) iron depletions; strongly effervescent; strongly alkaline, pH 8.5 by pH meter 1:1 water; abrupt smooth boundary.
- 2Bkq—33 to 38 inches (84 to 97 cm); very pale brown (10YR 7/3) loam, brown (10YR 5/3) moist; 22 percent clay; strong thin platy structure; slightly hard, friable, weakly cemented, slightly sticky, slightly plastic; common fine and few very fine tubular pores; common fine threadlike gray (10YR 6/1 dry) iron depletions

between peds; strongly effervescent; strongly alkaline, pH 8.6 by pH meter 1:1 water; abrupt smooth boundary.

2Bkqm—38 to 56 inches (97 to 142 cm); indurated duripan; very pale brown (10YR 7/3) loam, brown (10YR 4/3) moist; 18 percent clay; strong thin platy structure; masses of silica; silica and lime threads throughout the duripan; slightly effervescent; strongly alkaline, pH 8.6 by pH meter 1:1 water.

Type location: Butte County, California; about 3 miles southwest of Nelson, approximately 2,200 feet east and 1,900 feet north of the southwest corner of sec. 7, T. 19 N., R. 2 E.; 39 degrees, 30 minutes, 48 seconds north latitude and 121 degrees, 47 minutes, 30 seconds west longitude; NAD27; USGS Quad: Nelson, California.

Range in Characteristics

Depth to the duripan is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 62 to 66 degrees F (17 to 19 degrees C). The soil moisture control section is dry from June to October (120 to 125 days). The particle-size control section averages 40 to 60 percent clay. By ammonium acetate, base saturation ranges from 90 to 100 percent throughout the profile. The depth to carbonates ranges from 15 to 38 inches (38 to 97 cm). SAR is 0 to 2 throughout the profile. The content of exchangeable sodium is 1 to 4 percent throughout the profile. Electrical conductivity is 0 to 1 mmho/cm throughout the profile. Reversible, surface-initiated cracks 1 to 3 inches (2.54 to 8 cm) wide extend to a depth of 20 to 36 inches (51 to 91 cm) from May 15 to October 15 (150 days) when the soils are not irrigated. Common or many slickensides are in the Bssg horizon. A fluctuating water table can occur from the top of the duripan to the surface of the soil from December through May. Redoximorphic features, such as manganese masses with color of N 2/0, oxidized iron masses with color of 7.5YR 4/4, and matrix chromas of 2 or less, occur in the horizons above the duripan. Some pedons have few or common manganese nodules. Some have overwash of silt loam 6 to 20 inches (15 to 51 cm) thick and may have strata of silt loam, very fine sandy loam, loamy very fine sand, sandy loam, fine sandy loam, or loam with 2 to 25 percent clay. Some pedons do not have calcium carbonate.

The Ap horizon has dry color of 10YR 3/1, 4/1, 4/2, or 5/2. Moist color is 10YR 3/1, 4/1, or 3/2. Texture is clay or clay loam. The content of clay ranges from 35 to 60 percent. The content of gravel is 0 to 2 percent. The content of organic matter is 1 to 2.5 percent. Reaction ranges from moderately acid to neutral.

The Bssg horizon has dry color of 10YR 3/1, 4/1, 4/2, or 5/2. Moist color is 10YR 3/1, 3/2, 4/1, or 4/2. Texture is silty clay or clay. The content of clay ranges from 40 to 60 percent. The content of organic matter is 0.5 to 1 percent. Reaction is slightly alkaline or moderately alkaline.

The Bk horizon has dry color of 10YR 4/1, 4/2, 5/1, 5/2, or 5/3. Moist color is 10YR 3/1, 3/2, 3/3, 4/2, or 4/3. Texture is clay or clay loam. The content of clay ranges from 35 to 60 percent. The content of organic matter is 0.1 to 0.5 percent. Effervescence ranges from slight to strong. Reaction is moderately alkaline or strongly alkaline.

The 2Bkq horizon has dry color of 10YR 7/3 or 8/3. Moist color is 10YR 4/3 or 5/3. Texture is loam. The content of clay ranges from 18 to 27 percent. The horizon is moderately cemented or strongly cemented with silica and lime. Effervescence is moderate or strong.

The 2Bkqm horizon has dry color of 10YR 4/3, 5/3, 6/3, 7/3, or 8/3. Moist color is 10YR 3/3, 4/3, or 5/3 or 7.5YR 4/4. The horizon is weakly cemented to indurated with silica. Effervescence ranges from slight to violent.

Obskel Series

The Obskel series consists of deep, well drained soils that formed in weathered tephra over residuum and colluvium derived from coarse grained metamorphic rocks, mainly metadiorite. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada mountains. Slopes range from 15 to 70 percent. The mean annual precipitation is about 75 inches (1,905 mm), and the mean annual air temperature is about 51 degrees F (11 degrees C).

Taxonomic class: Loamy-skeletal, isotic, mesic Andic Haploxerults

Typical Pedon

Obskel very gravelly sandy loam, on a west-southwest-facing slope of 25 percent, under a cover of mixed conifers, at an elevation of 4,340 feet (1,323 m). When described on 9/29/1997, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 0.5 inch (0 to 1 cm); needles and twigs.

Oe—0.5 to 1 inch (1 to 2 cm); partially decomposed needles and twigs.

A—1 to 4 inches (2 to 9 cm); light brown (7.5YR 6/4) very gravelly sandy loam, brown (7.5YR 4/3) moist; 12 percent clay; weak fine granular structure; soft, very friable, nonsticky, nonplastic; many very fine and fine roots; many very fine to coarse irregular and tubular pores; 40 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 10.0; clear smooth boundary.

Bt1—4 to 9 inches (9 to 22 cm); light brown (7.5YR 6/4) very gravelly sandy loam, brown (7.5YR 4/4) moist; 14 percent clay; weak fine and medium granular structure; soft, very friable, nonsticky, nonplastic; many very fine to medium roots; many very fine to coarse irregular and tubular pores; clay bridges between sand grains; 40 percent gravel; slightly acid, pH 6.4 by Hellige-Truog; NaF pH 9.8; clear smooth boundary.

Bt2—9 to 19 inches (22 to 47 cm); reddish yellow (7.5YR 7/6) very gravelly sandy loam, brown (7.5YR 4/4) moist; 17 percent clay; moderate fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; many very fine to medium and common coarse roots; many very fine to medium irregular and tubular pores; many faint continuous clay films on faces of peds; 35 percent gravel and 5 percent cobbles; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 9.8; clear smooth boundary.

Bt3—19 to 30 inches (47 to 77 cm); pink (7.5YR 7/4) very gravelly loam, reddish yellow (7.5YR 6/6) moist; 19 percent clay; moderate fine and medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; common very fine to medium and few coarse roots; many very fine to medium irregular and tubular pores; many faint continuous clay films on faces of peds; 25 percent gravel and 15 percent cobbles; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 9.5; gradual wavy boundary.

Bt4—30 to 56 inches (77 to 141 cm); yellow (10YR 8/6) very gravelly loam, yellow (10YR 7/8) moist; 18 percent clay; moderate fine and medium subangular blocky structure; soft, nonsticky, nonplastic; common very fine to medium and few coarse roots; many very fine and fine and common medium irregular and tubular pores; many faint continuous clay films on faces of peds; 30 percent gravel and 10 percent cobbles; moderately acid, pH 6.0 by Hellige-Truog; NaF pH 9.1; abrupt smooth boundary.

Cr—56 inches (141 cm); very weakly cemented metadiorite bedrock; roots occurring more than 4 inches (10 cm) apart; rock fractures occurring less than 4 inches (10 cm) apart.

Type location: Butte County, California; about 1 mile southwest of Inskip,

approximately 2,250 feet south and 600 feet east of the northwest corner of sec. 32, T. 25 N., R. 4 E.; 39 degrees, 58 minutes, 52.9 seconds north latitude and 121 degrees, 33 minutes, 23.5 seconds west longitude; NAD83; USGS Quad: Stirling, California.

Range in Characteristics

The depth to paralithic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 52 to 54 degrees F (11 to 12 degrees C). The soil moisture control section is dry in all parts from about July to October (about 90 days). The particle-size control section averages 12 to 18 percent clay and 35 to 65 percent rock fragments, mostly gravel. Mineralogy is isotic. Rock fragments on the surface range from 15 to 35 percent gravel, 0 to 25 percent cobbles, 0 to 20 percent stones, and 0 to 10 percent boulders. Some pedons have Bw and C horizons.

The A horizon has dry color of 5YR 5/3 or 7.5YR 5/4, 6/3, 6/4, or 7/3. Moist color is 5YR 3/3 or 7.5YR 4/2, 4/3, or 4/4. Texture is very gravelly or gravelly sandy loam. The content of clay ranges from 8 to 16 percent. The horizon has 15 to 40 percent gravel, 0 to 10 percent cobbles, and 0 to 5 percent stones. NaF pH is 9.8 to 11.0. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 5YR 4/6, 5/6, or 6/6; 7.5YR 6/3, 6/4, 7/4, or 7/6; or 10YR 5/6, 6/4, 6/6, 7/4, 7/6, 7/8, or 8/6. Moist color is 5YR 3/4, 4/4, or 4/6; 7.5YR 3/4, 4/2, 4/3, 4/4, 4/6, 5/4, 5/6, 6/6, or 6/8; or 10YR 4/4, 4/6, 5/4, 5/6, 5/8, or 7/8. Texture is sandy loam, gravelly sandy loam, very gravelly sandy loam, very cobbly sandy loam, very gravelly loam, very cobbly loam, gravelly sandy clay loam, or very gravelly sandy clay loam. The content of clay ranges from 10 to 24 percent. The horizon has 10 to 45 percent gravel, 0 to 20 percent cobbles, and 0 to 10 percent stones. NaF pH is 9.0 to 11.0. Reaction ranges from very strongly acid to slightly acid.

Obstruction Series

The Obstruction series consists of very deep, well drained soils that formed in weathered tephra over residuum and colluvium derived from coarse grained metamorphic rocks, mainly metadiorite. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada mountains. Slopes range from 3 to 70 percent. The mean annual precipitation is about 75 inches (1,905 mm), and the mean annual air temperature is about 51 degrees F (11 degrees C).

Taxonomic class: Fine-loamy, isotic, mesic Andic Haploxerults

Typical Pedon

Obstruction gravelly sandy loam, on a west-northwest-facing slope of 45 percent, under a cover of mixed conifers, at an elevation of 4,235 feet (1,291 m). When described on 11/29/1995, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 4 inches (0 to 10 cm); needles, twigs, and a partially decomposed log.

A—4 to 7 inches (10 to 18 cm); light brown (7.5YR 6/4) gravelly sandy loam, brown (7.5YR 4/4) moist; 17 percent clay; strong fine granular structure; soft, very friable, slightly sticky, nonplastic; many very fine and common fine roots; many very fine to medium and common coarse irregular pores; 25 percent subrounded gravel; moderately acid, pH 6.1 by pH meter 1:1 water; NaF pH 10.1; clear smooth boundary.

Bt1—7 to 11 inches (18 to 28 cm); light brown (7.5YR 6/4) gravelly sandy clay loam, brown (7.5YR 4/4) moist; 20 percent clay; moderate medium subangular blocky structure parting to strong fine granular; soft, very friable, slightly sticky, slightly plastic; many very fine and common fine and medium roots; many very fine and

- fine tubular and common medium and coarse irregular and tubular pores; many distinct discontinuous clay films on faces of peds and in pores; 25 percent gravel; slightly acid, pH 6.1 by pH meter 1:1 water; NaF pH 10.3; clear smooth boundary.
- Bt2—11 to 18 inches (28 to 46 cm); pink (7.5YR 7/4) gravelly fine sandy loam, reddish brown (5YR 4/4) moist; 19 percent clay; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; many very fine and common fine to coarse roots; many very fine and fine irregular and tubular and many medium and common coarse tubular pores; common distinct discontinuous clay films on faces of peds and in pores; 20 percent gravel and 3 percent cobbles; slightly acid, pH 6.1 by pH meter 1:1 water; NaF pH 9.9; clear smooth boundary.
- Bt3—18 to 25 inches (46 to 64 cm); reddish yellow (5YR 7/6) gravelly sandy clay loam, yellowish red (5YR 5/6) moist; 23 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine to medium roots; many very fine to medium and common coarse tubular pores; many distinct discontinuous clay films on faces of peds and in pores; 10 percent subrounded gravel and 5 percent rounded cobbles; slightly acid, pH 6.1 by pH meter 1:1 water; NaF pH 9.4; clear smooth boundary.
- Bt4—25 to 33 inches (64 to 84 cm); pink (5YR 7/4) sandy clay loam, yellowish red (5YR 5/6) moist; 21 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine and fine and common medium roots; many very fine and fine and common medium tubular pores; many distinct discontinuous clay films on faces of peds and in pores; 10 percent gravel; moderately acid, pH 5.8 by pH meter 1:1 water; NaF pH 9.2; abrupt smooth boundary.
- Bt5—33 to 44 inches (84 to 112 cm); reddish yellow (7.5YR 7/6) fine sandy loam, strong brown (7.5YR 5/6) moist; 18 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, nonplastic; many very fine and common fine and medium roots; many very fine and fine and common medium tubular pores; common distinct discontinuous clay films on faces of peds and in pores; 10 percent gravel; strongly acid, pH 5.5 by pH meter 1:1 water; NaF pH 9.1; abrupt wavy boundary.
- Bt6—44 to 64 inches (112 to 163 cm); reddish yellow (7.5YR 8/6) gravelly fine sandy loam, reddish yellow (7.5YR 6/8) moist; 11 percent clay; weak fine and medium subangular blocky structure; slightly hard, friable, nonsticky, nonplastic; common very fine to medium roots; many very fine and fine and common medium tubular pores; few distinct discontinuous and common faint discontinuous clay films on faces of peds and in pores; 18 percent gravel; strongly acid, pH 5.2 by pH meter 1:1 water; clear irregular boundary.
- Bt7—64 to 84 inches (163 to 213 cm); yellow (10YR 8/6) gravelly fine sandy loam, brownish yellow (10YR 6/8) moist; 5 percent clay; weak fine subangular blocky structure; slightly hard, friable, nonsticky, nonplastic; common very fine to medium roots; many very fine and common fine and medium tubular pores; few distinct discontinuous and common faint discontinuous clay films on faces of peds and in pores; 20 percent gravel; very strongly acid, pH 5.0 by pH meter 1:1 water; clear irregular boundary.
- Cr—84 to 89 inches (213 to 226 cm); moderately cemented metadiorite bedrock; massive; few very fine roots; few very fine tubular pores; cracks occurring more than 4 inches (10 cm) apart.

Type location: Butte County, California; about 1 mile south-southwest of Inskip Cemetery, approximately 1,350 feet north and 1,100 feet west of the southeast corner of sec. 5, T. 24 N., R. 4 E.; 39 degrees, 57 minutes, 43.2 seconds north latitude and 121 degrees, 32 minutes, 37.07 seconds west longitude; NAD27; USGS Quad: Stirling City, California.

Range in Characteristics

The depth to paralithic bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 47 to 54 degrees F (8 to 12 degrees C). The soil moisture control section is dry in all parts from about July to October (about 90 days). The particle-size control section averages 18 to 23 percent clay and 5 to 35 percent rock fragments, mostly gravel. Mineralogy is isotic. Acid oxalate extractable Al plus $\frac{1}{2}$ Fe ranges from 1 to 1.5 to a depth of 10 inches (25 cm). Rock fragments on the surface range from 5 to 35 percent gravel, 0 to 25 percent cobbles, 0 to 20 percent stones, and 0 to 10 percent boulders. Some pedons have hue of 2.5YR in the Bt horizon, and some have Bw and C horizons.

The A horizon has dry color of 5YR 4/3 or 6/4, 7.5YR 5/4 or 6/4, or 10YR 5/3 or 6/6. Moist color is 5YR 3/3 or 4/4; 7.5YR 4/3, 4/4, or 4/6; or 10YR 3/2. Texture is gravelly sandy loam, very gravelly sandy loam, gravelly loam, or very gravelly loam. The content of clay ranges from 10 to 20 percent. The horizon has 15 to 40 percent gravel, 0 to 10 percent cobbles, and 0 to 5 percent stones. The content of organic matter is 4 to 8 percent. By sum of cations, base saturation ranges from 25 to 35 percent. By ammonium acetate, CEC ranges from 15 to 20. NaF pH is 9.8 to 11.5. Reaction is moderately acid or slightly acid.

The upper part of the Bt horizon has dry color of 5YR 5/6, 6/4, 6/8, 7/4, or 7/6; 7.5YR 5/4, 5/6, 6/4, 6/6, 7/4, or 7/6; or 10YR 6/4, 7/4, or 7/6. Moist color is 5YR 3/4, 4/4, 4/6, or 5/6; 7.5YR 4/4, 4/6, 5/6, or 5/8; or 10YR 4/3, 4/4, 5/6, or 5/8. Texture is sandy loam, gravelly sandy loam, very gravelly sandy loam, sandy clay loam, gravelly fine sandy loam, fine sandy loam, gravelly sandy clay loam, loam, or gravelly loam. The content of clay ranges from 12 to 25 percent. The content of gravel is 5 to 30 percent, and the content of cobbles is 0 to 20 percent. The content of organic matter is 0.5 to 4 percent. By sum of cations, base saturation ranges from 25 to 40 percent. By ammonium acetate, CEC ranges from 8 to 13. NaF pH is 9.0 to 11.0. Reaction ranges from strongly acid to slightly acid.

The lower part of the Bt horizon has dry color of 5YR 5/6, 6/8, or 7/6; 7.5YR 4/6, 7/6, 7/8, or 8/6; or 10YR 5/6, 7/6, or 8/6. Moist color is 5YR 4/4 or 5/8, 7.5YR 5/6 or 6/8, or 10YR 4/4, 5/4, 5/6, 5/8, 6/8, or 7/6. Texture is sandy loam, gravelly sandy loam, very gravelly sandy loam, loam, gravelly loam, very gravelly loam, gravelly fine sandy loam, or fine sandy loam. The content of clay ranges from 5 to 20 percent. The content of gravel is 2 to 40 percent. The content of organic matter is 0.1 to 0.5 percent. By sum of cations, base saturation ranges from 5 to 35 percent. By ammonium acetate, CEC ranges from 6 to 11. NaF pH is 9.0 to 10.0. Reaction ranges from very strongly acid to slightly acid.

Olashes Series

The Olashes series consists of very deep, well drained soils that formed in alluvium derived from mixed rock sources. These soils are on alluvial fans and fan terraces. Slopes range from 0 to 5 percent. The mean annual precipitation is 17 inches (432 mm), and the mean annual air temperature is 62 degrees F (17 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Mollic Haploxeralfs

Typical Pedon

Olashes sandy loam, on a slope of less than 1 percent, in an irrigated prune orchard, at an elevation of 80 feet (24 m). When described on 9/26/1980, the soil was dry to a depth of 2 inches and moist below that depth. (Colors are for dry soil unless otherwise noted.)

- Ap—0 to 4 inches (0 to 10 cm); pale brown (10YR 6/3) sandy loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; few very fine roots; few very fine irregular pores; slightly acid, pH 6.2; clear smooth boundary.
- Bt1—4 to 14 inches (10 to 36 cm); pale brown (10YR 6/3) sandy clay loam, very dark brown (10YR 2/2) moist; weak medium subangular blocky structure; hard, very friable, sticky, plastic; few very fine roots; many very fine tubular pores; 2 percent gravel; many thin clay films in pores and bridging mineral grains; neutral, pH 6.6; clear wavy boundary.
- Bt2—14 to 31 inches (36 to 79 cm); light yellowish brown (10YR 6/4) sandy clay loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; hard, very friable, sticky, plastic; many very fine tubular pores; 5 percent gravel; many moderately thick clay films in pores and common thin clay films on faces of peds; neutral, pH 7.0; clear wavy boundary.
- Bt3—31 to 52 inches (79 to 132 cm); light yellowish brown (10YR 6/4) sandy clay loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; hard, very friable, slightly sticky, slightly plastic; few very fine tubular pores; 10 percent gravel; many moderately thick clay films in pores and bridging mineral grains; slightly alkaline, pH 7.5; clear smooth boundary.
- 2C—52 to 62 inches (132 to 157 cm); yellowish brown (10YR 5/4) sand, brown (10YR 4/3) moist; single grain; loose, nonsticky, nonplastic; many very fine irregular pores; 14 percent gravel; slightly alkaline, pH 7.5.

Type location: Sutter County, California; about 10.0 miles southwest of Pennington on West Butte Road, then 420 feet east into a prune orchard, approximately 1,100 feet north and 1,400 feet west of the southeast corner of sec. 18, T. 16 N., R. 1 E.; 39 degrees, 14 minutes, 7 seconds north latitude and 121 degrees, 53 minutes, 47 seconds west longitude; NAD27; USGS Quad: Meridian, California.

Range in Characteristics

The soils are more than 60 inches (152 cm) deep. The mean annual soil temperature ranges from 62 to 66 degrees F (17 to 19 degrees C). The soil temperature is above 47 degrees F (8 degrees C) the entire year. In nonirrigated areas, the soil between depths of 6 and 15 inches (15 and 38 cm) is dry in all parts from June through October and is moist in some or all parts from November through May. The content of gravel is 0 to 15 percent. Depth to the upper boundary of an argillic horizon is 4 to 12 inches (10 to 30 cm). Some pedons do not have a 2C horizon.

The A horizon has dry color of 10YR 6/3 or 6/2. Moist color is 10YR 4/2, 3/2, 3/3, or 2/2. The content of clay ranges from 15 to 20 percent. Reaction is slightly acid or neutral. The content of organic matter is more than 1 percent in the upper 4 inches (10 cm).

The Bt horizon has dry color of 10YR 6/2, 6/3, 6/4, 5/2, or 5/3. Moist color is 10YR 4/2, 4/3, 4/4, 3/3, 3/4, or 2/2 or 7.5YR 4/2 or 3/2. Texture is sandy clay loam, clay loam, or loam. The content of clay ranges from 20 to 35 percent. There is a 4 to 10 percent (absolute) increase in content of clay between the A horizon and the Bt horizon. Reaction is neutral or slightly alkaline.

Ordferry Series

The Ordferry series consists of moderately deep, poorly drained soils that formed in alluvium derived from mixed rock sources. These soils are on basin rims and in flood basins. Slopes are 0 to 1 percent. The mean annual precipitation is about 18

inches (457 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Fine, smectitic, thermic Xeric Duraquerts

Typical Pedon

Ordferry silty clay, on a slope of 1 percent, under a cover of pasture grasses and dock, at an elevation of 106 feet (32 m). When described on 6/5/1996, the soil was dry to a depth of 29 inches (74 cm). (Colors are for dry soil unless otherwise noted).

A1—0 to 3 inches (0 to 8 cm); light brownish gray (10YR 6/2) silty clay, dark grayish brown (10YR 4/2) moist; 50 percent clay; moderate fine subangular blocky structure parting to moderate fine granular; very hard, firm, moderately sticky, plastic; common very fine and fine roots; few very fine tubular pores; common fine strong brown (7.5YR 4/6) irregular oxidized iron masses and common fine black (N 2/0) irregular manganese masses; 1 percent well rounded gravel; slightly acid, pH 6.3 by Hellige-Truog; abrupt smooth boundary.

A2—3 to 6 inches (8 to 15 cm); light brownish gray (10YR 6/2) silty clay, dark grayish brown (10YR 4/2) moist; 50 percent clay; strong medium prismatic structure parting to moderate fine angular blocky; very hard, very firm, sticky, plastic; common very fine and fine roots; few very fine tubular pores; common fine strong brown (7.5YR 4/6) irregular oxidized iron masses and common fine black (N 2/0) irregular manganese masses; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

Bss1—6 to 13 inches (15 to 33 cm); light brownish gray (10YR 6/2) silty clay, grayish brown (10YR 5/2) moist; 55 percent clay; strong medium prismatic structure parting to moderate fine angular blocky; very hard, very firm, very sticky, very plastic; common very fine roots; few very fine tubular pores; many fine strong brown (7.5YR 4/6) irregular oxidized iron masses and many fine black (N 2/0) irregular manganese masses; few slickensides; neutral, pH 6.6 by Hellige-Truog; abrupt smooth boundary.

Bss2—13 to 25 inches (33 to 64 cm); light brownish gray (10YR 6/2) silty clay, grayish brown (10YR 5/2) moist; 60 percent clay; weak medium prismatic structure parting to moderate fine angular blocky; very hard, very firm, very sticky, very plastic; few very fine roots; few very fine tubular pores; common fine strong brown (7.5YR 4/6) irregular oxidized iron masses, common fine black (N 2/0) irregular manganese masses, and common fine black (N 2/0) spherical manganese nodules; common slickensides and wedge-shaped aggregates; moderately alkaline, pH 8.0 by Hellige-Truog; abrupt smooth boundary.

Bk—25 to 29 inches (64 to 74 cm); light yellowish brown (10YR 6/4) silty clay, yellowish brown (10YR 5/4) moist; 45 percent clay; moderate fine subangular blocky structure; hard, firm, sticky, plastic; very few very fine roots; few very fine tubular pores; common fine strong brown (7.5YR 4/6) irregular oxidized iron masses and common fine black (N 2/0) spherical manganese nodules; strongly effervescent on concretions; moderately alkaline, pH 8.3 by Hellige-Truog; abrupt smooth boundary.

2Bkqm1—29 to 33 inches (74 to 84 cm); grayish brown (10YR 5/2), indurated duripan, grayish brown (2.5Y 5/2) moist; silica- and lime-cemented capping 0.25 inch (0.6 cm) thick; strong thin platy structure; very rigid, nonsticky, nonplastic; very few very fine roots between plates and very few very fine roots matted on top of the capping; very few tubular pores; violently effervescent throughout; abrupt smooth boundary.

2Bkqm2—33 to 40 inches (84 to 102 cm); grayish brown (10YR 5/2), strongly cemented to indurated duripan, grayish brown (2.5Y 5/2) moist; strong thin platy structure; very rigid, nonsticky, nonplastic; slightly effervescent throughout.

Type location: Butte County, California; about 5.8 miles southeast of Rancho Llano Seco headquarters, approximately 2,400 feet west and 5,500 feet south of the intersection of Grainland Road and Seven Mile Lane; in an unsectioned area in the Llano Seco Land Grant; 121 degrees, 55 minutes, 0.0 seconds north latitude and 39 degrees, 35 minutes, 37.5 seconds west longitude; NAD83; USGS Quad: Llano Seco, California.

Range in Characteristics

Depth to the duripan is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry from May to October 15 (about 165 days). The particle-size control section averages 45 to 55 percent clay. Mineralogy is dominantly smectitic. The soils are calcareous from a depth of 25 to 40 inches (64 to 102 cm). Reversible, surface-initiated cracks 0.5 to 1 inch (1.3 to 2.5 cm) wide extend to a depth of 25 inches (64 cm) from June to October (about 130 days) when the soils are not irrigated. Few or common slickensides occur in the Bss horizon. A fluctuating water table can occur from the top of the duripan to 6 inches (15 cm) below the surface of the soil from December through May. Redoximorphic features, such as manganese nodules, manganese masses, and oxidized iron masses, may occur throughout all horizons. Some pedons have accumulations of carbonate and/or carbonate concretions in chimney areas.

The A horizon has dry color of 10YR 6/2. Moist color is 10YR 4/2. Texture is silty clay or clay. The content of clay ranges from 40 to 50 percent. The content of organic matter is 1 to 2 percent. Reaction is slightly acid or neutral.

The Bss1 horizon has dry color of 10YR 6/2. Moist color is 10YR 5/2, 4/2, 4/3, 3/3, or 3/4. Texture is silty clay or clay. The content of clay ranges from 40 to 60 percent. The content of organic matter is 0.1 to 1 percent. Reaction is neutral or slightly alkaline.

The Bss2 horizon has dry color of 10YR 6/2 or 6/3. Moist color is 10YR 4/2, 5/2, 4/3, or 3/3. Texture is silty clay or clay. The content of clay ranges from 40 to 60 percent. The content of organic matter is 0.1 to 1 percent. Reaction is slightly alkaline or moderately alkaline.

The Bk horizon has dry color of 10YR 6/2, 6/3, or 6/4. Moist color is 10YR 4/2, 4/3, 5/4, or 5/3. Texture is silty clay or clay loam. The content of clay ranges from 35 to 50 percent. The content of organic matter is 0.1 to 1 percent. Effervescence ranges from violent to slight. Salinity ranges from 0 to 2 mmhos/cm. Reaction is moderately alkaline or strongly alkaline.

The 2Bkqm horizon has dry color of 10YR 6/4 or 5/2. Moist color is 10YR 4/4 or 4/3 or 2.5Y 5/2. Rupture resistance ranges from strongly cemented to indurated with silica and lime.

Oregongulch Series

The Oregongulch series consists of moderately deep, somewhat excessively drained soils that formed in residuum and colluvium derived from trondhjemite. These soils are on ridgetops and side slopes on granitic Sierra Nevada foothills. Slopes range from 2 to 70 percent. The mean annual precipitation is about 48 inches (1,219 mm), and the mean annual air temperature is about 58 degrees F (14 degrees C).

Taxonomic class: Coarse-loamy, mixed, active, thermic Typic Haploxerepts

Typical Pedon

Oregongulch gravelly sandy loam, on a southeast-facing slope of 28 percent, under a cover of whiteleaf manzanita, live oak, Pacific madrone, toyon, Pacific poison oak,

foothill pine, and scattered ponderosa pine, at an elevation of 1,000 feet (305 m). When described on 9/29/1998, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

- Oi—0 to 1 inch (0 to 3 cm); slightly decomposed plant material; abrupt smooth boundary.
- A—1 to 4 inches (3 to 10 cm); light gray (10YR 7/2) gravelly sandy loam, dark grayish brown (10YR 4/2) moist; 10 percent clay; weak very fine subangular blocky structure; slightly hard, friable, nonsticky, nonplastic; few very fine roots; many very fine interstitial pores; 30 percent subangular gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.
- Bw1—4 to 7 inches (10 to 18 cm); very pale brown (10YR 7/3) gravelly sandy loam, brown (10YR 5/3) moist; 12 percent clay; weak fine subangular blocky structure; slightly hard, friable, nonsticky, nonplastic; few very fine to medium roots; many very fine interstitial pores; 20 percent subangular gravel; strongly acid, pH 5.5 by Hellige-Truog; clear smooth boundary.
- Bw2—7 to 13 inches (18 to 33 cm); very pale brown (10YR 7/3) gravelly sandy loam, yellowish brown (10YR 5/4) moist; 15 percent clay; moderate fine subangular blocky structure; slightly hard, firm, nonsticky, nonplastic; common medium and coarse roots; common very fine interstitial pores; 25 percent subangular gravel; moderately acid, pH 6.0 by Hellige-Truog; clear smooth boundary.
- Bw3—13 to 18 inches (33 to 46 cm); very pale brown (10YR 7/3) gravelly sandy loam, yellowish brown (10YR 5/4) moist; 15 percent clay; moderate fine subangular blocky structure; slightly hard, firm, nonsticky, nonplastic; common medium roots; common very fine interstitial pores; 30 percent subangular gravel; moderately acid, pH 5.8 by Hellige-Truog; abrupt smooth boundary.
- C—18 to 24 inches (46 to 61 cm); very pale brown (10YR 7/3) very gravelly sandy loam, yellowish brown (10YR 5/4) moist; 13 percent clay; moderate medium subangular blocky structure; slightly hard, firm, nonsticky, nonplastic; common medium roots; common very fine interstitial pores; 40 percent subangular gravel; moderately acid, pH 5.8 by Hellige-Truog; abrupt smooth boundary.
- Cdt—24 to 60 inches (61 to 152 cm); weathered, densic trondhjemite bedrock; very pale brown (10YR 8/3) very gravelly loamy coarse sand, very pale brown (10YR 7/3) moist; 5 percent clay; massive, hard, firm, noncemented, nonsticky, nonplastic; common medium and coarse roots in cracks; 20 percent discontinuous prominent yellowish red (5YR 5/6 moist) clay films on rocks; after crushing, 50 percent hard subangular gravel; moderately acid, pH 5.8 by Hellige-Truog.

Type location: Butte County, California; about 3.7 miles northwest of Forbestown, approximately 1,900 feet west and 750 feet south of the northeast corner of sec. 6, T. 19 N., R. 6 E.; 39 degrees, 32 minutes, 22 seconds north latitude and 121 degrees, 20 minutes, 21 seconds west longitude; NAD83; USGS Quad: Forbestown, California.

Range in Characteristics

The depth to densic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 59 to 64 degrees F (15 to 18 degrees C). The particle-size control section averages 12 to 18 percent clay and 20 to 35 percent rock fragments, mostly gravel. Mineralogy is mixed. The content of organic matter is 1 to 2.5 percent to a depth of 4 inches (10 cm) and is less than 1 percent from 4 to 24 inches (10 to 61 cm). Rock fragments on the surface range from 5 to 40 percent gravel.

The A horizon has dry color of 10YR 5/2, 6/2, or 7/2. Moist color is 10YR 3/2, 4/2, or 4/3. Texture is gravelly sandy loam, gravelly coarse sandy loam, sandy loam, or coarse sandy loam. The content of clay ranges from 5 to 12 percent. The content of gravel is 0 to 30 percent. Reaction is slightly acid or neutral.

The Bw horizon has dry color of 10YR 6/2, 7/2, 7/3, 8/2, or 8/3. Moist color is 10YR 3/3, 4/3, 5/3, 5/4, 6/4, or 7/3. Texture is gravelly sandy loam, gravelly coarse sandy loam, coarse sandy loam, or loamy coarse sand. The content of clay ranges from 3 to 15 percent. The content of gravel is 10 to 30 percent. Reaction ranges from strongly acid to slightly acid.

The C horizon has dry color of 10YR 7/3, 8/2, or 8/3. Moist color is 10YR 5/4 or 6/2. Texture is very gravelly sandy loam or gravelly loamy coarse sand. The content of clay ranges from 3 to 13 percent. The content of gravel is 20 to 50 percent. Reaction is moderately acid or slightly acid.

The Cdt horizon has variegated dry color of 10YR 6/3, 7/3, 8/2, or 8/3; 7.5YR 6/6; or 5YR 6/6. It has variegated moist color 10YR 5/4, 6/2, 6/4, or 7/3; 7.5YR 5/6; or 5YR 4/6. After crushing, texture is gravelly sandy clay loam, loamy coarse sand, gravelly loamy coarse sand, very gravelly loamy coarse sand, very gravelly coarse sand, or gravelly coarse sand. The content of clay ranges from 1 to 22 percent. The content of gravel is 10 to 50 percent. Reaction ranges from strongly acid to slightly acid.

Oroshore Series

The Oroshore series consists of moderately deep, well drained soils that formed in residuum and colluvium derived from metasedimentary and metavolcanic rocks. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada foothills. Slopes range from 3 to 70 percent. The mean annual precipitation is about 38 inches (965 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Loamy-skeletal, mixed, active, thermic Ultic Haploxeralfs

Typical Pedon

Oroshore gravelly loam, on a south-southwest-facing slope of 17 percent, under a cover of annual grasses and forbs and scattered blue oaks, at an elevation of 750 feet (229 m). When described on 6/6/2000, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

- A—0 to 2 inches (0 to 5 cm); pink (7.5YR 7/4) gravelly loam, brown (7.5YR 5/4) moist; 27 percent clay; moderate coarse subangular blocky structure parting to strong fine granular; slightly hard, very friable, slightly sticky, slightly plastic; common very fine roots; many very fine to medium and common coarse tubular and irregular pores; 20 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.
- Bt1—2 to 15 inches (5 to 38 cm); pink (7.5YR 8/4) gravelly clay loam, brown (7.5YR 5/4) moist; 30 percent clay; moderate medium and coarse subangular blocky structure; slightly hard, very friable, moderately sticky, moderately plastic; common very fine and fine and few medium roots; many very fine to coarse tubular pores; 70 percent continuous distinct clay films; 10 percent cobbles and 15 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.
- Bt2—15 to 28 inches (38 to 71 cm); pink (5YR 8/4) very cobbly clay loam, reddish yellow (5YR 6/6) moist; 33 percent clay; moderate fine and medium subangular blocky structure; slightly hard, very friable, moderately sticky, moderately plastic; common very fine roots; many very fine to medium tubular pores; 80 percent continuous distinct clay films; 20 percent cobbles and 20 percent gravel; neutral, pH 6.7 by Hellige-Truog; gradual smooth boundary.
- Bt3—28 to 34 inches (71 to 86 cm); reddish yellow (5YR 7/6) extremely gravelly clay loam, yellowish red (5YR 5/6) moist; 37 percent clay; moderate fine and medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; common very fine roots; common very fine and fine tubular pores; 80 percent

continuous prominent clay films; 20 percent cobbles and 50 percent gravel; neutral, pH 6.9 by Hellige-Truog; clear smooth boundary.
 Crt—34 inches (86 cm); weakly cemented metavolcanic bedrock; few very fine roots; few very fine and fine tubular pores; 20 percent continuous prominent clay films; slightly alkaline, pH 7.8 by Hellige-Truog.

Type location: Butte County, California; about 0.5 mile southwest of Lime Saddle Boat Ramp, approximately 1,000 feet north and 1,900 feet west of the southeast corner of sec. 18, T. 21 N., R. 4 E.; 39 degrees, 40 minutes, 17 seconds north latitude and 121 degrees, 34 minutes, 4 seconds west longitude; NAD83; USGS Quad: Cherokee, California.

Range in Characteristics

The depth to paralithic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 59 to 66 degrees F (15 to 19 degrees C). The particle-size control section averages 27 to 35 percent clay and 35 to 80 percent rock fragments, mostly gravel. Mineralogy is mixed. Rock fragments on the surface range from 5 to 30 percent gravel, 0 to 25 percent cobbles, 0 to 10 percent stones, and 0 to 10 percent boulders.

The A horizon has dry color of 7.5YR 6/3, 6/4, 7/3, or 7/4 or 10YR 6/4, 7/3, or 7/4. Moist color is 7.5YR 4/2, 4/3, 4/4, or 5/4 or 10YR 4/3. Texture is loam, gravelly loam, or very gravelly loam. The content of clay ranges from 20 to 27 percent. The horizon has 10 to 45 percent gravel and 0 to 10 percent cobbles. Reaction ranges from neutral to moderately acid.

The Bt horizon has dry color of 7.5YR 6/4, 7/4, or 8/4; 5YR 6/4, 7/4, 7/6, or 8/4; or 10YR 6/4, 7/4, or 8/4. Moist color is 7.5YR 4/4, 5/4, 5/6, or 6/6; 5YR 4/4, 4/6, 5/4, 5/6, 6/6, 5/8, or 6/8; or 10YR 4/4, 5/4, 5/6, or 5/8. Texture is gravelly clay loam, very gravelly clay loam, extremely gravelly clay loam, very cobbly clay loam, or extremely cobbly clay loam. The content of clay ranges from 27 to 39 percent. The horizon has 15 to 65 percent gravel, 0 to 40 percent cobbles, and 0 to 20 percent stones. Reaction ranges from neutral to moderately acid.

Oroville Series

The Oroville series consists of moderately deep, poorly drained soils that formed in alluvium derived from metamorphic and igneous rocks. These soils are in swales on intermediate terraces. Slopes range from 0 to 9 percent. The mean annual precipitation is about 24 inches (610 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine, mixed, active, thermic Aquic Durixeralfs

Typical Pedon

Oroville gravelly fine sandy loam, on a southeast-facing slope of 3 percent, under a cover of annual grasses and forbs, at an elevation of 280 feet (85 m). When described on 9/26/2001, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); brown (7.5YR 5/4) gravelly fine sandy loam, dark brown (7.5YR 3/3) moist; 18 percent clay; strong thick platy structure parting to moderate fine subangular blocky; slightly hard, friable, nonsticky, nonplastic; many very fine roots; few very fine tubular and common very fine irregular pores; 20 percent well rounded mixed gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.

- BA_t—2 to 6 inches (5 to 15 cm); yellowish red (5YR 4/6) gravelly sandy loam, dark reddish brown (5YR 3/4) moist; 20 percent clay; strong medium platy structure parting to moderate fine subangular blocky; very hard, friable, slightly sticky, slightly plastic; few fine and common very fine roots; few very fine tubular pores; 5 percent discontinuous distinct clay films on vertical faces of peds; 20 percent well rounded mixed gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.
- B_t1—6 to 13 inches (15 to 33 cm); red (2.5YR 4/6) gravelly clay loam, dark red (2.5YR 3/6) moist; 28 percent clay; strong medium subangular blocky structure; very hard, firm, slightly sticky, moderately plastic; few fine and common very fine roots; common very fine tubular pores; 30 percent discontinuous distinct clay films on faces of peds; 20 percent well rounded mixed gravel; slightly acid, pH 6.3 by Hellige-Truog; abrupt wavy boundary.
- 2B_t2—13 to 17 inches (33 to 43 cm); reddish brown (2.5YR 4/4) gravelly clay, dark red (2.5YR 3/6) moist; 50 percent clay; strong fine prismatic structure parting to moderate fine angular blocky; extremely hard, very firm, very sticky, very plastic; few very fine roots; many very fine tubular pores; 5 percent slickensides and 50 percent continuous prominent clay films on faces of peds; 20 percent well rounded mixed gravel; slightly acid, pH 6.3 by Hellige-Truog; clear wavy boundary.
- 2B_tg—17 to 23 inches (43 to 58 cm); brown (10YR 5/3) gravelly sandy clay, brown (10YR 4/3) moist; 50 percent clay; weak fine angular blocky structure; extremely hard, very firm, very sticky, very plastic; few very fine roots; few very fine tubular pores; 50 percent continuous prominent clay films on faces of peds; 40 percent fine irregular manganese masses; 15 percent fine distinct olive gray (5Y 5/2) iron depletions lining pores; 30 percent well rounded mixed gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt wavy boundary.
- 3B_{qm}1—23 to 31 inches (58 to 79 cm); extremely gravelly, indurated duripan; very rigid, cemented by silica, nonsticky, nonplastic; 2 percent well rounded mixed cobbles and 75 percent well rounded mixed gravel; clear wavy boundary.
- 3B_{qm}2—31 to 60 inches (79 to 152 cm); extremely gravelly, strongly cemented duripan; rigid, cemented by silica, nonsticky, nonplastic; 2 percent well rounded mixed cobbles and 75 percent well rounded mixed gravel.

Type location: Butte County, California; about 0.5 mile north of downtown Oroville, in the Fernandez Land Grant, approximately 3,200 feet west and 1,100 feet south of the northeast corner of projected sec. 8, T. 19 N., R. 4 E.; 39 degrees, 31 minutes, 20 seconds north latitude and 121 degrees, 33 minutes, 5 seconds west longitude; NAD83; USGS Quad: Oroville, California.

Range in Characteristics

Depth to the extremely gravelly, indurated duripan ranges from 20 to 40 inches (51 to 102 cm), and depth to the 2B_t horizon ranges from 6 to 27 inches (15 to 69 cm). The mean annual soil temperature is 61 to 64 degrees F (16 to 18 degrees C). The particle-size control section averages 35 to 50 percent clay and 2 to 35 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur from the top of the duripan to the surface of the soil from December through April. Rock fragments on the surface range from 5 to 20 percent gravel.

The A horizon has dry color of 7.5YR 5/3, 5/4, 6/3, 6/4, or 7/3 or 5YR 3/4. Moist color is 7.5YR 3/3, 3/4, 4/3, or 4/4; 5YR 3/4 or 4/4; or 2.5YR 3/4. Texture is gravelly sandy loam, fine sandy loam, sandy loam, or loam. The content of clay ranges from 15 to 24 percent. The content of gravel is 5 to 20 percent. The content of organic matter is 0.5 to 2 percent. Redoximorphic features range from 0 to 10 percent soft oxidized iron masses and 0 to 20 percent iron depletions. Reaction is moderately acid or slightly acid.

The BA_t horizon has dry color of 7.5YR 5/4, 6/3, or 6/4 or 5YR 4/4, 4/6, or 5/3. Moist color is 7.5YR 4/3 or 4/4, 5YR 3/4 or 4/4, or 2.5YR 3/4. Texture is gravelly sandy

loam, gravelly fine sandy loam, gravelly loam, loam, or sandy loam. The content of clay ranges from 18 to 25 percent. The content of gravel is 3 to 20 percent. The content of organic matter is 0.2 to 0.8 percent. Redoximorphic features range from 0 to 30 percent soft oxidized iron masses, 0 to 15 percent iron depletions, and 0 to 5 percent soft manganese masses. Reaction ranges from moderately acid to neutral.

The Bt horizon has dry color of 7.5YR 5/4, 6/4, or 7/4; 5YR 5/4 or 5/6; or 2.5YR 4/6. Moist color is 7.5YR 4/3 or 4/4; 5YR 3/4, 4/4, 4/6, or 4/8; or 2.5YR 3/6. Texture is gravelly clay loam, gravelly sandy clay loam, very gravelly sandy clay loam, sandy clay loam, or clay loam. The content of clay ranges from 22 to 35 percent. The content of gravel is 5 to 40 percent. The content of organic matter is 0.1 to 0.5 percent. Redoximorphic features range from 0 to 2 percent soft oxidized iron masses and 0 to 15 percent soft manganese masses. Reaction ranges from moderately acid to neutral.

The 2Bt horizon has dry color of 10YR 5/3 or 5/4; 7.5YR 5/4 or 7/4; 5YR 4/4, 4/6, 5/4, or 5/6; or 2.5YR 4/4. Moist color is 10YR 4/3 or 4/4; 7.5YR 4/3 or 4/4; 5YR 3/3, 3/4, 4/4, or 4/6; or 2.5YR 3/6. Texture is gravelly clay, gravelly sandy clay, sandy clay, or clay. The content of clay ranges from 45 to 52 percent. The horizon has 5 to 45 percent gravel and 0 to 2 percent cobbles. The content of organic matter is 0 to 0.3 percent. Redoximorphic features range from 0 to 20 percent iron depletions and 0 to 40 percent soft manganese masses. Reaction ranges from moderately acid to neutral.

The 2Btg horizon has dry color of 10YR 5/3 or 5/4; 5YR 4/4, 4/6, 5/6, or 6/4; or 7.5YR 5/4 or 7/4. Moist color is 10YR 4/3 or 4/4; 5YR 3/3, 4/4, 4/6, or 5/4; or 7.5YR 4/4. Texture is gravelly sandy clay, gravelly clay, sandy clay, or clay. The content of clay ranges from 45 to 55 percent. The content of organic matter is 0 to 0.3 percent. Redoximorphic features include iron depletions and manganese masses. Reaction is slightly acid or neutral.

The 3Bq horizon, where it occurs, has dry color of 7.5YR 6/4 or 6/6. Moist color is 7.5YR 4/4, 4/6, 5/4, or 5/6. Texture is very gravelly sandy loam, sandy clay loam, or sandy loam. The content of clay ranges from 12 to 28 percent. The content of gravel is 0 to 40 percent. Redoximorphic features range from 0 to 20 percent soft manganese masses. Reaction is slightly acid or neutral.

The 3Bqm horizon is indurated to moderately cemented with silica. A silica and manganese capping $\frac{1}{16}$ to $\frac{3}{8}$ inch thick occurs in some pedons. Manganese coatings occur on top of the duripan. The horizon has 15 to 80 percent well rounded gravel and 0 to 5 percent cobbles.

Oxyaquic Xerofluvents

Oxyaquic Xerofluvents consist of very deep, somewhat poorly drained soils that formed in alluvium derived from placer mining outwash from the Cherokee Gold Mine. These soils are on flood plains within levees, on basin floors, and in sediment basins. Slopes are 0 to 1 percent. The mean annual precipitation is about 20 inches (508 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Mixed, superactive, nonacid, thermic Oxyaquic Xerofluvents

Reference Pedon

Oxyaquic Xerofluvents, thermic, on a slope of 0 percent, under a cover of rice, at an elevation of 120 feet (37 m). When described on 5/21/1992, the soil was moist below a depth of 4 inches (10 cm). (Colors are for dry soil unless otherwise noted.)

Ap—0 to 6 inches (0 to 15 cm); light gray (N 7/0) very fine sandy loam, dark gray (10YR 4/1) moist; 18 percent clay; massive; hard, friable, slightly sticky, moderately plastic; common very fine roots; few very fine tubular pores; many

- medium strong brown (7.5YR 4/6) oxidized iron masses, yellowish red (5YR 4/6) moist; moderately acid, pH 6.0 by Hellige-Truog; clear smooth boundary.
- C1—6 to 20 inches (15 to 51 cm); pinkish gray (7.5YR 7/2) silt loam, gray (5YR 5/1) moist; 25 percent clay; massive; hard, friable, slightly sticky, moderately plastic; common very fine roots; few very fine tubular pores; many medium reddish yellow (7.5YR 7/6) oxidized iron masses, dark gray (5YR 4/1) moist; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.
- C2—20 to 30 inches (51 to 76 cm); yellow (10YR 7/6) silt loam, strong brown (7.5YR 7/4) moist; 25 percent clay; strong thin platy structure; hard, friable, slightly sticky, moderately plastic; few very fine roots; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.
- C3—30 to 43 inches (76 to 109 cm); pink (7.5YR 7/6), stratified silt loam to loamy fine sand, strong brown (7.5YR 5/6) moist; 10 percent clay; massive parting to strong thin platy structure; hard, friable, slightly sticky, slightly plastic; many medium reddish yellow (7.5YR 6/8) oxidized iron masses and common fine black (N 2/0) manganese masses; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.
- C4—43 to 55 inches (109 to 140 cm); reddish yellow (7.5YR 7/6) silt loam, yellowish brown (10YR 5/8) moist; 20 percent clay; strong thin platy structure; hard, friable, moderately sticky, moderately plastic; common fine black (N 2/0) manganese masses and many medium strong brown (7.5YR 5/6) oxidized iron masses; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.
- C5—55 to 72 inches (140 to 183 cm); very pale brown (10YR 8/3), stratified loamy fine sand to silt loam, brownish yellow (10YR 6/6) moist; 20 percent clay; massive parting to strong thick platy structure; slightly hard, very friable, slightly sticky, slightly plastic; many medium yellowish red (5YR 5/8) and strong brown (7.5YR 5/6) oxidized iron masses and common fine black (N 2/0) manganese masses; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.
- 2Ab—72 to 74 inches (183 to 188 cm); grayish brown (10YR 5/2) clay, very dark gray (10YR 3/1) moist; 50 percent clay; moderate medium granular structure; very hard, firm, very sticky, very plastic; slightly alkaline, pH 7.5 by Hellige-Truog.

The reference pedon is an example of the soils within this category. The properties represented in map units 338, 339, 439, 440, and 441 vary. The particle-size classes represented by this description include coarse-loamy, fine-loamy, and fine.

Type location: Butte County, California; about 2.5 miles northeast of Richvale, approximately 2,000 feet south and 100 feet east of the center of sec. 2, T. 19 N., R. 2 E.; 39 degrees, 31 minutes, 30 seconds north latitude and 121 degrees, 42 minutes, 55 seconds west longitude; NAD27; USGS Quad: Shippee, California.

Range in Characteristics

Depth to a buried horizon of clay ranges from 24 to 72 inches (61 to 183 cm) or more. The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry in all parts from about June to October (about 125 days). The particle-size control section is coarse-loamy, fine-loamy, fine, or coarse-loamy over clayey. Mineralogy is mixed. A fluctuating water table can occur at a depth of 18 to 72 inches (46 to 183 cm) from December through April. Redoximorphic features, such as oxidized iron masses and manganese masses, can occur in all horizons. Some pedons have a duripan, which is at a depth of 38 to 60 inches (96 to 152 cm) or more.

The Ap horizon has dry color of N 7/0 or 10YR 5/2, 5/3, 5/4, 6/3, 6/4, 7/2, 7/3, or 7/4. Moist color is 10YR 3/1, 3/2, 3/3, 4/1, 4/2, 4/3, 5/2, 5/3, 5/4, or 6/3; 2.5Y 4/2, 4/3, or 5/2; or 5Y 4/1. Texture typically is very fine sandy loam or silt loam, but the range includes sand, loamy sand, sandy loam, silty clay loam, clay loam, clay, and silty clay.

The content of clay ranges from 5 to 60 percent. Reaction ranges from moderately acid to moderately alkaline.

The C horizon has dry color of 2.5Y 6/6 or 7/3; 10YR 4/3, 5/3, 5/4, 6/2, 6/4, 7/2, 7/3, 7/6, 8/2, 8/3, 8/4, or 8/6; or 7.5YR 5/4, 5/6, 6/6, 7/2, 7/4, 7/6, or 7/8. Moist color is 5Y 4/1 or 6/1; 2.5Y 4/2, 5/2, or 5/6; 10YR 3/2, 3/3, 4/1, 4/2, 4/3, 5/3, 5/6, 5/8, 6/4, 6/6, or 7/4; or 7.5YR 4/4, 5/4, 5/6, 5/8, 6/4, or 6/6. Texture is loamy fine sand, silt loam, fine sand, loamy sand, sand, fine sandy loam, loam, silty clay loam, silty clay, or clay or is stratified very fine sandy loam to silt loam, loam to silty clay loam, or silt loam to fine sand. The content of clay ranges from 5 to 60 percent. The content of gravel is 0 to 25 percent. Reaction ranges from neutral to moderately alkaline.

The 2Ab or Bssb horizon has dry color of 10YR 4/1, 5/2, or 6/2. Moist color is 10YR 3/1 or 4/1, N 2/0, or 5Y 4/1. Texture is clay or silty clay. The content of clay ranges from 40 to 80 percent. Effervescence ranges from slight to violent. Reaction is slightly alkaline or moderately alkaline.

Palexerults

Palexerults consist of very deep, well drained soils that formed in colluvium over residuum derived from volcanic rocks over Eocene sediments. These soils are on side slopes on Sierra Nevada foothills. Slopes range from 2 to 50 percent. The mean annual precipitation is about 29 inches (737 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Kaolinitic, superactive, thermic Typic Palexerults

Typical Pedon

Palexerults gravelly loam, on a north-facing slope of 20 percent, under a cover of blue oak, interior live oak, manzanita, toyon, poison oak, and annual grasses and forbs, at an elevation of 760 feet (232 m). When described on 5/21/2001, the soil was dry to a depth of 12 inches (31 cm) and slightly moist below that depth. (Colors are for dry soil unless otherwise noted.)

- A—0 to 2 inches (0 to 5 cm); pale brown (10YR 6/3) gravelly loam, very dark grayish brown (10YR 3/2) moist; 20 percent clay; moderate fine and medium subangular blocky structure; very hard, firm, moderately sticky, slightly plastic; many fine and medium roots throughout; many fine irregular pores; 5 percent rounded mixed cobbles and 10 percent rounded mixed gravel; neutral, pH 7.0 by Hellige-Truog; clear wavy boundary.
- Bt1—2 to 12 inches (5 to 31 cm); pale brown (10YR 6/3) gravelly loam, brown (10YR 4/3) moist; 26 percent clay; moderate medium subangular blocky structure; very hard, firm, moderately sticky, moderately plastic; many fine and medium roots between peds; common fine and medium tubular pores; 35 discontinuous distinct clay films on faces of peds; 5 percent rounded mixed cobbles and 25 percent rounded mixed gravel; slightly acid, pH by Hellige-Truog; abrupt wavy boundary.
- Bt2—12 to 20 inches (31 to 51 cm); 60 percent reddish yellow (7.5YR 6/6), 30 percent light brown (7.5YR 6/3), and 10 percent pink (7.5YR 7/4) clay loam, 60 percent brown (7.5 4/4), 30 percent brown (10YR 5/3), and 10 percent yellowish brown (10YR 5/6) moist; 34 percent clay; moderate medium angular blocky structure; very hard, very firm, moderately sticky, moderately plastic; common fine to coarse roots between peds; common fine tubular pores; 55 percent discontinuous distinct clay films on faces of peds; 10 percent well rounded quartz gravel; very strongly acid, pH 4.8 by Hellige-Truog; clear smooth boundary.
- 2Bt3—20 to 29 inches (51 to 74 cm); 65 percent reddish yellow (5YR 6/6) and 35 percent pink (7.5YR 8/4) silty clay, 65 percent reddish brown (5YR 4/4) and 35 percent strong brown (7.5YR 5/6) moist; 50 percent clay; moderate medium

angular blocky structure; very hard, very firm, moderately sticky, very plastic; common fine and medium roots between peds and few coarse roots in cracks; common fine vesicular pores; 70 percent discontinuous distinct clay films on faces of peds; 5 percent well rounded quartz gravel; very strongly acid, pH 4.5 by Hellige-Truog; clear wavy boundary.

2BCt—29 to 46 inches (74 to 117 cm); 70 percent reddish yellow (5YR 6/6) and 30 percent pink (7.5YR 8/4) silty clay, 70 percent reddish brown (5YR 4/4) and 30 percent brown (7.5YR 5/4) moist; 55 percent clay; moderate medium and coarse angular blocky structure; very hard, very firm, moderately sticky, very plastic; many fine and medium and few coarse roots in cracks; common fine vesicular pores; 75 percent continuous distinct clay films on faces of peds; 3 percent well rounded quartz gravel; very strongly acid, pH 4.5 by Hellige-Truog; clear smooth boundary.

2C—46 to 65 inches (117 to 165 cm); 70 percent reddish yellow (5YR 6/6) and 30 percent reddish yellow (7.5YR 7/6) silty clay, 70 percent reddish brown (5YR 4/4) and 30 percent light brown (7.5YR 6/4) moist; 50 percent clay; moderate medium angular blocky structure; very hard, very firm, moderately sticky, very plastic; few fine and coarse roots in cracks; few fine vesicular pores; 2 percent well rounded quartz gravel; extremely acid, pH 4.3 by Hellige-Truog; clear wavy boundary.

2Cd—65 inches (165 cm); densic claystone; noncemented.

Type location: Butte County, California; about 3.4 miles north of Oroville, approximately 1,550 feet east and 1,150 feet south of the northwest corner of sec. 29, T. 20 N., R. 4 E.; 39 degrees, 33 minutes, 56 seconds north latitude and 121 degrees, 33 minutes 8 seconds west longitude; NAD27; USGS Quad: Oroville, California.

Range in Characteristics

The depth to densic bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The particle-size control section averages 26 to 40 percent clay and 3 to 25 percent rock fragments, mostly gravel. Mineralogy is kaolinitic. Rock fragments on the surface range from 0 to 20 percent gravel, 0 to 10 percent cobbles, 0 to 5 percent stones, and 0 to 3 percent boulders. Mixed colors are common and are inherited from the parent material.

The A horizon has dry color of 10YR 4/2, 4/3, 5/2, 5/3, or 6/3 or 7.5YR 4/3 or 6/3. Moist color is 10YR 3/2, 3/3, or 4/3 or 7.5YR 3/3 or 5/4. Texture is loam, gravelly loam, or silt loam. The content of clay ranges from 16 to 24 percent. The horizon has 0 to 20 percent gravel and 0 to 10 percent cobbles. Reaction ranges from moderately acid to neutral.

The Bt horizon has dry color of 10YR 4/3, 4/4, 6/3, or 6/4 or 7.5YR 6/3, 5/4, 6/6, or 7/4. Moist color is 10YR 3/4, 4/3, 5/3, 5/4, or 5/6; 7.5YR 4/3, 4/4, or 5/6; or 5YR 4/4. Texture is loam, gravelly loam, silt loam, silty clay loam, sandy clay loam, gravelly sandy clay loam, clay loam, or gravelly clay loam. The content of clay ranges from 20 to 35 percent. The horizon has 0 to 30 percent gravel and 0 to 5 percent cobbles. Reaction ranges from very strongly acid to slightly acid.

The 2Bt horizon has dry color of 10YR 5/3 or 6/4; 7.5YR 4/3, 5/4, 6/6, 7/6, or 8/4; or 5YR 6/6. Moist color is 10YR 4/4 or 5/4; 7.5YR 4/4, 5/3, 5/4, 4/6, 5/6, or 6/6; or 5YR 3/4, 4/4, or 5/4. Texture is clay, gravelly clay, silty clay loam, silty clay, or gravelly silty clay. The content of clay ranges from 35 to 60 percent. The content of gravel is 0 to 30 percent. Reaction ranges from extremely acid to strongly acid.

The 2BCt horizon has dry color of 10YR 5/4, 5/6, or 6/4; 7.5YR 8/4; or 5YR 6/6. Moist color is 10YR 5/4, 6/4, or 6/6; 7.5YR 5/3; or 5YR 4/4 or 5/4. Texture is clay, silty clay, gravelly silty clay, clay loam, or sandy clay loam. The content of clay ranges from 30 to 60 percent. The content of gravel is 0 to 30 percent. Reaction ranges from extremely acid to strongly acid.

The 2C horizon has dry color of 10YR 7/2, 7.5YR 5/4 or 7/6, 5YR 6/6, or 2.5Y 6/4. Moist color is 10YR 6/2, 6/4, or 5/6; 7.5YR 4/4 or 5/6; 5YR 4/4 or 6/4; or 2.5Y 6/3. Texture is clay or silty clay. The content of clay ranges from 40 to 60 percent. The content of gravel is 0 to 5 percent. Reaction ranges from extremely acid to strongly acid.

Paradiso Series

The Paradiso series consists of very deep, well drained soils that formed in weathered tephra over residuum derived from volcanic rocks. These soils are on the top of volcanic ridges in the Cascade Mountains. Slopes range from 2 to 30 percent. The mean annual precipitation is about 55 inches (1,397 mm), and the mean annual air temperature is about 57 degrees F (14 degrees C).

Taxonomic class: Fine, mixed, semiactive, mesic Andic Haploxeralfs

Typical Pedon

Paradiso loam, on a south-facing slope of 5 percent, under a cover of ponderosa pine and black oak, at an elevation of 2,125 feet (648 m). When described on 7/1/1996, the soil was very slightly moist throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 2 inches (0 to 5 cm); needles, leaves, and twigs.

A—2 to 4 inches (5 to 10 cm); brown (7.5YR 4/4) loam, dark reddish brown (5YR 3/3) moist; 25 percent clay; strong fine and medium granular structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine and fine roots; many very fine to medium irregular and tubular pores; noneffervescent; 5 percent gravel; slightly acid, pH 5.8 by pH meter 1:1 water; NaF pH 10.0; clear smooth boundary.

ABt—4 to 9 inches (10 to 23 cm); reddish brown (5YR 5/4) clay loam, reddish brown (5YR 4/3) moist; 33 percent clay; strong fine and medium granular structure; slightly hard, friable, moderately sticky, moderately plastic; many very fine and fine and common medium roots; many very fine to medium tubular pores; common distinct continuous clay films on faces of peds and in pores and common distinct discontinuous clay bridges between sand grains; noneffervescent; 5 percent gravel; slightly acid, pH 5.9 by pH meter 1:1 water; NaF pH 10.5; clear smooth boundary.

Bt1—9 to 16 inches (23 to 41 cm); reddish brown (2.5YR 5/4) clay loam, dark reddish brown (2.5YR 3/4) moist; 36 percent clay; weak medium subangular blocky structure parting to moderate fine granular; slightly hard, friable, moderately sticky, moderately plastic; many very fine to medium roots; many very fine to medium tubular pores; common distinct continuous clay films on faces of peds and in pores; noneffervescent; 5 percent gravel; slightly acid, pH 5.6 by pH meter 1:1 water; NaF pH 10.5; gradual smooth boundary.

Bt2—16 to 25 inches (41 to 64 cm); reddish brown (2.5YR 5/4) clay loam, dark reddish brown (2.5YR 3/4) moist; 39 percent clay; weak fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; many very fine to medium roots; many very fine to medium tubular pores; many distinct continuous clay films on faces of peds and in pores; noneffervescent; 3 percent gravel; slightly acid, pH 5.5 by pH meter 1:1 water; NaF pH 10.5; gradual smooth boundary.

Bt3—25 to 45 inches (64 to 114 cm); reddish yellow (5YR 6/6) clay, reddish brown (5YR 4/4) moist; 50 percent clay; strong medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine to medium tubular pores; many distinct continuous clay films on faces of peds and in pores; noneffervescent; 2 percent gravel;

slightly acid, pH 6.2 by pH meter 1:1 water; NaF pH 10.3; gradual smooth boundary.

Bt4—45 to 58 inches (114 to 147 cm); reddish yellow (7.5YR 6/6) clay loam, reddish brown (5YR 4/4) moist; 33 percent clay; strong fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; few very fine roots; common very fine and fine tubular pores; many distinct continuous clay films on faces of peds and in pores; noneffervescent; 1 percent gravel; slightly acid, pH 6.5 by pH meter 1:1 water; NaF pH 10.5; gradual smooth boundary.

Bt5—58 to 74 inches (147 to 188 cm); light brown (7.5YR 6/4) clay loam, brown (7.5YR 4/4) moist; 28 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine and fine roots; common very fine and few fine tubular pores; many distinct continuous clay films on faces of peds and in pores; noneffervescent; 1 percent gravel; moderately acid, pH 6.6 by pH meter 1:1 water; NaF pH 10.5; gradual smooth boundary.

2Bt6—74 to 84 inches (188 to 213 cm); light yellowish brown (10YR 6/4) loam, strong brown (7.5YR 4/6) moist; 26 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine and fine roots; common very fine and few fine tubular pores; many distinct continuous clay films on faces of peds and in pores; noneffervescent; 5 percent gravel; slightly acid, pH 6.5 by pH meter 1:1 water.

Type location: Butte County, California; about 0.6 mile north of the intersection of Clark Road and Wagstaff Road, approximately 300 feet north and 2,000 feet east of the southwest corner of sec. 1, T. 22 N., R. 3 E.; 39 degrees, 47 minutes, 13.6 seconds north latitude and 121 degrees, 35 minutes, 24.2 seconds west longitude; NAD83; USGS Quad: Paradise East, California.

Range in Characteristics

The depth to paralithic bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 55 to 59 degrees F (13 to 15 degrees C). The soil moisture control section is dry in all parts from about July to October (about 90 days). The particle-size control section averages 35 to 50 percent clay and 0 to 15 percent rock fragments, mostly gravel. Mineralogy is mixed. Acid oxalate extractable Al plus $\frac{1}{2}$ Fe is 1 or more to a depth of 7 inches (18 cm) below the mineral surface. Rock fragments on the surface range from 0 to 15 percent gravel, 0 to 5 percent cobbles, 0 to 5 percent stones, and 0 to 5 percent boulders. Some pedons have clay textures in the lower part of the Bt horizon.

The A horizon has dry color of 7.5YR 4/4 or 5/4 or 5YR 5/4 or 6/4. Moist color is 5YR 3/3 or 4/3. Texture is loam. The content of clay ranges from 17 to 27 percent. The content of gravel is 0 to 15 percent. By sum of cations, base saturation ranges from 30 to 40 percent. NaF pH is 9.3 to 10.5. Reaction ranges from moderately acid to neutral.

The ABt horizon has dry color of 5YR 5/4, 5/6, or 6/4. Moist color is 5YR 3/3 or 4/3 or 2.5YR 3/4. Texture is loam or clay loam. The content of clay ranges from 24 to 35 percent. The content of gravel is 0 to 5 percent. By sum of cations, base saturation ranges from 25 to 40 percent. NaF pH is 9.8 to 10.5. Reaction ranges from moderately acid to neutral.

The upper part of the Bt horizon has dry color of 5YR 5/4, 6/4, 5/6, or 6/6 or 2.5YR 5/4 or 6/6. Moist color is 2.5YR 3/4 or 4/6 or 5YR 4/4. Texture is loam, clay loam, or silty clay loam. The content of clay ranges from 25 to 40 percent. The content of gravel is 0 to 5 percent. By sum of cations, base saturation ranges from 25 to 40 percent. NaF pH is 9.5 to 10.5. Reaction ranges from moderately acid to neutral.

The middle part of the Bt horizon has dry color of 5YR 5/6 or 6/6 or 2.5YR 5/4. Moist color is 2.5YR 3/4, 4/4, or 4/6 or 5YR 4/4. Texture is clay loam, silty clay loam, clay, or silty clay. The content of clay ranges from 35 to 55 percent. The content of gravel is 0 to 5 percent. By sum of cations, base saturation ranges from 25 to 45 percent. NaF pH is 9.5 to 10.5. Reaction ranges from strongly acid to neutral.

The lower part of the Bt horizon has dry color of 7.5YR 5/4, 6/4, or 6/6 or 5YR 5/4, 5/6, or 6/6. Moist color is 5YR 4/4 or 4/6 or 7.5YR 4/4. Texture is loam, gravelly loam, or clay loam. The content of clay ranges from 17 to 35 percent. The content of gravel is 0 to 25 percent, and the content of cobbles is 0 to 10 percent. By sum of cations, base saturation ranges from 35 to 50 percent. NaF pH is 9.2 to 10.5. Reaction ranges from very strongly acid to neutral.

The 2Bt horizon has dry color of 10YR 6/4, 6/6, or 7/6 or 7.5YR 6/4. Moist color is 7.5YR 4/4, 4/6, or 5/6 or 10YR 4/4 or 5/6. Texture is loam or gravelly loam. The content of clay ranges from 17 to 27 percent. The content of gravel is 0 to 35 percent, and the content of cobbles is 0 to 15 percent. By sum of cations, base saturation ranges from 35 to 50 percent. NaF pH is 9.2 to 10.5. Reaction ranges from very strongly acid to slightly acid.

Parkshill Series

The Parkshill series consists of very deep, well drained soils that formed in residuum and colluvium derived from mixed intrusive igneous rocks, mainly quartz diorite and gabbro. These soils are on side slopes on plutons on Sierra Nevada foothills. Slopes range from 2 to 15 percent. The mean annual precipitation is about 35 inches (889 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, active, thermic Ultic Palexeralfs

Typical Pedon

Parkshill coarse sandy loam, on an east-facing slope of 8 percent, under a cover of annual grasses, forbs, interior live oak, blue oak, and Pacific poison oak, at an elevation of 900 feet (274 m). When described on 8/20/2000, the soil was slightly moist from 0 to 26 inches (0 to 66 cm) and moist from 26 to 61 inches (66 cm to 155 cm). (Colors are for dry soil unless otherwise noted.)

- A1—0 to 2 inches (0 to 5 cm); brown (10YR 5/3) coarse sandy loam, dark brown (7.5YR 3/4) moist; 14 percent clay; moderate very fine and fine granular structure; soft, very friable, nonsticky, nonplastic; many very fine roots; many very fine and fine tubular pores; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.
- A2—2 to 8 inches (5 to 20 cm); brown (10YR 5/3) coarse sandy loam, dark brown (7.5YR 3/4) moist; 15 percent clay; moderate very fine and fine granular structure; soft, very friable, nonsticky, nonplastic; many very fine roots; many very fine and fine tubular pores; 3 percent subangular gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.
- Bw—8 to 18 inches (20 to 46 cm); yellowish brown (10YR 5/4) coarse sandy loam, dark brown (7.5YR 3/4) moist; 17 percent clay; moderate fine and medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; common fine, few medium, and many very fine roots; many very fine and fine tubular pores; 3 percent subangular gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.
- Bt1—18 to 26 inches (46 to 66 cm); brown (7.5YR 5/3) coarse sandy loam, dark brown (7.5YR 3/3) moist; 19 percent clay; moderate very fine and fine subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; common fine and many very fine roots; many very fine and fine tubular pores; 30 percent patchy

faint clay films on faces of peds; slightly acid, pH 6.3 by Hellige-Truog; clear smooth boundary.

Bt2—26 to 35 inches (66 to 89 cm); strong brown (7.5YR 5/6) sandy clay loam, strong brown (7.5YR 4/6) moist; 23 percent clay; strong fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; few fine and many very fine roots; many very fine and fine and few medium tubular pores; 50 percent patchy distinct clay films on faces of peds; moderately acid, pH 6.1 by Hellige-Truog; clear wavy boundary.

Bt3—35 to 53 inches (89 to 135 cm); strong brown (7.5YR 5/6) sandy clay loam, strong brown (7.5YR 4/6) moist; 25 percent clay; strong fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; common fine and very fine roots; many very fine and fine tubular pores; 60 percent patchy distinct clay films on faces of peds; moderately acid, pH 6.0 by Hellige-Truog; clear wavy boundary.

BCt—53 to 61 inches (135 to 155 cm); reddish yellow (7.5YR 6/6) sandy clay loam, strong brown (7.5YR 4/6) moist; 23 percent clay; weak very fine and fine subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; common very fine and fine tubular pores; 40 percent faint clay films on faces of peds; moderately acid, pH 5.9 by Hellige-Truog.

Type location: Butte County, California; about 4.1 miles northeast of Bangor, approximately 50 feet south and 2,250 feet east of the northwest corner of sec. 24, T. 18 N., R. 5 E.; 39 degrees, 24 minutes, 32 seconds north latitude and 121 degrees, 21 minutes, 46 seconds west longitude; NAD83; USGS Quad: Rackerby, California.

Range in Characteristics

The depth to bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 59 to 63 degrees F (15 to 17 degrees C). The soil moisture control section is dry in all parts from about June through October (about 165 days). The particle-size control section averages 18 to 25 percent clay and 3 to 20 percent rock fragments, mostly gravel. Mineralogy is mixed. Some pedons have a BA horizon and/or a BC horizon.

The A horizon has dry color of 10YR 4/3, 4/4, 5/3, 5/4, or 5/6 or 7.5YR 5/3. Moist color is 10YR 3/3 or 3/4, 7.5YR 3/3 or 3/4, or 5YR 3/3. Texture is coarse sandy loam, sandy loam, or loam. The content of clay ranges from 12 to 17 percent. The content of gravel is 0 to 5 percent. The content of organic matter is 2 to 8 percent. By sum of cations, base saturation ranges from 50 to 70 percent. Reaction ranges from moderately acid to neutral.

The Bw horizon has dry color of 10YR 5/4 or 7.5YR 5/3 or 5/4. Moist color is 7.5YR 3/3, 3/4, or 4/4. Texture is coarse sandy loam or sandy loam. The content of clay ranges from 16 to 19 percent. The content of gravel is 0 to 5 percent. The content of organic matter is 0.2 to 1.0 percent. By sum of cations, base saturation ranges from 40 to 55 percent. Reaction is moderately acid or slightly acid.

The upper part of the Bt horizon has dry color of 10YR 5/4; 7.5YR 4/6, 5/3, 5/4, or 5/6; or 5YR 5/4. Moist color is 7.5YR 3/3, 3/4, 4/4, or 4/6 or 5YR 3/4 or 4/4. Texture is coarse sandy loam, sandy loam, sandy clay loam, or gravelly sandy clay loam. The content of clay ranges from 18 to 23 percent. The content of gravel is 0 to 15 percent. The content of organic matter is 0 to 0.2 percent. By sum of cations, base saturation ranges from 55 to 74 percent. Reaction ranges from moderately acid to neutral.

The lower part of the Bt horizon has dry color of 7.5YR 5/4, 5/6, or 5/8 or 5YR 5/4. Moist color is 7.5YR 4/4 or 4/6 or 5YR 4/4 or 4/6. Texture is sandy loam, sandy clay loam, or gravelly sandy clay loam. The content of clay ranges from 18 to 33 percent. The content of gravel is 0 to 25 percent. The content of organic matter is 0 to 0.2 percent. By sum of cations, base saturation ranges from 75 to 85 percent. Reaction ranges from moderately acid to neutral.

The BCt horizon has dry color of 10YR 6/4 or 6/6, 7.5YR 5/6 or 6/6, or 5YR 5/6. Moist color is 10YR 5/6; 7.5YR 4/6, 5/4, or 5/6; or 5YR 4/6. Texture is sandy loam, gravelly sandy loam, or sandy clay loam. The content of clay ranges from 16 to 26 percent. The content of gravel is 0 to 25 percent. The content of organic matter is 0 to 0.2 percent. Reaction ranges from moderately acid to neutral.

The C horizon, where it occurs, has dry color of 10YR 6/4, 6/6, or 7/3 or 7.5YR 6/6. Moist color is 10YR 5/3 or 5/4 or 7.5YR 4/6. Texture is sandy loam or fine sandy loam. The content of clay ranges from 12 to 18 percent. The content of gravel is 0 to 10 percent. Reaction ranges from moderately acid to neutral.

Parrott Series

The Parrott series consists of very deep, moderately well drained soils that formed in alluvium derived from mixed rock sources. These soils are on bars on flood plains. Slopes range from 0 to 2 percent. The mean annual precipitation is about 22 inches (559 mm), and the mean annual air temperature is about 63 degrees F (17 degrees C).

Taxonomic class: Fine-silty, mixed, superactive, thermic Fluventic Haploxerepts

Typical Pedon

Parrott silt loam, on a slope of 1 percent, under a cover of walnut trees, at an elevation of 151 feet (46 m). When described on 10/26/1988, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

A1—0 to 2 inches (0 to 4 cm); light brownish gray (2.5Y 6/2) silt loam, very dark grayish brown (2.5Y 3/2) moist; 22 percent clay; moderate thin platy structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine roots; many very fine tubular pores; neutral, pH 7.2 by Hellige-Truog; abrupt smooth boundary.

A2—2 to 8 inches (4 to 20 cm); grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; 23 percent clay; moderate thin and medium platy structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine roots; many very fine irregular and tubular pores; neutral, pH 7.2 by Hellige-Truog; clear smooth boundary.

Bw1—8 to 20 inches (20 to 52 cm); light brownish gray (10YR 6/2) silt loam, dark grayish brown (10YR 4/2) moist; 21 percent clay; weak fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine and fine roots; many very fine irregular and tubular pores; 8 percent silt coatings on surfaces along pores; 1 percent medium dark grayish brown (10YR 4/2) manganese masses and 25 percent medium brown (7.5YR 5/4) oxidized iron masses; neutral, pH 7.2 by Hellige-Truog; clear smooth boundary.

Bw2—20 to 37 inches (52 to 95 cm); light brownish gray (10YR 6/2) silt loam, dark brown (10YR 3/3) moist; 21 percent clay; weak fine subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; few very fine roots; common fine and many very fine tubular pores; 8 percent silt coatings on surfaces along pores; 10 percent medium brown (7.5YR 4/3) oxidized iron masses; neutral, pH 7.2 by Hellige-Truog; clear smooth boundary.

Bw3—37 to 49 inches (95 to 125 cm); brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; 21 percent clay; weak fine subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; few very fine and fine roots; few fine and many very fine tubular pores; 8 percent light brownish gray (10YR 6/2) silt coatings on surfaces along pores; neutral, pH 7.2 by Hellige-Truog; clear smooth boundary.

Bw4—49 to 63 inches (125 to 160 cm); pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; 19 percent clay; weak fine subangular blocky structure; slightly hard,

very friable, slightly sticky, moderately plastic; few fine roots; few fine and many very fine tubular pores; neutral, pH 7.2 by Hellige-Truog; clear smooth boundary. C—63 to 89 inches (160 to 225 cm); yellowish brown (10YR 5/4) silt loam, dark yellowish brown (10YR 3/4) moist; 17 percent clay; massive; slightly hard, very friable, slightly sticky, moderately plastic; few fine roots; few fine and many very fine tubular pores; neutral, pH 7.2 Hellige-Truog.

Type location: Butte County, California; about 3.8 miles northeast of Nord, approximately 2,200 feet north and 1,700 feet east of the intersection of T. 22 N. and 23 N. and R. 1 W. and 2 W.; 39 degrees, 48 minutes, 13 seconds north latitude and 122 degrees, 1 minute, 23 seconds west longitude; NAD27; USGS Quad: Foster Island, California.

Range in Characteristics

The depth of the soils is more than 80 inches (203 cm). The mean annual soil temperature is 60 to 64 degrees F (16 to 18 degrees C). The particle-size control section averages 18 to 27 percent clay. Mineralogy is mixed. The content of organic matter decreases regularly with increasing depth. It ranges from 1 to 5 percent to a depth of 49 inches (124 cm) and is less than 1 percent from 49 to 89 inches (124 to 226 cm). By ammonium acetate, base saturation is 100 percent throughout the profile. A fluctuating water table can occur at a depth of 60 inches (152 cm) or more from December through March. Redoximorphic features, such as iron masses and manganese masses, occur in the Ap and A horizons. Some pedons have a gravelly substratum below a depth of 40 inches (102 cm) and/or have disseminated lime at a depth of 45 to 72 inches (114 to 183 cm).

The A horizon has dry color of 2.5Y 6/2 or 10YR 5/2, 5/3, or 6/3. Moist color is 2.5Y 3/2 or 10YR 3/2, 3/3, 4/2, or 4/3. Texture is silt loam. The content of clay ranges from 18 to 27 percent. Reaction ranges from slightly acid to slightly alkaline.

The Bw horizon has dry color of 10YR 5/3, 5/4, or 6/3. Moist color is 10YR 3/3, 3/4, or 4/3. Texture is silt loam. The content of clay ranges from 18 to 27 percent. Reaction is neutral or slightly alkaline.

The C horizon has dry color of 10YR 5/3, 5/4, or 6/3. Moist color is 10YR 3/3, 3/4, or 4/3. Texture is silt loam, loam, fine sandy loam, sandy loam, clay loam, or silty clay loam. The content of clay ranges from 12 to 30 percent. The content of gravel is 0 to 5 percent. Reaction is neutral or slightly alkaline.

Perkins Series

The Perkins series consists of very deep, well drained soils that formed in alluvium derived from igneous and metamorphic rocks. These soils are on low terraces. Slopes range from 0 to 2 percent. The mean annual precipitation is about 25 inches (635 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Mollic Haploxeralfs

Typical Pedon

Perkins gravelly loam, on a slope of 2 percent, under a cover of yellow starthistle and annual grasses, at an elevation of 135 feet (41 m). When described on 6/8/1994, the soil was dry to a depth of 24 inches (61 cm) and moist from 24 to 73 inches (61 to 185 cm). (Colors are for dry soil unless otherwise noted.)

Ap—0 to 8 inches (0 to 20 cm); strong brown (7.5YR 4/6) gravelly loam, dark brown (7.5YR 3/4) moist; 13 percent clay; strong fine angular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine and coarse roots;

many very fine irregular pores; 25 percent mixed gravel; neutral, pH 7.3 by pH meter 1:1 water; clear smooth boundary.

- Bt1—8 to 24 inches (20 to 61 cm); yellowish red (5YR 4/6) gravelly loam, dark reddish brown (5YR 3/4) moist; 22 percent clay; strong fine angular blocky structure; hard, friable, slightly sticky, slightly plastic; common very fine roots; many very fine irregular pores; 60 percent clay films on faces of peds; 25 percent mixed gravel; neutral, pH 7.1 by pH meter 1:1 water; abrupt smooth boundary.
- Bt2—24 to 38 inches (61 to 97 cm); yellowish red (5YR 5/6) very gravelly sandy clay loam, dark reddish brown (5YR 3/4) moist; 17 percent clay; strong fine angular blocky structure; hard, friable, slightly sticky, slightly plastic; common very fine roots; many very fine irregular pores; 60 percent clay films on faces of peds; 40 percent mixed gravel; neutral, pH 7.0 by pH meter 1:1 water; abrupt smooth boundary.
- BC—38 to 48 inches (97 to 122 cm); yellowish red (5YR 5/6) very gravelly sandy loam, dark reddish brown (5YR 3/4) moist; 12 percent clay; massive; slightly hard, very friable, nonsticky, nonplastic; common very fine roots; many fine irregular pores; 60 percent clay films on rock fragments; 60 percent mixed gravel; neutral, pH 7.1 by pH meter 1:1 water; abrupt smooth boundary.
- C—48 to 73 inches (122 to 185 cm); light brown (7.5YR 6/4) very gravelly sandy loam, brown (7.5YR 4/4) moist; 10 percent clay; massive; slightly hard, very friable, nonsticky, nonplastic; many fine irregular pores; 10 percent clay films on rock fragments; 5 percent fine black (N 2/0) manganese surface coatings; 60 percent mixed gravel; neutral, pH 7.2 by pH meter 1:1 water.

Type location: Butte County, California; about 1.5 miles south of Palermo, approximately 1,700 feet east and 2,300 feet south of the northwest corner of sec. 17, T. 18 N., R. 4 E.; 39 degrees, 35 minutes, 10 seconds north latitude and 121 degrees, 33 minutes, 0 seconds west longitude; NAD27; USGS Quad: Palermo, California.

Range in Characteristics

The depth of the soils is more than 80 inches (203 cm), and the depth to a very gravelly subsoil layer is 16 to 40 inches (41 to 102 cm). The mean annual soil temperature is 63 to 65 degrees F (17 to 18 degrees C). The particle-size control section averages 27 to 35 percent clay and 25 to 30 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur at a depth of 60 to more than 80 inches (152 cm to more than 203 cm) from December through March. Rock fragments on the surface range from 0 to 10 percent gravel.

The Ap horizon has dry color of 7.5YR 3/4 or 4/6 or 5YR 5/6. Moist color is 7.5YR 3/4 or 5YR 3/6. Texture is gravelly loam. The content of clay ranges from 13 to 26 percent. The content of gravel is 15 to 25 percent. The content of organic matter is 1.2 to 2 percent. Reaction is neutral or slightly alkaline.

The Bt horizon has dry color of 7.5YR 4/4 or 5/6 or 5YR 4/6 or 5/6. Moist color is 7.5YR 3/4 or 4/6 or 5YR 3/4, 3/6, 4/4, or 4/6. Texture is gravelly loam, gravelly clay loam, or very gravelly sandy clay loam. The content of clay ranges from 17 to 35 percent. The content of gravel is 15 to 60 percent. The content of organic matter is 0.5 to 0.9 percent. Reaction is neutral or slightly alkaline.

The BC horizon has dry color of 5YR 5/6. Moist color is 5YR 3/4 or 3/6. Texture is very gravelly sandy loam. The content of clay ranges from 12 to 18 percent. The content of gravel is 50 to 60 percent. The content of organic matter is 0 to 0.5 percent. Reaction is neutral or slightly alkaline.

The C horizon has dry color of 7.5YR 5/4 or 6/4. Moist color is 7.5YR 3/4 or 4/4. Texture is very gravelly sandy loam. The content of clay ranges from 10 to 20 percent. The content of gravel is 15 to 60 percent. The content of organic matter is 0 to 0.5 percent. Redoximorphic features occur as surface coatings of manganese. Reaction is neutral or slightly alkaline.

Powderhouse Series

The Powderhouse series consists of moderately deep, well drained soils that formed in tephra, residuum, and colluvium derived from volcanic mudflow, basalt, and andesite. These soils are on the tops and side slopes of ridges and nunataks on volcanic Sierra Nevada and Southern Cascade mountains. Slopes range from 2 to 50 percent. The mean annual precipitation is about 80 inches (2,032 mm), and the mean annual air temperature is about 49 degrees F (9 degrees C).

Taxonomic class: Medial-skeletal, glassy, frigid Humic Haploxerands

Typical Pedon

Powderhouse medial sandy loam, on a northwest-facing slope of 32 percent, under a cover of mixed conifers and shrubs, at an elevation of 4,800 feet (1,463 m). When described on 9/24/1996, the soil was moist throughout. Clay percentages are based on the apparent field texture. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 2 inches (0 to 5 cm); mat of fresh and slightly decomposed needles and twigs.

A1—2 to 4 inches (5 to 10 cm); dark grayish brown (10YR 4/2) medial sandy loam, black (10YR 2/1) moist; 10 percent clay; weak very fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; many very fine and fine roots; many very fine irregular pores; extremely hydrophobic, smeary; 10 percent subrounded andesite gravel; very strongly acid, pH 5.0 by pH meter 1:1 water; NaF pH 10.3; abrupt smooth boundary.

A2—4 to 11 inches (10 to 28 cm); brown (10YR 4/3) medial sandy loam, very dark brown (10YR 2/2) moist; 12 percent clay; weak very fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; many very fine and fine roots; many very fine irregular pores; extremely hydrophobic, smeary; 10 percent subrounded andesite gravel; very strongly acid, pH 5.5 by pH meter 1:1 water; NaF pH 11.0; abrupt smooth boundary.

Bw—11 to 27 inches (28 to 69 cm); pale brown (10YR 6/3) very cobbly medial sandy loam, brown (10YR 4/3) moist; 14 percent clay; weak very fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; many very fine and fine and few medium and coarse roots; common very fine irregular pores; extremely hydrophobic, smeary; 30 percent subangular andesite cobbles and 20 percent subangular andesite gravel; very strongly acid, pH 5.0 by pH meter 1:1 water; NaF pH 11.1; abrupt smooth boundary.

C—27 to 36 inches (69 to 91 cm); pale brown (10YR 6/3) very gravelly medial coarse sandy loam, brown (10YR 4/3) moist; 12 percent clay; weak very fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; many very fine and fine and few medium and coarse roots; common very fine irregular pores; extremely hydrophobic, smeary; 10 percent well rounded andesite cobbles and 50 percent well rounded andesite gravel; very strongly acid, pH 4.8; NaF pH 10.8; abrupt wavy boundary.

Cr—36 to 82 inches (91 to 208 cm); moderately cemented mudflow with imbedded round andesitic gravel and cobbles; few very fine and fine roots matted around rock fragments; matrix can be dug with difficulty; fragments are indurated; few roots in fractures; 40 percent well rounded andesite cobbles and 25 percent well rounded andesite gravel.

Type location: Plumas County, California; about 2 miles south of Camel Peak Lookout, approximately 1,900 feet west and 1,850 feet north of the southeast corner of sec. 8, T. 21 N., R. 8 E.; 39 degrees, 41 minutes, 23.9 seconds north latitude and 121 degrees, 6 minutes, 25.3 seconds west longitude; NAD83; USGS Quad: American House, California.

Range in Characteristics

The depth to paralithic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 40 to 47 degrees F (4 to 8 degrees C). The particle-size control section averages 10 to 15 percent clay and 35 to 80 percent rock fragments, mostly gravel and cobbles. Mineralogy is glassy. By ammonium acetate, base saturation ranges from 10 to 35 percent. P retention is more than 95 to a depth of 36 inches (91 cm). The melanoid index is 1.70. Rock fragments on the surface range from 0 to 10 percent gravel, 0 to 10 percent cobbles, 0 to 10 percent stones, and 0 to 10 percent boulders. Some pedons have a 2C horizon.

The A horizon has dry color of 10YR 4/2 or 4/3 or 7.5YR 3/2 or 4/2. Moist color is 10YR 2/1 or 2/2 or 5YR 2.5/1 or 3/2. Texture is dominantly medial sandy loam or medial fine sandy loam but in some pedons is gravelly medial sandy loam or very gravelly medial sandy loam. The content of clay ranges from 8 to 15 percent. The horizon has 5 to 20 percent gravel, 0 to 5 percent cobbles, and 0 to 10 percent stones. The content of organic matter is 12 to 35 percent. Acid oxalate extractable Al plus $\frac{1}{2}$ Fe ranges from 2.9 to 3.5. The content of glass ranges from 17 to 18 percent. NaF pH is 10.0 to 12.0. Reaction ranges from very strongly acid to slightly acid.

The Bw horizon has dry color of 10YR 4/2, 5/3, 5/4, 6/3, or 7/3 or 7.5YR 5/3. Moist color is 10YR 2/2 or 4/3, 7.5YR 3/3 or 3/4, or 5YR 3/3. Texture is very cobbly medial sandy loam, very gravelly medial sandy loam, extremely cobbly medial sandy loam, or extremely cobbly medial coarse sandy loam. The content of clay ranges from 10 to 18 percent. The horizon has 20 to 40 percent gravel, 10 to 35 percent cobbles, and 10 to 20 percent stones. The content of organic matter is 9 to 12 percent. Acid oxalate extractable Al plus $\frac{1}{2}$ Fe ranges from 1.7 to 2.5. The content of glass ranges from 10 to 30 percent. NaF pH is 11.0 to 11.5. Reaction ranges from very strongly acid to slightly acid.

The C horizon has dry color of 10YR 6/3 or 6/4. Moist color is 10YR 4/3 or 4/4. Texture is very gravelly, extremely gravelly, very cobbly, or extremely cobbly medial coarse sandy loam. The content of clay ranges from 10 to 15 percent. The horizon has 50 to 60 percent gravel, 0 to 35 percent cobbles, and 0 to 20 percent stones. The content of organic matter is 4 to 9 percent. Acid oxalate extractable Al plus $\frac{1}{2}$ Fe ranges from 2.5 to 3.2. The content of glass ranges from 30 to 60 percent or more. NaF pH is 10.0 to 11.0. Reaction is very strongly acid or strongly acid.

Powellton Series

The Powellton series consists of very deep, well drained soils that formed in weathered tephra over residuum and colluvium derived from metadiorite, metavolcanic rocks, gabbro, or diorite. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada mountains. Slopes range from 2 to 70 percent. The mean annual precipitation is about 71 inches (1,803 mm), and the mean annual air temperature is about 53 degrees F (12 degrees C).

Taxonomic class: Fine-loamy, parasesquic, mesic Andic Haplohumults

Typical Pedon

Powellton gravelly loam, on a west-southwest-facing slope of 15 percent, under a cover of mixed conifers, at an elevation of 3,345 feet (1,020 m). When described on 11/28/1995, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 0.5 inch (0 to 1 cm); pine litter.

Oe—0.5 inch to 2 inches (1 to 4 cm); partially decomposed pine litter.

A—2 to 4 inches (4 to 9 cm); reddish brown (5YR 5/3) gravelly loam, dark reddish brown (5YR 3/3) moist; 25 percent clay; strong fine granular structure; soft, very

- friable, slightly sticky, slightly plastic; many very fine and fine roots; many very fine to medium and common coarse irregular and tubular pores; noneffervescent; 25 percent gravel; moderately acid, pH 6.0 by pH meter 1:1 water; NaF pH 10.5; clear smooth boundary.
- Bt1—4 to 9 inches (9 to 22 cm); reddish brown (5YR 5/4) gravelly loam, dark reddish brown (5YR 3/4) moist; 23 percent clay; strong fine and medium granular structure; soft, very friable, slightly sticky, moderately plastic; many very fine to medium roots; many very fine and fine and common medium and coarse irregular and tubular pores; few distinct discontinuous clay films on faces of peds and in pores; noneffervescent; 21 percent gravel and 5 percent subrounded cobbles; moderately acid, pH 5.7 by pH meter 1:1 water; NaF pH 10.5; clear smooth boundary.
- Bt2—9 to 15 inches (22 to 37 cm); yellowish red (5YR 5/6) loam, red (2.5YR 4/6) moist; 26 percent clay; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky, moderately plastic; many very fine to medium and common coarse roots; many very fine to medium and common coarse irregular and tubular pores; many distinct discontinuous clay films on faces of peds and in pores; noneffervescent; 13 percent gravel; moderately acid, pH 5.6 by pH meter 1:1 water; NaF pH 10.0; clear smooth boundary.
- Bt3—15 to 24 inches (37 to 60 cm); reddish yellow (5YR 6/6) clay loam, red (2.5YR 4/6) moist; 28 percent clay; strong medium subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; common very fine and coarse and many fine and medium roots; many very fine and fine and common medium and coarse tubular pores; many distinct discontinuous clay films on faces of peds and in pores; noneffervescent; 5 percent gravel; strongly acid, pH 5.5 by pH meter 1:1 water; NaF pH 9.6; clear smooth boundary.
- Bt4—24 to 30 inches (60 to 75 cm); reddish yellow (5YR 7/6) clay loam, red (2.5YR 4/6) moist; 29 percent clay; strong medium subangular blocky structure; moderately hard, firm, slightly sticky, moderately plastic; common very fine, fine, and coarse and many medium roots; many very fine and fine and common medium and coarse tubular pores; many distinct continuous clay films on faces of peds and in pores; noneffervescent; 2 percent gravel; moderately acid, pH 5.6 by pH meter 1:1 water; NaF pH 9.4; clear smooth boundary.
- Bt5—30 to 41 inches (75 to 105 cm); reddish yellow (7.5YR 7/6) silt loam, strong brown (7.5YR 5/8) moist; 24 percent clay; moderate medium subangular blocky structure; moderately hard, firm, slightly sticky, moderately plastic; common very fine and coarse and many fine and medium roots; many very fine and fine and common medium and coarse tubular pores; many distinct continuous clay films on faces of peds and in pores; noneffervescent; 2 percent gravel; strongly acid, pH 5.5 by pH meter 1:1 water; NaF pH 9.3; gradual smooth boundary.
- Bt6—41 to 61 inches (105 to 156 cm); reddish yellow (7.5YR 7/6) loam, strong brown (7.5YR 5/8) moist; 17 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; common very fine to medium roots; many very fine and fine and common medium and coarse tubular pores; common faint discontinuous clay films on faces of peds and in pores; noneffervescent; strongly acid, pH 5.4 by pH meter 1:1 water; gradual smooth boundary.
- Bt7—61 to 83 inches (156 to 212 cm); reddish yellow (7.5YR 8/6) loam, strong brown (7.5YR 5/8) moist; 18 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine and fine roots; common very fine and fine tubular pores; common prominent discontinuous red (2.5YR 4/6) and common faint discontinuous clay films on faces of peds and in pores; noneffervescent; strongly acid, pH 5.3 by pH meter 1:1 water.

Type location: Butte County, California; about 0.5 mile north of Lovelock, approximately 800 feet south and 400 feet east of the northwest corner of sec. 31, T. 24 N., R. 4 E.; 39 degrees, 54 minutes, 59.7 seconds north latitude and 121 degrees, 34 minutes, 34.7 seconds west longitude; NAD27; USGS Quad: Stirling City, California.

Range in Characteristics

The depth to bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 54 to 56 degrees F (12 to 13 degrees C). The soil moisture control section is dry in all parts from about July to October (about 90 days). The particle-size control section averages 27 to 35 percent clay and 0 to 25 percent rock fragments, mostly gravel. Mineralogy is parasesquic. Acid oxalate extractable Al plus $\frac{1}{2}$ Fe ranges from 1 to 1.6 to a depth of 15 inches (38 cm). Rock fragments on the surface range from 0 to 35 percent gravel and 0 to 5 percent cobbles.

The A horizon has dry color of 5YR 4/6, 5/3, 5/4, or 6/4 or 7.5YR 4/6, 5/4, 6/6, or 7/4. Moist color is 5YR 3/3, 4/3, 3/4, or 4/4; 7.5YR 3/3, 3/4, 4/3, or 4/4; or 2.5YR 2/4, 3/4, or 4/6. Texture is loam, silt loam, gravelly loam, very gravelly loam, gravelly sandy loam, or very gravelly sandy loam. The content of clay ranges from 18 to 27 percent. The content of gravel is 2 to 45 percent. The content of organic matter is 8 to 13 percent. By sum of cations, base saturation ranges from 35 to 45 percent. By ammonium acetate, CEC ranges from 20 to 30. NaF pH is 9.8 to 11. Reaction ranges from strongly acid to slightly acid.

The upper part of the Bt horizon has dry color of 7.5YR 4/6, 5/6, or 5/8 or 5YR 5/4, 4/6, 5/6, 6/4, 6/6, 6/8, or 7/6. Moist color is 7.5YR 3/4, 4/4, 4/6, or 5/6; 5YR 3/4, 4/3, 4/4, 4/6, 5/6, or 5/8; or 2.5YR 4/6. Texture is loam, gravelly loam, clay loam, or silty clay loam. The content of clay ranges from 22 to 35 percent. The content of gravel is 2 to 20 percent, and the content of cobbles 0 to 15 percent. The content of organic matter is 0.5 to 7 percent. By sum of cations, base saturation ranges from 25 to 35 percent. By ammonium acetate, CEC ranges from 8 to 20. NaF pH is 9.2 to 10.5. Reaction ranges from very strongly acid to slightly acid.

The lower part of the Bt horizon has dry color of 5YR 4/6, 4/8, 5/6, or 6/4; 7.5YR 6/6, 7/6, or 8/6; or 10YR 7/6 or 8/6. Moist color is 2.5YR 4/4, 4/6, 4/8, or 5/6; 5YR 4/6, 5/6, or 5/8; or 7.5YR 5/6, 5/8, 6/8, or 7/8. Texture is silt loam, loam, clay loam, silty clay loam, gravelly loam, or gravelly clay loam. The content of clay ranges from 17 to 35 percent. The content of gravel is 0 to 25 percent, and the content of cobbles is 0 to 25 percent. The content of organic matter is 0.1 to 1 percent. By sum of cations, base saturation ranges from 10 to 30 percent. By ammonium acetate, CEC ranges from 4 to 12. NaF pH is 9.0 to 9.8. Reaction ranges from very strongly acid to moderately acid.

Rackerby Series

The Rackerby series consists of shallow, well drained soils that formed in residuum and colluvium derived from intrusive igneous rocks, mainly quartz diorite. These soils are on side slopes on plutons on Sierra Nevada foothills. Slopes range from 15 to 30 percent. The mean annual precipitation is about 35 inches (889 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Loamy-skeletal, mixed, active, thermic, shallow Typic Haploxerepts

Typical Pedon

Rackerby very gravelly sandy loam, on an east-facing slope of 21 percent, under a cover of blue oak, foothill pine, interior live oak, buckbrush, wild oat, rattlesnake brome, hedgehog dogtail, and Italian ryegrass, at an elevation of 1,770 feet (540 m).

When described on 9/14/1999, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

- A—0 to 2 inches (0 to 5 cm); dark yellowish brown (10YR 4/4) very gravelly sandy loam, dark brown (10YR 3/3) moist; 15 percent clay; moderate very fine and fine subangular blocky structure; slightly hard, very friable, nonsticky, nonplastic; many very fine roots; many very fine tubular pores; 40 percent subangular gravel; slightly acid, pH 6.4 by Hellige-Truog; abrupt smooth boundary.
- AB—2 to 5 inches (5 to 13 cm); dark yellowish brown (10YR 4/4) gravelly sandy loam, dark yellowish brown (10YR 3/4) moist; 18 percent clay; moderate fine and medium subangular blocky structure; moderately hard, friable, slightly sticky, slightly plastic; many very fine roots; many very fine tubular pores; 30 percent subangular gravel; slightly acid, pH 6.4 by Hellige-Truog; clear wavy boundary.
- Bw—5 to 13 inches (13 to 33 cm); yellowish brown (10YR 5/4) very gravelly sandy loam, dark yellowish brown (10YR 4/6) moist; 20 percent clay; strong medium subangular blocky structure; moderately hard, friable, slightly sticky, slightly plastic; common very fine roots; many very fine and fine tubular pores; 5 percent subangular cobbles and 35 percent subangular gravel; slightly acid, pH 6.3 by Hellige-Truog; clear smooth boundary.
- Cr—13 inches (33 cm); weakly cemented quartz diorite bedrock.

Type location: Butte County, California; about 2.4 miles southwest of Hurlerton, approximately 2,000 feet south and 2,600 feet west of the northeast corner of sec. 34, T. 19 N., R. 5 E.; 39 degrees, 27 minutes, 46.71 seconds north latitude and 121 degrees, 23 minutes, 57.82 seconds west longitude; NAD83; USGS Quad: Bangor, California.

Range in Characteristics

The depth to paralithic bedrock is 10 to 20 inches (25 to 51 cm). The mean annual soil temperature is 59 to 63 degrees F (16 to 17 degrees C). The soil moisture control section is dry in all parts from about June through October (about 165 days). The particle-size control section averages 10 to 18 percent clay and 35 to 60 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. Rock fragments on the surface range from 0 to 20 percent gravel, 0 to 5 percent cobbles, and 0 to 5 percent stones. Some pedons have a BA horizon.

The A horizon has dry color of 7.5YR 4/4, 4/6, or 5/4 or 10YR 4/4. Moist color is 7.5YR 3/3 or 3/4 or 10YR 3/3. Texture is gravelly loam, gravelly sandy loam, very gravelly sandy loam, or gravelly coarse sandy loam. The content of clay ranges from 8 to 16 percent. The horizon has 15 to 40 percent gravel, 0 to 10 percent cobbles, and 0 to 5 percent stones. By sum of cations, base saturation ranges from 60 to 70 percent. The content of organic matter is 3 to 5 percent. Reaction is slightly acid.

The AB horizon has dry color of 7.5YR 4/4, 4/6, 5/4, or 5/6 or 10YR 4/4. Moist color is 7.5YR 3/3, 3/4, or 4/4 or 10YR 3/4. Texture is gravelly loam, very gravelly loam, gravelly sandy loam, very gravelly sandy loam, or gravelly coarse sandy loam. The content of clay ranges from 10 to 20 percent. The horizon has 25 to 45 percent gravel, 0 to 10 percent cobbles, and 0 to 5 percent stones. By sum of cations, base saturation ranges from 60 to 70 percent. The content of organic matter is 1.5 to 3 percent. Reaction is slightly acid.

The Bw horizon has dry color of 7.5YR 4/6, 5/4, or 5/6 or 10YR 5/4. Moist color is 7.5YR 3/4, 4/4, or 4/6 or 10YR 4/6. Texture is very cobbly loam, very gravelly sandy loam, extremely cobbly sandy loam, or very gravelly coarse sandy loam. The content of clay ranges from 10 to 20 percent. The horizon has 10 to 45 percent gravel, 5 to 70 percent cobbles, and 0 to 5 percent stones. By sum of cations, base saturation ranges from 60 to 74 percent. The content of organic matter is 0.2 to 1.0 percent. Reaction is slightly acid.

Redbone Series

The Redbone series consists of deep, well drained soils that formed in tephra over residuum derived from volcanic rocks. These soils are on the top of volcanic ridges in the Cascade Mountains. Slopes range from 2 to 30 percent. The mean annual precipitation is about 70 inches (1,778 mm), and the mean annual air temperature is about 51 degrees F (11 degrees C).

Taxonomic class: Medial over loamy-skeletal, amorphic over isotic, mesic Ultic Haploxerands

Typical Pedon

Redbone gravelly medial sandy loam, on a south-southwest-facing slope of 10 percent, under a cover of white fir, ponderosa pine, Douglas-fir, incense cedar, and sugar pine, at an elevation of 4,600 feet (1,402 m). When described on 8/7/1997, the soil was dry throughout. Clay percentages are based on the apparent field texture. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 3 cm); needles and twigs.

Oe—1 to 2 inches (3 to 4 cm); partially decomposed needles and twigs.

A—2 to 4 inches (4 to 9 cm); reddish brown (5YR 5/4) gravelly medial sandy loam, dark reddish brown (2.5YR 3/4) moist; 14 percent clay; weak fine granular structure; loose, very friable, nonsticky, nonplastic; many very fine and common fine roots; many very fine to medium irregular and tubular pores; noneffervescent; 30 percent gravel; slightly acid, pH 6.3 by pH meter 1:1 water; NaF pH 10.6; abrupt smooth boundary.

Bt1—4 to 7 inches (9 to 19 cm); reddish brown (5YR 5/4) gravelly medial sandy loam, dark reddish brown (2.5YR 3/4) moist; 16 percent clay; weak fine subangular blocky structure; loose, very friable, nonsticky, nonplastic; many very fine to medium roots; many very fine irregular and tubular pores; few clay bridges between sand grains; noneffervescent; 10 percent gravel; slightly acid, pH 6.3 by pH meter 1:1 water; NaF pH 10.5; clear smooth boundary.

Bt2—7 to 17 inches (19 to 42 cm); red (2.5YR 5/6) gravelly medial fine sandy loam, red (2.5YR 4/6) moist; 17 percent clay; weak fine and medium subangular blocky structure; loose, very friable, nonsticky, nonplastic; common very fine, many fine and medium, and few coarse roots; many very fine and fine irregular and tubular pores; common clay bridges between sand grains; noneffervescent; 30 percent gravel and 5 percent cobbles; moderately acid, pH 6.0 by pH meter 1:1 water; NaF pH 10.2; clear smooth boundary.

Bt3—17 to 28 inches (42 to 70 cm); brown (7.5YR 5/4) very gravelly fine sandy loam, reddish brown (5YR 4/3) moist; 17 percent clay; weak fine and medium subangular blocky structure; loose, very friable, nonsticky, nonplastic; common very fine, many fine and medium, and few coarse roots; many very fine and fine irregular and tubular pores; common clay bridges between sand grains; noneffervescent; 35 percent gravel and 5 percent cobbles; moderately acid, pH 5.6 by pH meter 1:1 water; NaF pH 10.0; clear smooth boundary.

Bt4—28 to 41 inches (70 to 103 cm); brown (7.5YR 5/4) very gravelly coarse sandy loam, reddish brown (5YR 4/3) moist; 17 percent clay; weak fine subangular blocky structure; loose, very friable, nonsticky, nonplastic; common very fine to medium and few coarse roots; many very fine and fine irregular and tubular pores; few clay bridges between sand grains; noneffervescent; 45 percent gravel; moderately acid, pH 6.0 by pH meter 1:1 water; NaF pH 10.1; clear smooth boundary.

Bt5—41 to 54 inches (103 to 138 cm); brown (7.5YR 5/4) very gravelly coarse sandy loam, brown (7.5YR 4/4) moist; 15 percent clay; weak fine granular structure;

loose, very friable, nonsticky, nonplastic; common very fine and fine and few coarse roots; many very fine and fine irregular and tubular pores; few clay bridges between sand grains; noneffervescent; 50 percent gravel; slightly acid, pH 6.1 by pH meter 1:1 water; NaF pH 10.4; clear smooth boundary.

Cr—54 inches (138 cm); very weakly cemented, weathered mudflow bedrock; roots and fractures occurring more than 4 inches (10 cm) apart.

Type location: Butte County, California; about 1.7 miles east of Lomo, approximately 1,600 feet west and 2,400 feet north of the southwest corner of sec. 7, T. 25 N., R. 3 E.; in an unsectionized area; 40 degrees, 02 minutes, 20.64 seconds north latitude and 121 degrees, 35 minutes, 1.02 seconds west longitude; NAD83; USGS Quad: Butte Meadows, California.

Range in Characteristics

The depth to paralithic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 47 to 54 degrees F (8 to 12 degrees C). The soil moisture control section is dry in all parts from about July to October (about 90 days). The particle-size control section averages 10 to 18 percent clay and 15 to 35 percent rock fragments, mostly gravel, in the upper part and 15 to 22 percent clay and 35 to 50 percent rock fragments, mostly gravel, in the lower part. Mineralogy is amorphous over isotic. Acid oxalate extractable Al plus $\frac{1}{2}$ Fe ranges from 2.2 to 2.6 to a depth of 16 inches (41 cm). P retention ranges from 85 to 96 percent throughout the profile. By sum of cations, base saturation ranges from 28 to 43 percent throughout the profile. Rock fragments on the surface range from 10 to 35 percent gravel, 0 to 15 percent cobbles, and 0 to 10 percent stones.

The A horizon has dry color of 7.5YR 4/3, 5/4, 6/3, or 6/4 or 5YR 5/4 or 6/3. Moist color is 7.5YR 3/2 or 3/3, 5YR 3/3 or 4/3, or 2.5YR 3/4. Texture is gravelly medial sandy loam, very gravelly medial sandy loam, or gravelly medial fine sandy loam. The content of clay ranges from 10 to 16 percent. The horizon has 15 to 30 percent gravel, 0 to 5 percent cobbles, and 0 to 5 percent stones. The content of organic matter is 8 to 12 percent. NaF pH is 10 to 11.5. Reaction ranges from strongly acid to slightly acid.

The upper part of the Bt horizon has dry color of 7.5YR 5/4, 5/6, or 6/4; 5YR 5/4, 5/6, 6/4, or 6/6; or 2.5YR 5/6. Moist color is 7.5YR 3/3; 5YR 3/3, 4/3, 4/4, or 4/6; or 2.5YR 3/3, 3/4, or 4/6. Texture is gravelly medial sandy loam, very gravelly medial sandy loam, gravelly medial fine sandy loam, or gravelly medial loam. The content of clay ranges from 12 to 18 percent. The content of gravel is 15 to 35 percent, the content of cobbles is 0 to 5 percent, and the content of stones is 0 to 5 percent. The content of organic matter is 2 to 6 percent. NaF pH is 10 to 11.5. Reaction ranges from strongly acid to slightly acid.

The lower part of the Bt horizon has dry color of 10YR 5/4, 6/6, or 7/6 or 7.5YR 5/4, 5/6, or 6/4. Moist color is 10YR 4/3 or 4/4, 7.5YR 4/4 or 5/4, or 5YR 4/3. Texture is very gravelly sandy loam, extremely gravelly sandy loam, very gravelly fine sandy loam, very gravelly coarse sandy loam, or very gravelly sandy clay loam. The content of clay ranges from 15 to 22 percent. The content of gravel is 35 to 75 percent, the content of cobbles is 0 to 10 percent, and the content of stones is 0 to 10 percent. The content of organic matter is 0.5 to 2 percent. NaF pH is 9.7 to 10.5. Reaction ranges from very strongly acid to slightly acid.

Redding Series

The Redding series consists of moderately deep, moderately well drained soils that formed in alluvium derived from mixed rock sources. These soils are on mounds on intermediate terraces. Slopes range from 0 to 9 percent. The mean annual

precipitation is about 22 inches (559 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine, mixed, active, thermic Abrupt Durixeralfs

Typical Pedon

Redding loam, on an east-facing slope of 1 percent, under a cover of annual grasses and forbs, at an elevation of 105 feet (32 m). When described on 5/13/1992, the soil was moist below a depth of 10 inches (25 cm). (Colors are for dry soil unless otherwise noted.)

- A1—0 to 4 inches (0 to 10 cm); reddish yellow (7.5YR 6/6) loam, dark brown (7.5YR 3/4) moist; 22 percent clay; strong medium angular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; many very fine roots; few very fine irregular pores; 10 percent fine distinct light yellowish brown (10YR 6/4 dry) and brown (7.5YR 4/4 moist) oxidized iron masses; 5 percent rounded gravel; neutral, pH 6.8; abrupt smooth boundary.
- A2—4 to 11 inches (10 to 28 cm); strong brown (7.5YR 5/6) loam, strong brown (5YR 4/6) moist; 24 percent clay; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; common very fine roots; few very fine tubular pores; 10 percent fine distinct reddish yellow (7.5YR 6/6 dry) and reddish yellow (7.5YR 6/8 moist) oxidized iron masses; 5 percent rounded gravel; neutral, pH 6.8; clear smooth boundary.
- BA—11 to 24 inches (28 to 61 cm); yellowish red (5YR 5/6) loam, dark reddish brown (5YR 3/4) moist; 24 percent clay; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; few very fine roots; common very fine irregular pores; 20 percent clay films on all faces of peds; 1 percent fine faint reddish yellow (5YR 6/6 dry) and yellowish red (5YR 4/6 moist) oxidized iron masses; 5 percent rounded gravel; neutral, pH 6.8; abrupt smooth boundary.
- 2Bt—24 to 35 inches (61 to 89 cm); yellowish red (5YR 5/6) clay, yellowish red (5YR 4/6) moist; 50 percent clay; moderate medium angular blocky structure; very hard, firm, moderately sticky, moderately plastic; few very fine tubular pores; 50 percent clay films on all faces of peds; 10 percent manganese coatings; 5 percent rounded gravel; neutral, pH 7.3; abrupt smooth boundary.
- 3Bqm—35 to 40 inches (89 to 102 cm); very gravelly very strongly cemented duripan; cemented by silica; 60 percent rounded gravel.

Type location: Butte County, California; about 3.2 miles northwest of Honcut, approximately 150 feet south and 2,000 feet east of the northwest corner of sec. 6, T. 18 N., R. 4 E.; 39 degrees, 21 minutes, 51 seconds north latitude and 121 degrees, 34 minutes, 6 seconds west longitude; NAD27; USGS Quad: Honcut, California.

Range in Characteristics

Depth to the duripan is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 63 to 65 degrees F (17 to 18 degrees C). The particle-size control section averages 35 to 50 percent clay and 5 to 30 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur between the top of the duripan and 16 inches (41 cm) below the surface of the soil from December through April. Rock fragments on the surface range from 0 to 5 percent gravel. Some pedons have an AB or Bt horizon.

The A horizon has dry color of 7.5YR 5/4, 5/6, 6/4, or 6/6 or 5YR 5/6. Moist color is 7.5YR 3/3, 3/4, or 4/6; 5YR 3/4, 4/4, or 4/6; or 2.5YR 3/4. Texture is loam, gravelly loam, sandy loam, gravelly sandy loam, sandy clay loam, or gravelly sandy clay loam. The content of clay ranges from 12 to 26 percent. The content of gravel is 5 to 20 percent. The content of organic matter is 0.2 to 2 percent. By sum of cations, base saturation ranges from 60 to 75 percent. Redoximorphic features occur as oxidized

iron masses with dry color of 7.5YR 5/6, 5/8, 6/6, or 7/4 or 10YR 6/4 and manganese nodules with dry color of N 2/0. Reaction ranges from moderately acid to neutral.

The BA horizon has dry color of 7.5YR 5/4 or 5YR 5/6. Moist color is 7.5YR 3/4 or 5YR 3/4. Texture is loam, gravelly loam, sandy loam, or gravelly sandy loam. The content of clay ranges from 15 to 26 percent. The horizon has 0 to 30 percent gravel and 0 to 5 percent cobbles. The content of organic matter is 0.1 to 0.5 percent. By sum of cations, base saturation ranges from 60 to 75 percent. Redoximorphic features occur as oxidized iron masses with dry color of 7.5YR 7/4, 10YR 6/4, or 5YR 6/6 and manganese nodules with dry color of N 2/0. Reaction ranges from moderately acid to neutral.

The Bt horizon, where it occurs, has dry color of 7.5YR 5/4 or 5YR 5/6. Moist color is 5YR 4/4 or 4/6 or 2.5YR 3/4. Texture is loam, gravelly loam, cobbly loam, clay loam, gravelly clay loam, cobbly clay loam, sandy clay loam, gravelly sandy clay loam, or cobbly sandy clay loam. The content of clay ranges from 18 to 34 percent. The horizon has 0 to 20 percent gravel and 0 to 10 percent cobbles. By sum of cations, base saturation ranges from 60 to 75 percent. Redoximorphic features occur as manganese nodules with dry color of N 2/0. Reaction is slightly acid or neutral.

The 2Bt horizon has dry color of 7.5YR 5/4, 5YR 5/6, or 2.5YR 4/6. Moist color is 5YR 4/4 or 4/6 or 2.5YR 3/4 or 3/6. Texture is clay, gravelly clay, or cobbly clay. The content of clay ranges from 40 to 50 percent. The horizon has an abrupt upper boundary with an absolute clay increase of 15 to 30 percent. It has 0 to 35 percent gravel and 0 to 20 percent cobbles. The content of organic matter is 0.5 to 1 percent. By sum of cations, base saturation ranges from 75 to 95 percent. Redoximorphic features occur as manganese nodules with dry color of N 2/0. Reaction is slightly acid or neutral.

The 3Bqm horizon has moist color of 10YR 3/4. It is very strongly cemented or indurated by silica. The content of gravel is 5 to 60 percent. The content of organic matter is 0 to 0.2 percent. Redoximorphic features occur as manganese coatings with color of N 2/0. Reaction is neutral.

Redsluff Series

The Redsluff series consists of very deep, moderately well drained soils that formed in overbank alluvium over channel alluvium derived from dominantly volcanic rocks. These soils are on low fan terraces. Slopes range from 0 to 2 percent. The mean annual precipitation is about 24 inches (610 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Mollic Haploxeralfs

Typical Pedon

Redsluff gravelly loam, on a slope of less than 1 percent, under a cover of annual grasses, at an elevation of 184 feet (56 m). When described on 5/14/1997, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Ap—0 to 2 inches (0 to 5 cm); light brown (7.5YR 6/3) gravelly loam, dark reddish brown (5YR 3/3) moist; 20 percent clay; weak medium subangular blocky structure parting to strong fine granular; slightly hard, friable, slightly sticky, slightly plastic; many very fine and few fine roots; many fine to coarse vesicular and tubular pores; 25 percent gravel; noneffervescent; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

Bt1—2 to 5 inches (5 to 13 cm); light brown (7.5YR 6/3) gravelly loam, dark reddish brown (5YR 3/3) moist; 24 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine and few fine roots; common fine and medium tubular pores; common distinct

- continuous clay films on faces of peds; 25 percent gravel; noneffervescent; slightly acid, pH 6.5 by Hellige-Truog; clear wavy boundary.
- Bt2—5 to 12 inches (13 to 31 cm); brown (7.5YR 5/3) gravelly clay loam, dark reddish brown (5YR 3/3) moist; 28 percent clay; moderate medium subangular blocky structure; hard, very firm, moderately sticky, moderately plastic; common very fine and fine roots; many fine and medium tubular pores; many distinct continuous clay films on faces of peds; 15 percent gravel; noneffervescent; neutral, pH 6.7 by Hellige-Truog; gradual smooth boundary.
- Bt3—12 to 21 inches (31 to 53 cm); brown (7.5YR 5/3) gravelly loam, dark reddish brown (5YR 3/3) moist; 26 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine and fine roots; many very fine to medium tubular pores; many distinct continuous clay films throughout; 30 percent gravel; noneffervescent; neutral, pH 6.7 by Hellige-Truog; gradual smooth boundary.
- Bt4—21 to 29 inches (53 to 74 cm); light brown (7.5YR 6/3) gravelly loam, dark reddish brown (5YR 3/3) moist; 21 percent clay; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; common very fine and fine roots; many very fine and fine tubular pores; many distinct continuous clay films on faces of peds; 25 percent gravel; noneffervescent; neutral, pH 6.8 by Hellige-Truog; clear wavy boundary.
- Bt5—29 to 37 inches (74 to 94 cm); light brown (7.5YR 6/3) gravelly loam, brown (7.5YR 4/3) moist; 19 percent clay; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; common very fine and fine roots; many very fine and fine tubular pores; many distinct continuous clay films on faces of peds and in pores; 25 percent gravel; noneffervescent; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.
- Bt6—37 to 42 inches (94 to 107 cm); light brown (7.5YR 6/3) extremely gravelly sandy loam, brown (7.5YR 4/3) moist; 15 percent clay; weak fine and medium subangular blocky structure; loose, nonsticky, nonplastic; common very fine and fine roots; many very fine and fine tubular pores; common faint continuous clay films on faces of peds; 40 percent gravel and 25 percent cobbles; noneffervescent; neutral, pH 7.0 by Hellige-Truog; abrupt smooth boundary.
- Cq—42 to 80 inches (107 to 203 cm); extremely gravelly loamy sand; 1 percent clay; single grain; loose, nonsticky, nonplastic; few very fine and fine roots; many very fine and fine interstitial pores; common fine and medium irregular rigid silica concretions under rock fragments; 45 percent gravel and 35 percent cobbles; noneffervescent; neutral, pH 7.0 by Hellige-Truog.

Type location: Butte County, California; about 0.38 mile east of the intersection of Keefer Road and Highway 99, approximately 1,160 feet north and 2,450 feet east of the southwest corner of sec. 30, T. 23 N., R. 1 E.; 39 degrees, 48 minutes, 51.9 seconds north latitude and 121 degrees, 54 minutes, 34.7 seconds west longitude; NAD83; USGS Quad: Nord, California.

Range in Characteristics

Depth to the extremely gravelly or coarser substratum is 35 to 65 inches (89 to 165 cm). The mean annual soil temperature is 63 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry in all parts from about May to October (about 150 to 180 days). The particle-size control section averages 25 to 35 percent clay and 2 to 25 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur at a depth of 35 to 80 inches (89 to 203 cm) from December through April. Rock fragments on the surface range from 0 to 15 percent gravel and 0 to 5 percent cobbles. Some pedons have a weakly cemented Bq horizon below a depth of 60 inches (152 cm).

The Ap horizon has dry color of 10YR 5/3, 5/4, 6/3, or 6/4 or 7.5YR 4/3, 4/4, 5/3, or 6/3. Moist color is 7.5YR 3/2 or 3/3, 5YR 3/3, or 10YR 3/2 or 3/3. Texture is loam or gravelly loam. The content of clay ranges from 16 to 24 percent. The content of gravel is 0 to 30 percent. Reaction ranges from slightly acid to slightly alkaline.

The upper part of the Bt horizon has dry color of 7.5YR 5/3, 5/4, or 6/3 or 5YR 5/4. Moist color is 10YR 3/3 or 4/3; 7.5YR 3/2, 3/3, or 4/2; or 5YR 3/3 or 4/3. Texture is loam, clay loam, or the gravelly, cobbly, very gravelly, or very cobbly analogs of those textures. The content of clay ranges from 20 to 35 percent. The content of gravel is 5 to 30 percent, and the content of cobbles is 0 to 30 percent. Reaction ranges from slightly acid to slightly alkaline.

The lower part of the Bt horizon has dry color of 7.5YR 5/4, 6/3, or 6/4 or 5YR 5/4. Moist color is 7.5YR 4/3 or 4/4, 5YR 3/3 or 4/3, or 10YR 4/3. Texture is gravelly loam, extremely gravelly sandy loam, extremely gravelly coarse sandy loam, or extremely cobbly sandy loam. The content of clay ranges from 10 to 20 percent. The content of gravel is 25 to 70 percent, and the content of cobbles is 0 to 45 percent. Reaction is neutral or slightly alkaline.

The Cq horizon has dry color of 7.5YR 6/4 or 7/4. Moist color is 7.5YR 3/3 or 4/3 or 5YR 3/3. Texture is extremely gravelly loamy sand, extremely gravelly coarse sandy loam, or extremely cobbly coarse sandy loam. The content of clay ranges from 1 to 8 percent. The horizon has 10 to 50 percent gravel, 15 to 45 percent cobbles, and 0 to 5 percent stones. Reaction ranges from neutral to moderately alkaline.

Redsluff Taxadjunct

The Redsluff taxadjunct consists of very deep, moderately well drained soils that formed in alluvium derived from volcanic rocks. These soils are on stream terraces on Southern Cascade foothills. Slopes range from 0 to 2 percent. The mean annual precipitation is about 28 inches (711 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine, mixed, superactive, thermic Typic Haploxeralfs

Typical Pedon

Redsluff taxadjunct clay loam, on a south-facing slope of 1 percent, under a cover of Mediterranean barley, yellow starthistle, ryegrass, soft chess, and red brome, at an elevation of 320 feet (98 meters). When described on 5/19/1999, the soil was dry to a depth of 10 inches (25 cm), very slightly moist from 10 to 68 inches (25 to 173 cm), and slightly moist from 68 to 80 inches (173 to 203 cm). (Colors are for dry soil unless otherwise noted.)

Ap—0 to 4 inches (0 to 10 cm); pale brown (10YR 6/3) clay loam, dark grayish brown (10YR 4/2) moist; 29 percent clay; moderate fine to coarse subangular blocky structure; rigid, friable, moderately sticky, moderately plastic; many very fine and fine roots; many very fine to medium tubular and irregular pores; 8 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.

Bt1—4 to 10 inches (10 to 25 cm); brown (10YR 5/3) sandy clay, dark grayish brown (10YR 4/2) moist; 40 percent clay; strong fine and medium subangular blocky structure; hard, friable, moderately sticky, very plastic; common very fine to medium roots; many very fine to medium tubular pores; 80 percent continuous distinct clay films; 2 percent gravel; slightly acid, pH 6.6 by Hellige-Truog; gradual smooth boundary.

Bt2—10 to 21 inches (25 to 53 cm); brown (10YR 5/3) clay loam, dark grayish brown (10YR 4/2) moist; 36 percent clay; strong fine and medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine to medium tubular pores; 80 percent continuous

- distinct clay films; 2 percent gravel; neutral, pH 6.7 by Hellige-Truog; gradual smooth boundary.
- Bt3—21 to 32 inches (53 to 81 cm); pale brown (10YR 6/3) sandy clay loam, dark grayish brown (10YR 4/2) moist; 32 percent clay; moderate fine and medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; common very fine and fine tubular pores; 80 percent continuous distinct clay films; 2 percent gravel; neutral, pH 6.9 by Hellige-Truog; gradual smooth boundary.
- Bt4—32 to 42 inches (81 to 107 cm); very pale brown (10YR 7/3) sandy clay loam, dark grayish brown (10YR 4/2) moist; 30 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; few very fine to medium roots; common very fine and fine tubular pores; 60 percent discontinuous faint clay films; 2 percent gravel; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.
- 2Bt5—42 to 53 inches (107 to 135 cm); pale brown (10YR 6/3) gravelly clay loam, brown (10YR 5/3) moist; 36 percent clay; moderate fine and medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; few very fine to medium roots; common very fine and fine tubular pores; 60 percent discontinuous distinct clay films; 15 percent gravel; neutral, pH 7.2 by Hellige-Truog; clear smooth boundary.
- 2Bt6—53 to 68 inches (135 to 173 cm); very pale brown (10YR 8/3) extremely gravelly sandy clay loam, brown (10YR 5/3) moist; 30 percent clay; massive; slightly hard, friable, moderately sticky, moderately plastic; few very fine and fine roots; few very fine and fine tubular pores; 60 percent discontinuous distinct clay films; 15 percent cobbles and 40 percent gravel; slightly alkaline, pH 7.4 by Hellige-Truog; clear smooth boundary.
- 2Bt7—68 to 75 inches (173 to 191 cm); very pale brown (10YR 8/2) gravelly sandy clay loam, brown (10YR 5/3) moist; 23 percent clay; weak fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; few very fine and fine roots; few very fine and fine tubular pores; 60 percent discontinuous faint clay films; 10 percent cobbles and 20 percent gravel; slightly alkaline, pH 7.8 by Hellige-Truog; clear smooth boundary.
- 3Cr—75 inches (191 cm); extremely weakly cemented volcanic sandstone bedrock; few very fine and fine roots; few very fine and fine tubular pores; slightly alkaline, pH 7.8 by Hellige-Truog.

Type location: Butte County, California; about 0.25 mile northwest of the Clark Road Butte College entrance, approximately 150 feet north and 50 feet west of the southeast corner of sec. 21, T. 21 N., R. 3 E.; 39 degrees, 39 minutes, 17 seconds north latitude and 121 degrees, 38 minutes, 13 seconds west longitude; NAD83; USGS Quad: Hamlin Canyon, California.

Range in Characteristics

The depth to paralithic bedrock is 60 to 85 inches (152 to 216 centimeters). The mean annual soil temperature is 63 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry in all parts from about May to October (about 150 to 180 days). The particle-size control section averages 35 to 43 percent clay and 0 to 5 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur between the top of the bedrock and 36 inches (91 cm) below the surface of the soil from December through April and can occur 60 inches (152 cm) below the surface in May and June. Redoximorphic features, such as oxidized iron masses and manganese masses, occur in the 2Bt and 3Cr horizons. Rock fragments on the surface range from 0 to 5 percent gravel and 0 to 3 percent cobbles.

The Ap horizon has dry color of 10YR 5/2, 6/2, or 6/3. Moist color is 10YR 3/2 or 4/2. Texture is clay loam. The content of clay ranges from 27 to 35 percent. The content of gravel is 0 to 10 percent. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 10YR 5/2, 5/3, 6/2, 6/3, 7/3, or 7/4. Moist color is 10YR 4/2, 4/3, or 5/4. Texture is clay loam, sandy clay loam, sandy clay, clay, gravelly clay loam, or gravelly sandy clay loam. The content of clay ranges from 27 to 45 percent. The content of gravel is 0 to 30 percent. Reaction ranges from slightly acid to slightly alkaline.

The 2Bt horizon has dry color of 10YR 6/3, 6/4, 7/3, 7/4, 8/2, or 8/3 or 2.5Y 7/1 or 7/2. Moist color is 10YR 4/3, 5/3, or 5/4 or 2.5Y 5/3. Texture is gravelly clay loam, gravelly sandy clay loam, very gravelly sandy clay loam, extremely gravelly sandy clay loam, gravelly coarse sandy loam, very gravelly loamy sand, extremely gravelly coarse sand, or extremely gravelly coarse sandy loam. The content of clay ranges from 2 to 36 percent. The horizon has 15 to 50 percent gravel and 0 to 25 percent cobbles. Reaction ranges from slightly acid to moderately alkaline.

The Redsluff taxadjunct is a taxadjunct because it has a fine particle-size control section and is lighter colored than is defined as the range for the series. These differences do not significantly affect the use, management, or interpretations of the soils.

Redswale Series

The Redswale series consists of very shallow, poorly drained soils that formed in alluvium derived from dominantly volcanic rocks. These soils are in swales on high fan terraces and strath terraces on Cascade foothills. Slopes range from 0 to 3 percent. The mean annual precipitation is about 26 inches (660 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Loamy-skeletal, mixed, superactive, thermic, shallow Typic Durixeralfs

Typical Pedon

Redswale cobbly loam, on a north-facing slope of 1 percent, under a cover of annual grasses and forbs, at an elevation of 277 feet (84 m). When described on 3/26/1997, the soil was dry to a depth of 1 inch (2.54 cm) and slightly moist from 1 to 7 inches (2.54 to 18 cm). (Colors are for dry soil unless otherwise noted.)

A—0 to 1 inch (0 to 2.54 cm); reddish yellow (5YR 6/6) cobbly loam, dark reddish brown (2.5YR 3/4) moist; 19 percent clay; weak thin and medium platy structure parting to moderate fine subangular blocky; slightly hard, friable, slightly sticky, slightly plastic; common very fine roots; common very fine vesicular and tubular pores; noneffervescent; 10 percent gravel and 15 percent cobbles; slightly acid, pH 6.3 by Hellige-Truog; clear smooth boundary.

Bt—1 to 7 inches (2.54 to 18 cm); yellowish red (5YR 5/6) very cobbly loam, dark reddish brown (2.5YR 3/4) moist; 26 percent clay; moderate medium subangular blocky structure; moderately hard, firm, slightly sticky, slightly plastic; common very fine roots; common very fine vesicular and tubular pores; many distinct continuous clay films on rock fragments and on faces of peds; common fine irregular very dark gray (N 3/0) soft iron-manganese masses between peds; noneffervescent; 15 percent gravel and 25 percent cobbles; neutral, pH 6.7 by Hellige-Truog; abrupt irregular boundary.

Bqm—7 inches (18 cm); indurated duripan; $\frac{1}{16}$ -inch (2-mm) manganese capping.

Type location: Butte County, California; about 0.5 mile north of Rock Creek Road and 2.3 miles east of Meridian Road, approximately 2,700 feet north and 2,000 feet east of the southwest corner of sec. 16, T. 23 N., R. 1 E.; 39 degrees, 50 minutes,

53.04 seconds north latitude and 121 degrees, 52 minutes, 26.5 seconds west longitude; NAD83; USGS Quad: Richardson Springs Southeast, California.

Range in Characteristics

Depth to the duripan is 4 to 10 inches (10 to 25 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry in all parts from about May to October (about 150 to 180 days). The particle-size control section averages 18 to 25 percent clay and 35 to 60 percent rock fragments, mostly cobbles. Mineralogy is mixed. A fluctuating water table can occur between the top of the duripan and the surface of the soil from November through March. Redoximorphic features, such as iron-manganese masses, iron-manganese concretions, and iron masses, occur in A and Bt horizons. Layers of manganese surface coatings $\frac{1}{16}$ to $\frac{1}{8}$ inch (2 to 3 mm) thick occur on top of the duripan. Rock fragments on the surface range from 5 to 25 percent gravel, 0 to 40 percent cobbles, and 0 to 5 percent stones. Some pedons have an organic mat, $\frac{1}{16}$ inch (2 mm) thick, on the surface.

The A horizon has dry color of 5YR 4/6, 5/6, or 6/6 or 7.5YR 5/4 or 6/4. Moist color is 5YR 3/2, 3/3, 3/4, or 4/3; 7.5YR 3/3; or 2.5YR 3/4. Texture is loam, gravelly loam, cobbly loam, or very cobbly loam. The content of clay ranges from 15 to 22 percent. The horizon has 2 to 20 percent gravel and 0 to 40 percent cobbles. Reaction ranges from moderately acid to neutral.

The Bt horizon has dry color of 5YR 5/6 or 6/4 or 7.5YR 4/4, 5/4, or 6/4. Moist color is 5YR 3/3, 4/3, or 4/4; 7.5YR 3/3; or 2.5YR 3/4. Texture is gravelly loam, very gravelly loam, cobbly loam, or very cobbly loam. The content of clay ranges from 18 to 27 percent. The horizon has 5 to 40 percent gravel and 0 to 35 percent cobbles. Reaction is slightly acid or neutral.

Redtough Series

The Redtough series consists of shallow, somewhat poorly drained soils that formed in alluvium derived from dominantly volcanic rocks. These soils are on mounds and risers on high fan terraces and strath terraces on Cascade foothills. Slopes range from 0 to 15 percent. The mean annual precipitation is about 24 inches (660 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Loamy, mixed, superactive, thermic, shallow Typic Durixeralfs

Typical Pedon

Redtough loam, on a north-facing slope of 1 percent, under a cover of annual grasses and forbs, at an elevation of 278 feet (85 m). When described on 3/26/1997, the soil was dry to a depth of 1 inch (2.54 cm) and slightly moist from 1 to 13 inches (2.54 to 33 cm). (Colors are for dry soil unless otherwise noted.)

- A—0 to 1 inch (0 to 2.54 cm); reddish brown (5YR 5/4) loam, dark reddish brown (5YR 3/3) moist; 19 percent clay; moderate medium granular structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine and common fine roots; many very fine vesicular and tubular pores; noneffervescent; 10 percent gravel; slightly acid, pH 6.2 by Hellige-Truog; abrupt smooth boundary.
- Bt1—1 to 7 inches (2.54 to 18 cm); yellowish red (5YR 5/6) gravelly loam, dark reddish brown (2.5YR 3/4) moist; 25 percent clay; moderate medium subangular blocky structure; moderately hard, firm, slightly sticky, slightly plastic; common very fine roots; common very fine vesicular and tubular pores; few faint patchy manganese or iron-manganese stains on faces of peds and many faint continuous clay films on rock fragments and on faces of peds; noneffervescent;

15 percent gravel and 5 percent cobbles; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

Bt2—7 to 13 inches (18 to 33 cm); yellowish red (5YR 5/6) very cobbly loam, dark reddish brown (2.5YR 3/4) moist; 26 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine roots; many very fine and common fine vesicular and tubular pores; many faint continuous clay films on faces of peds and on rock fragments; noneffervescent; 10 percent gravel and 25 percent cobbles; slightly acid, by 6.5 Hellige-Truog; abrupt irregular boundary.

Bqm—13 inches (33 cm); indurated duripan; 1/8-inch (3-mm) manganese capping.

Type location: Butte County, California; about 0.5 mile north of Rock Creek Road and 2.3 miles east of Meridian Road, approximately 2,700 feet north and 2,000 feet east of the southwest corner of sec. 16, T. 23 N., R. 1 E.; 39 degrees, 50 minutes, 53.04 seconds north latitude and 121 degrees, 52 minutes, 25.9 seconds west longitude; NAD83; USGS Quad: Richardson Springs Southeast, California.

Range in Characteristics

Depth to the duripan is 10 to 20 inches (25 to 51 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry in all parts from about May to November (150 to 180 days). The particle-size control section averages 18 to 27 percent clay and 5 to 35 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. A fluctuating water table can occur between the top of the duripan and 2 inches (5 cm) below the surface of the soil from November through March. Redoximorphic features, such as oxidized iron masses and manganese masses, occur in the Bt horizon. Manganese surface coatings occur in layers 1/8 to 1/4 inch (3 to 5 mm) thick on top of the duripan. Some pedons have soft oxidized iron masses in the A horizon. Rock fragments on the surface range from 0 to 5 percent gravel and 0 to 10 percent cobbles. Some pedons have an organic crust, 1/16 inch (2 mm) thick, on the surface.

The A horizon has dry color of 5YR 4/6, 5/4, 5/6, or 6/6 or 7.5YR 5/4 or 6/4. Moist color is 7.5YR 3/3, 5YR 3/3 or 3/4, or 2.5YR 3/4. Texture is loam or gravelly loam. The content of clay ranges from 15 to 22 percent. The horizon has 0 to 35 percent gravel and 0 to 5 percent cobbles. Reaction ranges from moderately acid to neutral.

The Bt horizon has dry color of 5YR 4/6, 5/4, or 5/6 or 7.5YR 5/4 or 6/4. Moist color is 2.5YR 3/3 or 3/4; 5YR 3/3, 3/4, or 4/3; or 7.5YR 3/3. Texture is loam, gravelly loam, very gravelly loam, cobbly loam, or very cobbly loam. The content of clay ranges from 18 to 27 percent. The horizon has 5 to 40 percent gravel and 0 to 40 percent cobbles. Reaction is slightly acid or neutral.

Retsongulch Series

The Retsongulch series consists of moderately deep, well drained soils that formed in colluvium and residuum derived from coarse grained metamorphic rocks, mainly metadiorite. These soils are on canyon side slopes on metamorphic Sierra Nevada mountains. Slopes range from 50 to 100 percent. The mean annual precipitation is about 73 inches (1,854 mm), and the mean annual air temperature is about 52 degrees F (11 degrees C).

Taxonomic class: Loamy-skeletal, isotic, mesic Typic Haploxerults

Typical Pedon

Retsongulch very gravelly sandy loam, on an east-facing slope of 75 percent, under a cover of Douglas-fir, tanoak, ponderosa pine, canyon live oak, California black oak, sugar pine, incense cedar, and white fir, at an elevation of 3,300 feet (1,006 m). When

described on 8/10/1999, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

- Oi—0 to 1 inch (0 to 3 cm); slightly decomposed plant material; abrupt smooth boundary.
- A—1 to 3 inches (3 to 8 cm); pink (7.5YR 7/3) very gravelly sandy loam, brown (7.5YR 4/3) moist; 18 percent clay; moderate fine granular structure; soft, very friable, slightly sticky, nonplastic; many very fine and fine and few medium roots; many very fine to medium irregular and tubular pores; 5 percent cobbles and 30 percent gravel; moderately acid, pH 5.8 by Hellige-Truog; NaF pH 9.7; clear smooth boundary.
- Bt1—3 to 12 inches (8 to 30 cm); pink (7.5YR 7/4) very gravelly sandy clay loam, brown (7.5YR 5/4) moist; 23 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine to medium and few coarse roots; many very fine and fine and common medium tubular pores; 60 percent continuous distinct clay films; 5 percent stones, 10 percent cobbles, and 25 percent gravel; very strongly acid, pH 4.8 by Hellige-Truog; NaF pH 9.7; gradual smooth boundary.
- Bt2—12 to 21 inches (30 to 53 cm); pink (7.5YR 7/4) extremely gravelly sandy clay loam, yellowish brown (10YR 5/6) moist; 20 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine to coarse roots; many very fine to medium tubular pores; 50 percent discontinuous faint clay films; 10 percent stones, 20 percent cobbles, and 35 percent gravel; very strongly acid, pH 4.8 by Hellige-Truog; NaF pH 9.5; gradual smooth boundary.
- Bt3—21 to 30 inches (53 to 76 cm); very pale brown (10YR 8/4) extremely gravelly sandy loam, light yellowish brown (10YR 6/4) moist; 12 percent clay; weak fine subangular blocky structure; loose, nonsticky, nonplastic; many very fine to coarse roots; many very fine to medium tubular pores; 30 percent discontinuous faint clay films; 10 percent stones, 25 percent cobbles, and 35 percent gravel; very strongly acid, pH 4.8 by Hellige-Truog; NaF pH 9.5; clear wavy boundary.
- R—30 inches (76 cm); strongly cemented metadiorite bedrock.

Type location: Butte County, California; about 0.7 mile east of Stirling City, approximately 1,275 feet south and 1,500 feet east of the northwest corner of sec. 27, T. 24 N., R. 4 E.; 39 degrees, 54 minutes, 43 seconds north latitude and 121 degrees, 31 minutes, 1 second west longitude; NAD83; USGS Quad: Stirling City, California.

Range in Characteristics

The depth to lithic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 47 to 55 degrees F (8 to 13 degrees C). The particle-size control section averages 12 to 27 percent clay and 35 to 60 percent rock fragments, mostly gravel. Mineralogy is isotic. Rock fragments on the surface range from 15 to 80 percent gravel, 0 to 15 percent cobbles, 0 to 10 percent stones, and 0 to 10 percent boulders.

The A horizon has dry color of 7.5YR 6/3, 6/4, or 7/3 or 10YR 5/3, 5/4, or 6/3. Moist color is 7.5YR 4/2, 4/3, or 4/4 or 10YR 3/2, 3/3, or 4/3. Texture is gravelly sandy loam, very gravelly sandy loam, loam, gravelly loam, or very gravelly loam. The content of clay ranges from 10 to 22 percent. The horizon has 5 to 40 percent gravel, 0 to 10 percent cobbles, 0 to 5 percent stones, and 0 to 5 percent boulders. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 7.5YR 5/6, 6/4, 6/6, 7/4, or 7/6 or 10YR 6/4, 7/3, 7/4, or 8/4. Moist color is 7.5YR 4/4, 5/4, or 5/6 or 10YR 4/3, 4/4, 5/4, 5/6, or 6/4. Texture is gravelly sandy loam, very gravelly sandy loam, extremely gravelly sandy loam, gravelly loam, very gravelly loam, very gravelly sandy clay loam, or extremely

gravelly sandy clay loam. The content of clay ranges from 12 to 26 percent. The horizon has 25 to 50 percent gravel, 5 to 35 percent cobbles, 0 to 15 percent stones, and 0 to 10 percent boulders. Reaction ranges from very strongly acid to slightly acid.

Rockstripe Series

The Rockstripe series consists of very shallow, somewhat poorly drained soils that formed in residuum derived from volcanic mudflow breccia. These soils are on ridgetops and side slopes on Cascade foothills. Slopes range from 2 to 100 percent. The mean annual precipitation is about 35 inches (889 mm), and the mean annual air temperature is about 59 degrees F (15 degrees C).

Taxonomic class: Loamy-skeletal, mixed, active, nonacid, mesic Lithic Xerorthents

Typical Pedon

Rockstripe very gravelly loam, on a west-facing slope of 18 percent, under a cover of soft ches, hairy pink, wild oat, California brome, and scattered yellow starthistle, yerba santa, buckbrush, scrub oak, foothill pine, and manzanita, at an elevation of 1,280 feet (390 m). When described on 11/02/1998, the soil was slightly moist throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); light reddish brown (5YR 6/4) very gravelly loam, reddish brown (5YR 4/3) moist; 21 percent clay; moderate fine subangular blocky structure parting to moderate fine granular; slightly hard, friable, slightly sticky, slightly plastic; many very fine roots; many very fine to medium tubular and irregular and common coarse tubular pores; 5 percent stones, 5 percent cobbles, and 25 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.

Bt1—2 to 6 inches (5 to 15 cm); reddish brown (5YR 5/4) very cobbly loam, reddish brown (5YR 4/3) moist; 23 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine and fine roots; common very fine to medium tubular pores; 30 percent discontinuous faint clay films; 20 percent cobbles and 20 percent gravel; slightly acid, pH 6.4 by Hellige-Truog; gradual smooth boundary.

Bt2—6 to 9 inches (15 to 24 cm); reddish brown (5YR 5/4) cobbly loam, reddish brown (5YR 4/3) moist; 25 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine and fine roots; common very fine to medium tubular pores; 50 percent discontinuous distinct clay films; 15 percent cobbles and 15 percent gravel; slightly acid, pH 6.4 by Hellige-Truog; abrupt smooth boundary.

R—9 inches (24 cm); indurated mudflow breccia bedrock.

Type location: Butte County, California; about 0.2 mile west-southwest of the intersection of Highway 32 and Santos Road, approximately 600 feet south and 2,600 feet west of the northeast corner of sec. 2, T. 22 N., R. 2 E.; 39 degrees, 47 minutes, 51 seconds north latitude and 121 degrees, 43 minutes, 21 seconds west longitude; NAD83; USGS Quad: Paradise West, California.

Range in Characteristics

The depth to lithic bedrock is 2 to 10 inches (5 to 25 cm). The mean annual soil temperature is 55 to 59 degrees F (13 to 15 degrees C). The particle-size control section averages 17 to 27 percent clay and 35 to 75 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. Rock fragments on the surface range from 5 to 30 percent gravel, 0 to 20 percent cobbles, 0 to 20 percent stones, and 0 to 10 percent boulders.

The A horizon has dry color of 7.5YR 6/2, 6/3, or 6/4 or 5YR 6/4. Moist color is 7.5YR 3/2, 3/4, or 4/3 or 5YR 4/3. Texture is very gravelly loam, very gravelly sandy clay loam, or very gravelly sandy loam. The content of clay ranges from 15 to 25 percent. The horizon has 25 to 45 percent gravel, 0 to 10 percent cobbles, 0 to 10 percent stones, and 0 to 10 percent boulders. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 7.5YR 5/4, 6/3, 6/4, or 7/3 or 5YR 5/4. Moist color is 7.5YR 3/4, 4/2, or 4/3 or 5YR 4/3. Texture is gravelly loam, very gravelly loam, cobbly loam, very cobbly loam, very gravelly sandy clay loam, or extremely stony sandy loam. The content of clay ranges from 17 to 27 percent. The horizon has 15 to 35 percent gravel, 0 to 30 percent cobbles, 0 to 30 percent stones, and 0 to 10 percent boulders. Reaction is slightly acid.

Rogerville Series

The Rogerville series consists of deep, well drained soils that formed in residuum and colluvium derived from ultramafic rocks, mainly talc schist. These soils are on ultramafic Sierra Nevada mountains. Slopes range from 2 to 70 percent. The mean annual precipitation is about 73 inches (1,854 mm), and the mean annual air temperature is about 53 degrees F (12 degrees C).

Taxonomic class: Fine, mixed, mesic Xeric Kanhaplohums

Typical Pedon

Rogerville silt loam, on a southwest-facing slope of 12 percent, under a cover of mixed conifers, at an elevation of 3,975 feet (1,212 m). When described on 9/7/1995, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 2 inches (0 to 5 cm); slightly decomposed pine litter.

A—2 to 7 inches (5 to 18 cm); light brown (7.5YR 6/4) silt loam, reddish brown (5YR 4/4) moist; 23 percent clay; moderate fine and medium granular structure; slightly hard, very friable, slightly sticky, slightly plastic; many very fine and fine roots; many very fine and fine irregular, many medium irregular, and few coarse tubular pores; 5 percent subangular gravel; moderately acid, pH 6.0 by Hellige-Truog; NaF pH 9.4; clear smooth boundary.

Bt1—7 to 13 inches (18 to 33 cm); strong brown (7.5YR 5/6) silty clay loam, yellowish red (5YR 4/6) moist; 35 percent clay; strong fine angular blocky structure; slightly hard, very friable, moderately sticky, moderately plastic; many very fine and fine and common medium roots; many very fine and fine irregular, many medium irregular, and few coarse tubular pores; 75 percent discontinuous distinct clay films on faces of peds and in pores; 10 percent subangular gravel; moderately acid, pH 6.0 by Hellige-Truog; NaF pH 9.9; clear smooth boundary.

Bt2—13 to 24 inches (33 to 61 cm); strong brown (7.5YR 5/6) silty clay, yellowish red (5YR 4/6) moist; 40 percent clay; strong fine angular blocky structure; slightly hard, very friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine and fine irregular, many medium irregular, and common medium tubular pores; 60 percent discontinuous distinct clay films on faces of peds and in pores; 15 percent subangular gravel; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 9.4; clear smooth boundary.

Bt3—24 to 34 inches (61 to 86 cm); strong brown (7.5YR 5/8) gravelly silty clay loam, yellowish red (5YR 4/6) moist; 38 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common fine and medium and few very fine roots; many very fine and fine irregular and many medium tubular pores; 50 percent discontinuous distinct clay films on faces of peds and in pores; 5 percent subangular cobbles and 15 percent

subangular gravel; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 9.4; clear smooth boundary.

Bt4—34 to 42 inches (86 to 107 cm); strong brown (7.5YR 5/8) gravelly clay loam, strong brown (7.5YR 5/6) moist; 35 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; few fine roots; many fine tubular and many very fine and fine irregular pores; 35 percent discontinuous distinct clay films on faces of peds and in pores; 10 percent subangular cobbles and 25 percent subangular gravel; moderately acid, pH 5.8 by Hellige-Truog; abrupt smooth boundary.

Bt5—42 to 51 inches (107 to 130 cm); strong brown (7.5YR 5/8) extremely gravelly clay loam, strong brown (7.5YR 5/6) moist; 28 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common fine tubular and few very fine and fine irregular pores; 25 percent discontinuous distinct clay films on faces of peds and in pores; 20 percent subangular cobbles and 60 percent subangular gravel; moderately acid, pH 5.8 by Hellige-Truog; abrupt wavy boundary.

Cr—51 to 55 inches (130 to 140 cm); moderately cemented talc schist bedrock.

Type location: Butte County, California; about 4.2 miles northeast of Featherfalls, approximately 1,400 feet east and 100 feet north of the southwest corner of sec. 34, T. 21 N., R. 7 E.; 39 degrees, 37 minutes, 46 seconds north latitude and 121 degrees, 11 minutes, 6 seconds west longitude; NAD27; USGS Quad: Cascade, California.

Range in Characteristics

The depth to paralithic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 47 to 54 degrees F (8 to 12 degrees C). The particle-size control section averages 36 to 50 percent clay and 0 to 20 percent rock fragments, mostly gravel. Mineralogy is mixed. By sum of cations, base saturation ranges from 20 to 35 percent to a depth of 13 inches (33 cm) and is less than 20 percent from 13 to 51 inches (33 to 130 cm). Calcium extractable bases exceed magnesium extractable bases throughout the profile.

The A horizon has dry color of 7.5YR 5/4 or 6/4 or 5YR 5/4, 5/6, or 6/4. Moist color is 7.5YR 4/4 or 5/3; 5YR 3/3, 3/4, 4/4, 4/6, or 5/6; or 2.5YR 3/4 or 4/6. Texture is silt loam, loam, or sandy loam. The content of clay ranges from 11 to 27 percent. The content of organic matter is 3 to 10 percent. The content of gravel is 5 to 15 percent. NaF pH is 9.4 to 11.5. Reaction ranges from very strongly acid to slightly acid.

The upper part of the Bt horizon has dry color of 7.5YR 5/6 or 5YR 5/4, 6/4, or 6/6. Moist color is 5YR 4/4 or 4/6 or 2.5YR 3/4, 4/4, or 4/6. Texture is silty clay loam, clay loam, gravelly silty clay loam, gravelly clay loam, or very gravelly clay loam. The content of clay ranges from 30 to 38 percent. The content of gravel is 10 to 50 percent. The content of organic matter is 3 to 10 percent. NaF pH is 9.5 to 9.9. Reaction is moderately acid or slightly acid.

The middle part of the Bt horizon has dry color of 7.5YR 5/6 or 5/8; 5YR 5/6, 5/8, or 6/6; or 2.5YR 5/6 or 6/6. Moist color is 7.5YR 5/6 or 5/8; 5YR 4/6, 5/6, or 5/8; or 2.5YR 3/6, 4/4, 4/6, 4/8, 5/6, or 6/6. Texture is silty clay, clay, silty clay loam, clay loam, gravelly clay loam, or gravelly silty clay loam. The content of clay ranges from 35 to 65 percent. The content of gravel is 0 to 35 percent, and the content of cobbles is 0 to 10 percent. The content of organic matter is 0.2 to 1 percent. NaF pH is 8.0 to 9.9. Reaction ranges from very strongly acid to slightly acid.

The lower part of the Bt horizon has dry color of 10YR 6/4 or 7/8, 7.5YR 7/8, or 5YR 6/6. Moist color is 10YR 5/4, 7.5YR 5/6 or 7/8, or 2.5YR 4/6 or 5/6. Texture is extremely gravelly clay loam, very gravelly silty clay loam, extremely gravelly silty clay loam, gravelly silty clay, silty clay, or silty clay loam. The content of clay ranges from 28 to 55 percent. The content of gravel is 5 to 80 percent, and the content of cobbles

is 0 to 20 percent. The content of organic matter is 0.2 to 0.5 percent. NaF pH is 8.8 to 9.9. Reaction ranges from very strongly acid to neutral.

Rogerville Taxadjunct

The Rogerville taxadjunct consists of deep, well drained soils that formed in tephra over residuum and colluvium derived from ultramafic rocks, mainly talc schist and soapstone. These soils are on ultramafic Sierra Nevada mountains. Slopes range from 30 to 50 percent. The mean annual precipitation is about 78 inches (1,981 mm), and the mean annual air temperature is about 47 degrees F (8 degrees C).

Taxonomic class: Fine-loamy, mixed, subactive, frigid Andic Haplohumults

Typical Pedon

Rogerville taxadjunct fine sandy loam, on a northwest-facing slope of 42 percent, under a cover of mixed conifers and shrubs, at an elevation of 5,180 feet (1,579 m). When described on 8/21/1997, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oe—0 to 2 inches (0 to 5 cm); moderately decomposed plant material; abrupt smooth boundary.

A—2 to 4 inches (5 to 10 cm); reddish brown (5YR 5/4) fine sandy loam, dark reddish brown (5YR 3/3) moist; 10 percent clay; weak very fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; few very fine roots; many very fine irregular pores; 5 percent soapstone gravel; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 10.5; abrupt smooth boundary.

Bw1—4 to 7 inches (10 to 18 cm); reddish brown (5YR 5/4) gravelly sandy loam, dark reddish brown (5YR 3/4) moist; 15 percent clay; weak very fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; many very fine and fine roots; few very fine tubular pores; 30 percent soapstone gravel; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 10.5; clear smooth boundary.

Bw2—7 to 21 inches (18 to 53 cm); reddish brown (5YR 5/4) very gravelly sandy loam, dark reddish brown (5YR 3/4) moist; 18 percent clay; weak very fine subangular blocky structure; soft, friable, nonsticky, nonplastic; many very fine to medium roots; common very fine tubular pores; 5 percent soapstone cobbles and 40 percent soapstone gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 10.5; clear wavy boundary.

Bw3—21 to 26 inches (53 to 66 cm); brown (7.5YR 5/4) very gravelly loam, dark reddish brown (5YR 3/4) moist; 22 percent clay; moderate very fine subangular blocky structure; soft, friable, slightly sticky, slightly plastic; common very fine to medium roots; common very fine tubular pores; 10 percent soapstone cobbles and 40 percent soapstone gravel; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 10.0; clear smooth boundary.

2Bt1—26 to 33 inches (66 to 84 cm); reddish yellow (7.5YR 7/6) gravelly silt loam, strong brown (7.5YR 5/6) moist; 24 percent clay; moderate fine subangular blocky structure; slightly hard, firm, slightly sticky, slightly plastic; common very fine to medium roots; common very fine tubular pores; 5 percent discontinuous distinct clay films on surfaces along pores; 10 percent soapstone stones and 20 percent soapstone gravel; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 8.8; gradual smooth boundary.

2Bt2—33 to 44 inches (84 to 112 cm); reddish yellow (7.5YR 7/6) gravelly silt loam, strong brown (7.5YR 5/6) moist; 26 percent clay; moderate fine subangular blocky structure; slightly hard, firm, moderately sticky, moderately plastic; few fine to coarse roots; common very fine tubular pores; 5 percent discontinuous distinct clay films on surfaces along pores; 10 percent soapstone gravel and 10 percent

soapstone stones; very strongly acid, pH 5.0 by Hellige-Truog; NaF pH 8.8; gradual smooth boundary.

2Bt3—44 to 57 inches (112 to 145 cm); reddish yellow (7.5YR 7/6) gravelly silty clay loam, strong brown (7.5YR 5/6) moist; 28 percent clay; moderate fine subangular blocky structure; slightly hard, firm, moderately sticky, moderately plastic; few fine to coarse roots; common very fine tubular pores; 5 percent discontinuous distinct clay films on surfaces along pores; 10 percent soapstone stones and 20 percent soapstone gravel; very strongly acid, pH 4.8 by Hellige-Truog; NaF pH 8.0; clear wavy boundary.

2Cr—57 inches (145 cm); moderately cemented soapstone bedrock.

Type location: Plumas County, California; about 1.5 miles north of Camel Peak Lookout, approximately 1,050 feet west and 600 feet south of the northeast corner of sec. 29, T. 22 N., R. 8 E.; 39 degrees, 44 minutes, 33 seconds north latitude and 121 degrees, 6 minutes, 12 seconds west longitude; NAD27; USGS Quad: American House, California.

Range in Characteristics

The depth to paralithic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 40 to 47 degrees F (4 to 8 degrees C). The particle-size control section averages 25 percent clay and 24 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. The content of organic matter is 5 to 10 percent to a depth of 7 inches (18 cm) and is less than 5 percent from 7 to 57 inches (18 to 145 cm). By sum of cations, base saturation ranges from 10 to 25 percent throughout the profile. NaF pH is 10 to 11 to a depth of 5 to 24 inches (13 to 61 cm). Rock fragments on surface range from 0 to 10 percent gravel and 0 to 10 percent cobbles.

The A horizon has dry color of 5YR 5/4 or 7.5YR 4/3. Moist color is 5YR 3/3 or 7.5YR 3/3. Texture is fine sandy loam or sandy loam. The content of clay ranges from 8 to 12 percent. The content of gravel is 0 to 10 percent. Reaction ranges from very strongly acid to slightly acid.

The Bw horizon has dry color of 5YR 5/4 or 7.5YR 5/4. Moist color is 5YR 3/4. Texture is gravelly sandy loam, very gravelly sandy loam, or very gravelly loam. The content of clay ranges from 15 to 22 percent. The horizon has 20 to 40 percent gravel and 0 to 10 percent cobbles. Reaction ranges from strongly acid to slightly acid.

The 2Bt horizon has dry color of 7.5YR 6/6 or 7/6 or 5YR 5/6. Moist color is 7.5YR 4/6 or 5/6 or 5YR 3/4 or 4/6. Texture is gravelly silt loam or gravelly silty clay loam. The content of clay ranges from 24 to 28 percent. The horizon has 10 to 20 percent gravel, 0 to 10 percent cobbles, and 0 to 10 percent stones. Reaction is very strongly acid or strongly acid.

The Rogerville taxadjunct is a taxadjunct because it is frigid rather than mesic. This difference does not significantly affect the use, management, or interpretations of the soils.

Schott Series

The Schott series consists of deep, well drained soils that formed in residuum and colluvium derived from volcanic mudflow breccia. These soils are on ridgetops and side slopes in the Cascade Mountains. Slopes range from 3 to 70 percent. The mean annual precipitation is about 71 inches (1,803 mm), and the mean annual air temperature is about 54 degrees F (12 degrees C).

Taxonomic class: Loamy-skeletal, mixed, semiactive, mesic Andic Haploxeralfs

Typical Pedon

Schott very gravelly loam, on an east-facing slope of 27 percent, under a cover of canyon live oak, ponderosa pine, California black oak, Douglas-fir, incense cedar, whiteleaf manzanita, Pacific poison oak, and California laurel, at an elevation of 2,940 feet (894 m). When described on 6/12/2001, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

- Oi—0 to 2 inches (0 to 5 cm); slightly decomposed plant material; few very fine roots; abrupt smooth boundary.
- A—2 to 6 inches (5 to 15 cm); light brown (7.5YR 6/4) very gravelly loam, brown (7.5YR 4/3) moist; 24 percent clay; strong fine granular structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine and fine and common medium roots; many very fine to medium and common coarse tubular and irregular pores; 5 percent stones, 10 percent cobbles, and 20 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 9.5; abrupt smooth boundary.
- Bt1—6 to 13 inches (15 to 33 cm); reddish brown (5YR 5/4) very gravelly clay loam, reddish brown (5YR 4/3) moist; 28 percent clay; moderate fine and medium granular structure; slightly hard, friable, moderately sticky, moderately plastic; many very fine to medium and common coarse roots; many very fine to medium and common coarse irregular and tubular pores; 80 percent continuous faint clay films; 5 percent stones, 10 percent cobbles, and 20 percent gravel; slightly acid, pH 6.4 by Hellige-Truog; NaF pH 10.0; clear smooth boundary.
- Bt2—13 to 22 inches (33 to 56 cm); reddish brown (5YR 5/4) very cobbly clay loam, reddish brown (5YR 4/4) moist; 30 percent clay; weak fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine to medium and few coarse roots; many very fine to medium tubular pores; 80 percent continuous faint clay films; 10 percent stones, 20 percent gravel, and 30 percent cobbles; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 10.0; clear smooth boundary.
- Bt3—22 to 40 inches (56 to 102 cm); reddish brown (5YR 5/4) extremely gravelly clay loam, reddish brown (5YR 4/4) moist; 32 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine to medium and few coarse roots; many very fine to medium tubular pores; 80 percent continuous faint clay films; 10 percent stones, 30 percent cobbles, and 35 percent gravel; slightly acid, pH 6.2 by Hellige-Truog; NaF pH 9.5; clear smooth boundary.
- Bt4—40 to 50 inches (102 to 127 cm); brown (7.5YR 5/4) extremely gravelly sandy clay loam, brown (7.5YR 4/4) moist; 31 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine to medium tubular pores; 80 percent continuous faint clay films; 10 percent stones, 30 percent cobbles, and 40 percent gravel; slightly acid, pH 6.2 by Hellige-Truog; abrupt smooth boundary.
- R—50 inches (127 cm); strongly cemented mudflow breccia bedrock; slightly acid, pH 6.5 by Hellige-Truog.

Type location: Butte County, California; about 1.25 miles east of Forest Ranch Cemetery, approximately 1,100 feet south and 300 feet west of the northeast corner of sec. 33, T. 24 N., R. 3 E.; 39 degrees, 53 minutes, 58 seconds north latitude and 121 degrees, 38 minutes, 13 seconds west longitude; NAD83; USGS Quad: Cohasset, California.

Range in Characteristics

The depth to lithic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 52 to 59 degrees F (11 to 15 degrees C). The particle-size control

section averages 18 to 35 percent clay and 35 to 75 percent rock fragments, mostly gravel. Mineralogy is mixed. NaF pH is 9.5 to 11.0 to a depth of 20 inches (51 cm). Rock fragments on the surface range from 5 to 25 percent gravel, 0 to 15 percent cobbles, 0 to 15 percent stones, and 0 to 5 percent boulders.

The A horizon has dry color of 7.5YR 6/3 or 6/4 or 5YR 6/4. Moist color is 7.5YR 3/3, 4/3, or 4/4 or 5YR 3/3 or 4/3. Texture is sandy loam, gravelly sandy loam, gravelly loam, or very gravelly loam. The content of clay ranges from 15 to 25 percent. The horizon has 5 to 35 percent gravel, 0 to 10 percent cobbles, and 0 to 5 percent stones. NaF pH is 9.5 to 10.5. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 7.5YR 5/4, 5/6, 6/4, or 6/6; 5YR 5/4, 5/6, or 6/4; or 10YR 6/4. Moist color is 7.5YR 3/3, 4/3, 4/4, 4/6, 5/4, or 5/6 or 5YR 4/3 or 4/4. Texture is the gravelly, very gravelly, extremely gravelly, or very cobbly analogs of sandy loam, sandy clay loam, loam, or clay loam. The content of clay ranges from 18 to 35 percent. The horizon has 15 to 70 percent gravel, 0 to 30 percent cobbles, and 0 to 10 percent stones. NaF pH is 9.0 to 11.0. Reaction ranges from strongly acid to slightly acid.

Shakeridge Series

The Shakeridge series consists of very deep, well drained soils that formed in mixed tephra and colluvium and residuum weathered from Lovejoy basalt. These soils are on backslopes and side slopes on basalt ridges on volcanic Sierra Nevada mountains. Slopes range from 0 to 70 percent. The mean annual precipitation is about 80 inches (2,032 mm), and the mean annual air temperature is about 51 degrees F (11 degrees C).

Taxonomic class: Medial-skeletal, ferrihydritic, mesic Humic Haploxerands

Typical Pedon

Shakeridge gravelly medial coarse sandy loam, on a northwest-facing slope of 48 percent, under a cover of mixed conifers, at an elevation of 4,580 feet (1,396 m). When described on 12/17/1996, the soil was moist throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 2 inches (0 to 5 cm); fresh and slightly decomposed litter of needles, leaves, and twigs.

A1—2 to 4 inches (5 to 10 cm); dark brown (10YR 3/3) gravelly medial coarse sandy loam, black (10YR 2/1) moist; 9 percent clay; weak very fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; common very fine roots; common very fine irregular and common very fine vesicular pores; 30 percent subangular basalt gravel; slightly acid, pH 6.3 by pH meter 1.1 water; NaF pH 10.4; abrupt smooth boundary.

A2—4 to 7 inches (10 to 18 cm); dark brown (10YR 3/3) extremely gravelly medial coarse sandy loam, very dark brown (10YR 2/2) moist; 9 percent clay; weak very fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; common very fine and fine roots; common irregular pores; 65 percent subangular basalt gravel; slightly acid, pH 6.4 by pH meter 1:1 water; NaF pH 10.5; abrupt smooth boundary.

Bw1—7 to 19 inches (18 to 48 cm); brown (10YR 4/3) extremely gravelly medial coarse sandy loam, dark brown (7.5YR 3/3) moist; 16 percent clay; weak very fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; common very fine and fine and few medium roots; common irregular pores; 70 percent angular basalt gravel; slightly acid, pH 6.3 by pH meter 1:1 water; NaF pH 10.3; clear smooth boundary.

- Bw2—19 to 25 inches (48 to 64 cm); brown (10YR 4/3) extremely gravelly medial coarse sandy loam, dark brown (7.5YR 3/2) moist; 16 percent clay; weak very fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; common fine and medium and few coarse roots; common irregular pores; 70 percent angular basalt gravel and 5 percent angular basalt cobbles; slightly acid, pH 6.5 by pH meter 1:1 water; NaF pH 10.3; gradual smooth boundary.
- Bw3—25 to 36 inches (64 to 91 cm); brown (10YR 5/3) extremely gravelly medial coarse sandy loam, dark brown (7.5YR 3/2) moist; 18 percent clay; weak fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; few very fine and common fine to coarse roots; common irregular pores; 70 percent subangular basalt gravel and 5 percent subangular basalt cobbles; slightly acid, pH 6.1 by pH meter 1:1 water; NaF pH 10.3; gradual smooth boundary.
- Bw4—36 to 55 inches (91 to 140 cm); brown (10YR 5/3) very gravelly medial coarse sandy loam, dark brown (7.5YR 3/2) moist; 18 percent clay; weak fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; common fine to coarse roots; common irregular pores; 50 percent subangular basalt gravel and 5 percent subangular basalt cobbles; moderately acid, pH 6.0 by pH meter 1:1 water; NaF pH 10.4; gradual smooth boundary.
- Bw5—55 to 71 inches (140 to 180 cm); brown (10YR 5/3) extremely gravelly medial coarse sandy loam, dark brown (7.5YR 3/2) moist; 18 percent clay; moderate fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; common fine to coarse roots; common irregular pores; 55 percent subangular basalt gravel and 5 percent subangular basalt cobbles; slightly acid, pH 6.1 by pH meter 1:1 water; NaF pH 10.5; clear smooth boundary.
- Bw6—71 to 87 inches (180 to 221 cm); brown (10YR 5/3) extremely gravelly coarse sandy loam, dark brown (7.5YR 3/2) moist; 18 percent clay; weak very fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; common fine and medium roots; common irregular pores; 60 percent subangular basalt gravel and 5 percent subangular basalt cobbles; moderately acid, pH 5.9 by pH meter 1:1 water; NaF pH 10.5.

Type location: Plumas County, California; about 2.3 miles southeast of Cascade, approximately 1,250 feet north and 1,200 feet east of the southwest corner of sec. 13, T. 21 N., R. 7 E.; 39 degrees, 40 minutes, 29.7 seconds north latitude and 121 degrees, 8 minutes, 57.5 seconds west longitude; NAD83; USGS Quad: Cascade, California.

Range in Characteristics

The depth to lithic bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 47 to 54 degrees F (11 to 12 degrees C). The soil moisture control section is dry in all parts from about July to September (about 90 days). The particle-size control section averages 12 to 18 percent clay and 40 to 60 percent rock fragments, mostly gravel and cobbles. Mineralogy is ferrihydritic. By ammonium acetate, base saturation is more than 50 percent throughout the profile. Acid oxalate extractable Al plus $\frac{1}{2}$ Fe ranges from 2.1 to 3.3 to a depth of 71 inches (180 cm). Rock fragments on the surface range from 10 to 20 percent gravel, 0 to 10 percent cobbles, and 0 to 5 percent stones. Some pedons have paralithic contact of volcanoclastic material, tuff, or mudflow breccia below a depth of 60 inches (152 cm).

The A horizon has dry color of 10YR 3/2 or 3/3. Moist color is 10YR 2/1 or 2/2 or 7.5YR 2.5/2. Texture is gravelly medial coarse sandy loam, very gravelly medial sandy loam, or extremely gravelly medial sandy loam. The content of clay ranges from 5 to 12 percent. The horizon has 20 to 65 percent gravel and 5 to 20 percent cobbles. The content of organic matter is 5 to 12 percent. NaF pH is 10.4 to 11.5. Reaction is moderately acid or slightly acid.

The Bw horizon has dry color of 10YR 4/3 or 5/3. Moist color is 10YR 3/2 or 7.5YR 3/2, 3/3, or 4/4. Texture is extremely gravelly medial sandy loam, very gravelly medial sandy loam, very gravelly medial coarse sandy loam, extremely gravelly medial coarse sandy loam, extremely gravelly coarse sandy loam, extremely cobbly medial sandy loam, or extremely stony medial sandy loam. The content of clay ranges from 5 to 18 percent. The horizon has 10 to 70 percent gravel, 0 to 50 percent cobbles, and 0 to 70 percent stones. The content of organic matter is 1 to 3 percent. NaF pH is 10.3 to 11.0. Reaction ranges from very strongly acid to slightly acid.

Sites Series

The Sites series consists of deep or very deep, well drained soils that formed in material weathered from metamorphic rocks. These soils are on metamorphic Sierra Nevada mountains. Slopes range from 2 to 50 percent. The mean annual precipitation is about 65 inches (1,651 mm), and the mean annual air temperature is about 55 degrees F (13 degrees C).

Taxonomic class: Fine, parasquic, mesic Xeric Haplohumults

Typical Pedon

Sites loam, 3 to 8 percent slopes. (Colors are for dry soil unless otherwise noted.)

Oi—4 inches to 0 (10 cm to 0); partially decomposed needles, leaves, twigs, and bark.

A—0 to 6 inches (0 to 15 cm); strong brown (7.5YR 4/6) loam, dark brown (7.5YR 3/4) moist; strong fine subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; many fine and medium roots; many very fine irregular and tubular pores; slightly acid; clear smooth boundary.

Bt1—6 to 16 inches (15 to 41 cm); yellowish red (5YR 4/6) clay loam, yellowish red (5YR 4/6) moist; moderate medium subangular blocky structure; soft, very friable, sticky, slightly plastic; many fine and medium roots; common very fine irregular pores; common thin clay films on faces of peds; moderately acid; clear wavy boundary.

Bt2—16 to 27 inches (41 to 69 cm); yellowish red (5YR 4/6) clay, red (2.5YR 4/6) moist; moderate medium subangular blocky structure; soft, very friable, sticky, slightly plastic; many medium and coarse and common fine roots; common fine to coarse tubular pores; many thin clay films on faces of peds; moderately acid; gradual smooth boundary.

Bt3—27 to 40 inches (69 to 102 cm); red (2.5YR 4/6) clay, dark reddish brown (2.5YR 3/4) moist; strong medium subangular blocky structure; slightly hard, friable, sticky, slightly plastic; few fine and medium roots; common fine to coarse tubular pores; many thin clay films on faces of peds; moderately acid; gradual smooth boundary.

Bt4—40 to 51 inches (102 to 130 cm); red (2.5YR 4/6) clay, dark reddish brown (2.5YR 3/4) moist; strong medium subangular blocky structure; slightly hard, friable, sticky, slightly plastic; few fine and medium roots; common fine and medium tubular pores; many thin clay films on faces of peds; strongly acid; clear wavy boundary.

Bt5—51 to 61 inches (130 to 155 cm); reddish brown (2.5YR 4/4) clay loam, dark reddish brown (2.5YR 3/4) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; common fine and medium roots; common fine and medium tubular pores; common thin clay films on faces of peds and in pores; strongly acid; clear irregular boundary.

Cr—61 to 71 inches (155 to 180 cm); mixed red (2.5YR 4/6) and strong brown (7.5YR 5/8), soft schist bedrock, tilted at about 60 degrees from horizontal.

Type location: Yuba County, California, in the town of Challenge, approximately 1,600 feet north and 800 feet east of the southeast corner of sec. 19, T. 19 N., R. 7 E.; 39 degrees, 29 minutes, 14 seconds north latitude and 121 degrees, 13 minutes, 28 seconds west longitude; NAD27; USGS Quad: Challenge, California.

Range in Characteristics

The depth to paralithic bedrock ranges from 40 to more than 80 inches (102 to more than 203 cm). The mean annual soil temperature is 47 to 54 degrees F (8 to 12 degrees C). The soil moisture control section is dry in all parts from about July 15 to October 15 (about 95 days). Mineralogy is parasesquic. The content of organic matter is 2 to 10 percent to a depth of 5 inches (13 cm).

The A horizon has dry color of 7.5YR 5/4 or 4/6 or 5YR 4/4. Moist color is 7.5YR 3/4 or 5YR 3/4 or 3/3. Texture is loam, clay loam, or gravelly loam. The content of clay ranges from 15 to 27 percent. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 5YR 4/6, 4/8, or 5/6 or 2.5YR 4/6, 4/4, 3/6, or 5/8. Moist color is 5YR 4/6 or 3/3 or 2.5YR 3/4, 3/6, or 4/6. Texture is clay loam, clay, gravelly clay loam, or gravelly clay. By weighted average, the content of clay in the control section ranges from 35 to 60 percent. The content of rock fragments is 0 to 30 percent. The content of organic carbon is 2 to 3 percent in the upper part of the horizon and 1 to 2 percent in the lower part. Base saturation ranges from 15 to 30 percent. Reaction is strongly acid or moderately acid.

Sites Taxadjunct

The Sites taxadjunct consists of very deep, well drained soils that formed in tephra deposited over colluvium and residuum derived from metasedimentary rocks. These soils are on metamorphic Sierra Nevada mountains. Slopes range from 2 to 70 percent. The mean annual precipitation is about 70 inches (1,778 mm), and the mean annual air temperature is about 52 degrees F (11 degrees C).

Taxonomic class: Fine, parasesquic, mesic Andic Palehumults

Typical Pedon

Sites taxadjunct gravelly loam, on a northwest-facing slope of 18 percent, under a cover of Sierra mixed conifers, at an elevation of 3,225 feet (983 m). When described on 6/4/2004, the soil was dry to a depth of 21 inches (53 cm) and moist from 21 to 72 inches (53 to 183 cm). (Colors are for dry soil unless otherwise noted.)

- Oi—0 to 1 inch (0 to 3 cm); slightly decomposed plant material; abrupt smooth boundary.
- A—1 to 3 inches (3 to 8 cm); brown (7.5YR 5/3) gravelly loam, reddish brown (5YR 4/4) moist; 18 percent clay; strong fine granular structure; soft, very friable, nonsticky, slightly plastic; many very fine roots; many very fine irregular pores; 20 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 10.0; abrupt smooth boundary.
- BA—3 to 10 inches (8 to 25 cm); yellowish red (5YR 5/6) very gravelly loam, red (2.5YR 4/6) moist; 25 percent clay; moderate fine granular structure; soft, friable, slightly sticky, slightly plastic; common fine and medium and many very fine roots; many very fine irregular pores; 45 percent gravel; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 9.8; abrupt smooth boundary.
- Bt1—10 to 21 inches (25 to 53 cm); yellowish red (5YR 5/6) gravelly silty clay, red (2.5YR 4/6) moist; 45 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; common fine and medium and few coarse roots; common very fine tubular pores; 50 percent discontinuous distinct clay films on all faces of peds; 25 percent gravel; slightly acid, pH 6.2 by Hellige-Truog; clear smooth boundary.

Bt2—21 to 34 inches (53 to 86 cm); reddish yellow (5YR 6/6) gravelly silty clay, red (2.5YR 5/6) moist; 50 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, very plastic; few medium and coarse roots; common very fine tubular pores; 60 percent continuous distinct clay films on all faces of peds; 20 percent gravel; slightly acid, pH 6.2 by Hellige-Truog; gradual smooth boundary.

Bt3—34 to 59 inches (86 to 150 cm); reddish yellow (5YR 6/6) silty clay, red (2.5YR 5/6) moist; 55 percent clay; moderate medium subangular blocky structure parting to moderate fine subangular blocky; slightly hard, friable, slightly sticky, very plastic; few fine and medium roots; common very fine tubular pores; 90 percent continuous distinct clay films on all faces of peds; 10 percent gravel; slightly acid, pH 6.2 by Hellige-Truog; clear smooth boundary.

Bt4—59 to 72 inches (150 to 183 cm); reddish yellow (5YR 6/6) silty clay, red (2.5YR 5/6) moist; 45 percent clay; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky, very plastic; few fine and medium roots; common very fine tubular pores; 90 percent continuous distinct clay films on all faces of peds; 10 percent gravel; slightly acid, pH 6.2 by Hellige-Truog.

Type location: Butte County, California; about 0.3 mile northeast of the town of Feather Falls, approximately 1,900 feet west and 1,750 feet south of the northeast corner of sec. 13, T. 20 N., R. 6 E.; 39 degrees, 35 minutes, 44 seconds north latitude and 121 degrees, 14 minutes, 50 seconds west longitude; NAD83; USGS Quad: Clipper Mills, California.

Range in Characteristics

The depth to paralithic bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 47 to 52 degrees F (8 to 11 degrees C). The particle-size control section averages 50 to 55 percent clay and 20 to 25 percent rock fragments, mostly gravel. Mineralogy is parasesquic. Acid-oxalate extractable Al plus $\frac{1}{2}$ Fe ranges from 1.5 to 1.0 percent (by weight) to a depth of 10 inches (25 cm). Rock fragments on the surface range from 0 to 15 percent gravel.

The A horizon has dry color of 7.5YR 5/3 or 5/4, 5YR 5/4 or 6/6, or 2.5YR 4/6. Moist color is 5YR 3/4 or 4/4, 7.5YR 3/3 or 3/4, or 2.5YR 3/4 or 4/6. Texture is gravelly loam, loam, sandy loam, or gravelly sandy loam. The content of clay ranges from 16 to 25 percent. The content of gravel is 0 to 25 percent. The content of organic matter is 10 to 14 percent. By sum of cations, base saturation ranges from 15 to 25 percent. By ammonium acetate, CEC ranges from 20 to 30. NaF pH is 10.0 to 11.0. Reaction is moderately acid or slightly acid.

The BA horizon has dry color of 5YR 5/6 or 2.5YR 4/6. Moist color is 2.5YR 3/6 or 4/6 or 5YR 3/3, 3/4, or 4/4. Texture is gravelly loam, very gravelly loam, loam, or clay loam. The content of clay ranges from 19 to 30 percent. The content of gravel is 0 to 45 percent. The content of organic matter is 4 to 8 percent. By sum of cations, base saturation ranges from 10 to 20 percent. By ammonium acetate, CEC ranges from 12 to 20. NaF pH is 9.8 to 11.0. Reaction ranges from strongly acid to slightly acid.

The Bt horizon has dry color of 5YR 5/6, 5/8, or 6/6 or 7.5YR 6/8 or 7/8. Moist color is 2.5YR 3/6, 4/6, 4/8, or 5/6; 7.5YR 5/8, 6/8, or 7/8; or 5YR 5/8. Texture is gravelly silty clay, silty clay, clay, or clay loam. The content of clay ranges from 38 to 55 percent. The content of gravel is 0 to 25 percent. The content of organic matter is 3 to 0.3 percent. By sum of cations, base saturation ranges from 2 to 20 percent. By ammonium acetate, CEC ranges from 9 to 12. NaF pH is 8.8 to 10.0. Reaction ranges from very strongly acid to slightly acid.

The Sites taxadjunct is a taxadjunct because it has andic soil material on the surface and its content of clay does not decrease by 30 percent from the maximum amount in the argillic horizon. These differences do not significantly affect the use, management, or interpretations of the soils.

Slideland Series

The Slideland series consists of very deep, well drained soils that formed in colluvium and alluvium derived from mixed rock sources. These soils are in areas of landslide deposits and terraces in canyons on Cascade foothills. Slopes range from 3 to 50 percent. The mean annual precipitation is about 40 inches (1,016 mm), and the mean annual air temperature is about 58 degrees F (14 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Haplic Palexeralfs

Typical Pedon

Slideland gravelly loam, on a west-facing slope of 11 percent, under a cover of annual grasses and forbs with some scattered blue oak and whiteleaf manzanita, at an elevation of 620 feet (189 m). When described on 7/8/1999, the soil was dry to a depth of 38 inches (97 cm) and very slightly moist from 38 to 80 inches (97 to 203 cm). (Colors are for dry soil unless otherwise noted.)

- A—0 to 2 inches (0 to 5 cm); light brown (7.5YR 6/4) gravelly loam, brown (7.5YR 4/3) moist; 23 percent clay; moderate medium platy structure parting to moderate fine and medium granular; slightly hard, friable, slightly sticky, slightly plastic; many very fine roots; common very fine to medium irregular and tubular pores; 15 percent gravel; slightly acid, pH 6.3 by Hellige-Truog; abrupt smooth boundary.
- Bt1—2 to 9 inches (5 to 23 cm); light brown (7.5YR 6/4) gravelly loam, brown (7.5YR 4/3) moist; 25 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine and fine and few medium roots; common very fine and fine and few medium tubular pores; 70 percent continuous distinct clay films on surfaces along pores; 15 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.
- Bt2—9 to 14 inches (23 to 36 cm); light brown (7.5YR 6/4) gravelly clay loam, brown (7.5YR 4/3) moist; 28 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine and fine and few medium roots; many very fine to medium tubular pores; 70 percent continuous distinct clay films on surfaces along pores; 15 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.
- Bt3—14 to 21 inches (36 to 53 cm); light reddish brown (5YR 6/4) gravelly clay loam, reddish brown (5YR 4/3) moist; 31 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine and fine and few medium roots; many very fine to medium tubular pores; 80 percent continuous distinct clay films on surfaces along pores; 15 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.
- Bt4—21 to 28 inches (53 to 71 cm); light reddish brown (5YR 6/4) gravelly clay loam, reddish brown (5YR 4/3) moist; 34 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; few very fine to coarse roots; many very fine to medium tubular pores; 80 percent continuous distinct clay films on surfaces along pores; 15 percent gravel; neutral, pH 6.7 by Hellige-Truog; gradual smooth boundary.
- Bt5—28 to 38 inches (71 to 97 cm); light reddish brown (5YR 6/4) gravelly clay loam, reddish brown (5YR 4/3) moist; 36 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; few very fine to medium roots; many very fine to medium tubular pores; 80 percent continuous distinct clay films on surfaces along pores; 15 percent gravel; neutral, pH 6.7 by Hellige-Truog; gradual smooth boundary.
- Bt6—38 to 51 inches (97 to 130 cm); light reddish brown (5YR 6/4) gravelly clay loam, reddish brown (5YR 4/3) moist; 37 percent clay; moderate fine and medium

subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; few very fine to coarse roots; many very fine and fine and few medium tubular pores; 80 percent continuous distinct clay films on surfaces along pores; 5 percent cobbles and 10 percent gravel; neutral, pH 6.7 by Hellige-Truog; gradual smooth boundary.

Bt7—51 to 69 inches (130 to 175 cm); light reddish brown (5YR 6/4) very cobbly clay loam, reddish brown (5YR 4/3) moist; 39 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, very sticky, very plastic; few very fine to medium roots; common very fine and fine tubular pores; 100 percent continuous distinct clay films on surfaces along pores; 5 percent stones, 15 percent gravel, and 15 percent cobbles; neutral, pH 6.7 by Hellige-Truog; gradual smooth boundary.

Bt8—69 to 80 inches (175 to 203 cm); light brown (7.5YR 6/4) very cobbly clay loam, brown (7.5YR 4/3) moist; 38 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, very sticky, very plastic; few very fine to medium roots; common very fine and fine tubular pores; 80 percent continuous distinct clay films on surfaces along pores; 15 percent medium distinct irregular iron-manganese masses that have clear boundaries and are between peds; 5 percent stones, 20 percent cobbles, and 20 percent gravel; neutral, pH 6.8 by Hellige-Truog.

Type location: Butte County, California; about 2.4 miles south-southwest of Centerville, approximately 2,400 feet east and 1,000 feet south of the northwest corner of sec. 20, T. 22 N., R. 3 E.; 39 degrees, 45 minutes, 11 seconds north latitude and 121 degrees, 39 minutes, 56 seconds west longitude; NAD83; USGS Quad: Paradise West, California.

Range in Characteristics

The depth to bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 59 to 65 degrees F (15 to 18 degrees C). The particle-size control section averages 25 to 35 percent clay and 5 to 35 percent rock fragments, mostly gravel. Mineralogy is mixed. Rock fragments on the surface range from 0 to 10 percent gravel, 0 to 10 percent cobbles, 0 to 10 percent stones, and 0 to 10 percent boulders. In some pedons the clay content ranges from 20 to 35 percent in the lower part of the Bt horizon.

The A horizon has dry color of 7.5YR 5/3, 6/3, or 6/4. Moist color is 7.5YR 4/2, 4/3, or 4/4 or 5YR 4/3. Texture is loam, gravelly loam, fine sandy loam, or very fine sandy loam. The content of clay ranges from 18 to 27 percent. The content of gravel is 2 to 30 percent. Reaction is slightly acid or neutral.

The upper part of the Bt horizon has dry color of 7.5YR 5/3, 5/4, 6/3, 6/4, 6/6, or 7/4 or 5YR 5/4 or 6/4. Moist color is 7.5YR 4/3 or 4/4 or 5YR 4/3 or 4/4. Texture is loam, gravelly loam, clay loam, gravelly clay loam, cobbly clay loam, silt loam, or silty clay loam. The content of clay ranges from 20 to 35 percent. The content of gravel is 5 to 30 percent, the content of cobbles is 0 to 10 percent, and the content of stones is 0 to 5 percent. Reaction ranges from moderately acid to neutral.

The lower part of the Bt horizon has dry color of 7.5YR 4/4, 5/4, 6/4, or 7/4 or 5YR 4/6, 5/4, or 6/4. Moist color is 7.5YR 4/3, 4/4, or 5/4 or 5YR 4/4 or 4/4. Texture is clay loam, gravelly clay loam, cobbly clay loam, very cobbly clay loam, silty clay loam, very gravelly silty clay loam, very cobbly silty clay loam, clay, gravelly clay, cobbly clay, silty clay, or gravelly silty clay. The content of clay ranges from 35 to 50 percent. The content of gravel is 5 to 30 percent, the content of cobbles is 0 to 25 percent, and the content of stones is 0 to 5 percent. Reaction ranges from slightly acid to slightly alkaline.

Sobrante Series

The Sobrante series consists of moderately deep, well drained soils that formed in material weathered from basic metavolcanic rocks. These soils are on metavolcanic Sierra Nevada foothills. Slopes range from 3 to 75 percent. The mean annual precipitation is about 28 inches (711 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, active, thermic Mollic Haploxeralfs

Typical Pedon

Sobrante loam, on a slope of 3 to 8 percent. (Colors are for dry soil unless otherwise noted.)

A—0 to 5 inches (0 to 13 cm); brown (7.5YR 4/4) loam, dark brown (7.5YR 3/4) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; few very fine and fine roots; common very fine and fine irregular pores; 5 percent gravel; slightly acid; clear smooth boundary.

Bt1—5 to 11 inches (13 to 28 cm); dark reddish brown (5YR 3/4) loam, dark reddish brown (5YR 3/4) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; few very fine to medium tubular pores; few thin clay films on faces of peds and in pores; 5 percent gravel; slightly acid; gradual smooth boundary.

Bt2—11 to 19 inches (28 to 48 cm); dark reddish brown (5YR 3/4) loam, dark reddish brown (5YR 3/4) moist; moderate medium subangular blocky structure; hard, friable, slightly sticky, slightly plastic; few fine and common medium roots; common very fine and fine tubular pores; common thin clay films on faces of peds and in pores; 5 percent gravel; slightly acid; gradual smooth boundary.

Bt3—19 to 27 inches (48 to 69 cm); strong brown (7.5YR 5/6) loam, dark brown (7.5YR 3/4) moist; weak fine subangular blocky structure; hard, firm, slightly sticky, slightly plastic; few fine and common medium roots; few fine tubular pores; common moderately thick clay films on faces of peds and in pores; 5 percent gravel; slightly acid; abrupt wavy boundary.

Cr—27 to 39 inches (69 to 99 cm); yellowish brown (10YR 5/8), weathered greenstone bedrock; soft in the upper part, becoming increasingly hard with increasing depth; common fine and coarse roots; gradual wavy boundary.

R—39 inches (99 cm); hard, very fractured greenstone bedrock.

Type location: Yuba County, California; about 4.2 miles northeast of Camp Far West Reservoir Dam, approximately 1,650 feet north and 1,450 feet west of the southeast corner of sec. 34, T. 15 N., R. 6 E.; 39 degrees, 6 minutes, 20 seconds north latitude and 121 degrees, 17 minutes, 19 seconds west longitude; NAD27; USGS Quad: Camp Far West, California.

Range in Characteristics

The depth to lithic bedrock ranges from 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 59 to 64 degrees F (15 to 18 degrees C). The particle-size control section ranges from 25 to 35 percent clay. Mineralogy is mixed. The content of organic matter is 1 to 3 percent to a depth of 5 inches (13 cm).

The A horizon has dry color of 7.5YR 5/4 or 4/4. Moist color is 7.5YR 4/4 or 3/4. Texture is gravelly loam or loam. The content of clay ranges from 10 to 25 percent. The horizon has 3 to 25 percent gravel and 0 to 5 percent cobbles. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 7.5YR 5/6 or 5YR 4/6, 4/4, 3/6, or 3/4. Moist color is 7.5YR 3/4 or 5YR 3/4 or 4/4. Texture is gravelly clay loam, gravelly loam, loam, or clay loam. The content of clay ranges from 25 to 35 percent. The horizon has 3 to 25

percent gravel and 0 to 5 percent cobbles. Reaction is moderately acid or slightly acid.

Sommeyflat Series

The Sommeyflat series consists of very deep, well drained soils that formed in residuum and colluvium derived from metavolcanic rocks and intrusive igneous rocks, mainly gabbro and quartz diorite. These soils are on side slopes and ridgetops on plutons on Sierra Nevada foothills. Slopes range from 2 to 50 percent. The mean annual precipitation is about 40 inches (1,016 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Ultic Haploxeralfs

Typical Pedon

Sommeyflat loam, on an east-facing slope of 5 percent, under a cover of annual grasses and forbs, at an elevation of 1,950 feet (594 m). When described on 5/29/2002, the soil was dry to a depth of 2 inches (5 cm) and slightly moist from 2 to more than 70 inches (5 to 178 cm). (Colors are for dry soil unless otherwise noted.)

- A—0 to 2 inches (0 to 5 cm); strong brown (7.5YR 5/6) loam, dark brown (7.5YR 3/4) moist; 19 percent clay; weak very fine and fine subangular blocky structure; soft, very friable, nonsticky, slightly plastic; many very fine roots; many very fine and fine tubular pores; slightly acid, pH 6.2 by Hellige-Truog; abrupt smooth boundary.
- BA—2 to 9 inches (5 to 23 cm); strong brown (7.5YR 4/6) loam, dark brown (7.5YR 3/4) moist; 21 percent clay; weak very fine and fine subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; many very fine roots; many very fine and fine tubular pores; 2 percent subangular gravel; slightly acid, pH 6.2 by Hellige-Truog; clear smooth boundary.
- Bt1—9 to 14 inches (23 to 36 cm); strong brown (7.5YR 5/6) loam, dark brown (7.5YR 3/4) moist; 24 percent clay; moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; common very fine roots; many very fine and fine and common medium tubular pores; 5 percent patchy distinct clay films on faces of peds; 2 percent gravel; slightly acid, pH 6.3 by Hellige-Truog; clear wavy boundary.
- Bt2—14 to 24 inches (36 to 61 cm); yellowish red (5YR 4/6) loam, dark reddish brown (5YR 3/4) moist; 26 percent clay; moderate fine and medium subangular blocky structure; moderately hard, friable, slightly sticky, slightly plastic; many very fine roots; very fine to medium tubular pores; 10 percent patchy distinct clay films on faces of peds; slightly acid, pH 6.4 by Hellige-Truog; clear wavy boundary.
- BCt—24 to 31 inches (61 to 79 cm); yellowish red (5YR 5/6) loam, dark reddish brown (5YR 3/4) moist; 24 percent clay; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; many very fine roots; many very fine and fine tubular pores; 10 percent patchy distinct clay films on faces of peds; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.
- C1—31 to 62 inches (79 to 157 cm); brownish yellow (10YR 6/6) loam, dark yellowish brown (10YR 4/6) moist; 19 percent clay; weak very fine and fine subangular blocky structure; soft, very friable, nonsticky, slightly plastic; few very fine roots; common very fine and fine tubular pores; neutral, pH 6.8 by Hellige-Truog; clear smooth boundary.
- C2—62 to 70 inches (157 to 178 cm); yellowish brown (10YR 5/6) loam, dark yellowish brown (10YR 4/4) moist; 16 percent clay; weak very fine and fine subangular blocky structure; soft, very friable, nonsticky, slightly plastic; common very fine and fine tubular pores; neutral, pH 6.9 by Hellige-Truog.

Type location: Butte County, California; about 2.2 miles north of Rackerby, approximately 900 feet north and 1,150 feet west of the southeast corner of sec. 30, T. 19 N., R. 6 E.; 39 degrees, 28 minutes, 15.60 seconds north latitude and 121 degrees, 20 minutes, 15.97 seconds west longitude; NAD83; USGS Quad: Rackerby, California.

Range in Characteristics

The depth to paralithic bedrock is 60 to 80 inches or more (152 to 203 cm). The mean annual soil temperature is 59 to 63 degrees F (16 to 17 degrees C). The soil moisture control section is dry in all parts from about June through October (about 165 days). The particle-size control section averages 22 to 29 percent clay and 2 to 15 percent rock fragments, mostly gravel. Mineralogy is mixed. Rock fragments on the surface range from 0 to 2 percent gravel. Some pedons have a BA_t horizon.

The A horizon has dry color of 7.5YR 4/4, 4/6, or 5/6 or 10YR 4/4 or 6/3. Moist color is 7.5YR 3/3, 3/4, or 4/6 or 10YR 3/3 or 3/4. Texture is loam or gravelly loam. The content of clay ranges from 15 to 20 percent. The content of gravel is 0 to 20 percent. By sum of cations, base saturation ranges from 50 to 70 percent. The content of organic matter is 4 to 8 percent. Reaction is slightly acid or neutral.

The BA horizon has dry color of 7.5YR 4/6 or 5/6, 10YR 4/4 or 6/3, or 5YR 4/6. Moist color is 7.5YR 3/4, 5YR 3/4, or 10YR 3/3. Texture is loam or gravelly loam. The content of clay ranges from 14 to 21 percent. The horizon has 0 to 20 percent gravel and 0 to 5 percent cobbles. By sum of cations, base saturation ranges from 45 to 65 percent. The content of organic matter is 1 to 4 percent. Reaction is slightly acid.

The upper part of the B_t horizon has dry color of 7.5YR 4/4, 4/6, 5/6, or 6/4; 5YR 4/6; or 2.5YR 5/6. Moist color is 7.5YR 3/4, 5YR 4/4, or 2.5YR 4/6. Texture is loam or clay loam. The content of clay ranges from 18 to 30 percent. The content of gravel is 0 to 10 percent. By sum of cations, base saturation ranges from 55 to 74 percent. The content of organic matter is 0.4 to 1.5 percent. Reaction is slightly acid.

The lower part of the B_t horizon has dry color of 7.5YR 4/6, 5/6, or 6/4; 5YR 4/6, 5/6, or 6/4; or 2.5YR 4/6. Moist color is 7.5YR 3/4, 4/3, 4/4, or 4/6; 5YR 3/4, 4/4, or 4/6; or 2.5YR 4/4. Texture is loam, clay loam, or gravelly clay loam. The content of clay ranges from 22 to 33 percent. The content of gravel is 0 to 15 percent, and the content of cobbles is 0 to 2 percent. By sum of cations, base saturation ranges from 75 to 85 percent. The content of organic matter is 0.2 to 1.0 percent. Reaction is slightly acid or neutral.

The BC_t horizon has dry color of 7.5YR 5/8 or 6/8; 10YR 5/3, 5/4, or 6/4; 5YR 5/6; or 2.5YR 5/6. Moist color is 7.5YR 4/6 or 5/6; 10YR 3/4, 4/3, 4/4, or 5/4; 5YR 3/4; or 2.5YR 4/6. Texture is loam or clay loam. The content of clay ranges from 18 to 30 percent. The content of gravel is 0 to 10 percent. The content of organic matter is 0 to 0.5 percent. Reaction is slightly acid.

The C horizon has dry color of 7.5YR 6/6 or 10YR 5/6 or 6/6. Moist color is 7.5YR 4/6 or 10YR 4/4 or 4/6. Texture is loam or gravelly fine sandy loam. The content of clay ranges from 16 to 22 percent. The content of gravel is 0 to 25 percent. Reaction is slightly acid or neutral.

Spine Series

The Spine series consists of shallow, well drained soils that formed in residuum and colluvium derived from metasedimentary and metavolcanic rocks. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada mountains. Slopes range from 3 to 70 percent. The mean annual precipitation is about 64 inches (1,626 mm), and the mean annual air temperature is about 55 degrees F (13 degrees C).

Taxonomic class: Loamy-skeletal, mixed, active, mesic Lithic Haploxerults

Typical Pedon

Spine very gravelly loam, on a north-facing slope of 35 percent, under a cover of tanoak, sugar pine, Douglas-fir, and whiteleaf manzanita, at an elevation of 3,240 feet (988 m). When described on 7/15/1999, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 3 cm); slightly decomposed plant material; abrupt smooth boundary.

A—1 to 3 inches (3 to 8 cm); pink (7.5YR 7/3) very gravelly loam, brown (7.5YR 5/3) moist; 20 percent clay; moderate fine and medium granular structure; soft, very friable, slightly sticky, slightly plastic; common very fine to medium roots; common fine and medium tubular and many very fine irregular and tubular pores; 5 percent cobbles and 30 percent gravel; moderately acid, pH 5.8 by Hellige-Truog; NaF pH 9.0; clear smooth boundary.

Bt1—3 to 9 inches (8 to 23 cm); pink (7.5YR 8/4) extremely gravelly loam, reddish yellow (7.5YR 6/6) moist; 27 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine to medium and few coarse roots; many very fine to medium tubular pores; 70 percent distinct clay films; 5 percent cobbles and 60 percent gravel; moderately acid, pH 5.8 by Hellige-Truog; NaF pH 9.2; clear smooth boundary.

Bt2—9 to 16 inches (23 to 41 cm); reddish yellow (7.5YR 7/6) extremely gravelly clay loam, reddish yellow (7.5YR 6/6) moist; 29 percent clay; moderate fine subangular blocky structure; slightly hard, friable, moderately sticky, slightly plastic; common very fine to medium roots; common very fine and fine tubular pores; 30 percent continuous distinct clay films; 5 percent cobbles and 70 percent gravel; moderately acid, pH 5.8 by Hellige-Truog; NaF pH 9.2; gradual wavy boundary.

R—16 inches (41 cm); indurated metasedimentary bedrock; few very fine to medium roots.

Type location: Butte County, California; about 2.2 miles northeast of Sawmill Peak, approximately 1,700 feet north and 1,600 feet west of the southeast corner of sec. 21, T. 23 N., R. 4 E.; 39 degrees, 50 minutes, 5 seconds north latitude and 121 degrees, 31 minutes, 40 seconds west longitude; NAD83; USGS Quad: Paradise East, California.

Range in Characteristics

The depth to lithic bedrock is 10 to 20 inches (25 to 51 cm). The mean annual soil temperature is 50 to 57 degrees F (10 to 14 degrees C). The particle-size control section averages 17 to 35 percent clay and 35 to 75 percent rock fragments, mostly gravel. Mineralogy is mixed. Rock fragments on the surface range from 20 to 60 percent gravel, 0 to 20 percent cobbles, 0 to 15 percent stones, and 0 to 5 percent boulders.

The A horizon has dry color of 10YR 6/3, 6/4, or 7/4 or 7.5YR 6/4 or 7/3. Moist color is 7.5YR 3/3, 4/3, 4/4, 4/6, 5/3, or 5/4 or 10YR 4/3, 4/4, or 5/4. Texture is gravelly loam, very gravelly loam, gravelly sandy loam, or very gravelly sandy loam. The content of clay ranges from 12 to 22 percent. The horizon has 25 to 60 percent gravel and 0 to 5 percent cobbles. Reaction ranges from very strongly acid to slightly acid.

The Bt horizon has dry color of 7.5YR 6/4, 6/6, 7/4, 7/6, or 8/4; 10YR 6/4 or 7/4; or 5YR 5/6. Moist color is 7.5YR 4/3, 4/4, 5/4, 5/6, or 6/6; 10YR 4/4, 5/6, or 5/8; or 5YR 4/4 or 4/6. Texture is gravelly loam, very gravelly loam, extremely gravelly loam, gravelly clay loam, very gravelly clay loam, extremely gravelly clay loam, gravelly sandy loam, or very gravelly sandy loam. The content of clay ranges from 15 to 35 percent. The horizon has 30 to 70 percent gravel and 0 to 15 percent cobbles. Reaction ranges from very strongly acid to slightly acid.

Spine Taxadjunct

The Spine taxadjunct consists of shallow, well drained soils that formed in residuum and colluvium derived from metavolcanic rocks. These soils are on backslopes in metamorphic Sierra Nevada canyons and mountains. Slopes range from 30 to 70 percent. The mean annual precipitation is about 56 inches (1,422 mm), and the mean annual air temperature is about 56 degrees F (13 degrees C).

Taxonomic class: Loamy-skeletal, mixed, active, mesic Lithic Haploxeralfs

Typical Pedon

Spine taxadjunct very cobbly loam, on a northeast-facing slope of 42 percent, under a cover of Douglas-fir, canyon live oak, California black oak, Pacific madrone, toyon, and manzanita, at an elevation of 1,965 feet (599 m). When described on 11/20/2001, the soil was moist throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); reddish yellow (7.5YR 6/6) very cobbly loam, brown (7.5YR 4/4) moist; 25 percent clay; moderate fine granular structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine and fine and common medium roots; many very fine to coarse tubular and irregular pores; 20 percent cobbles and 20 percent gravel; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.

Bt—2 to 15 inches (5 to 38 cm); reddish yellow (7.5YR 6/6) very cobbly clay loam, reddish brown (5YR 4/4) moist; 30 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; many very fine to coarse and common very coarse roots; many very fine to coarse tubular and irregular pores; 70 percent continuous distinct clay films; 20 percent gravel and 30 percent cobbles; slightly acid, pH 6.4 by Hellige-Truog; abrupt wavy boundary.

R—15 inches (38 cm); indurated metavolcanic bedrock.

Type location: Butte County, California; about 0.68 mile east of Jarbo Gap, approximately 1,200 feet south and 600 feet east of the northwest corner of sec. 25, T. 22 N., R. 4 E.; 39 degrees, 44 minutes, 15 seconds north latitude and 121 degrees, 29 minutes, 3 seconds west longitude; NAD83; USGS Quad: Berry Creek, California.

Range in Characteristics

The depth to bedrock is 10 to 20 inches (25 to 51 cm). The mean annual soil temperature is 53 to 59 degrees F. The soil moisture control section is dry in all parts from about June to October (about 150 days). The particle-size control section averages 20 to 35 percent clay and 35 to 60 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. Rock fragments on the surface range from 25 to 80 percent gravel, 5 to 30 percent cobbles, 0 to 20 percent stones, and 0 to 20 percent boulders.

The A horizon has dry color of 7.5YR 6/6 or 7/6 or 5YR 5/4 or 6/4. Moist color is 7.5YR 4/3 or 4/4 or 5YR 3/3 or 4/3. Texture is gravelly loam, very gravelly loam, extremely gravelly loam, cobbly loam, very cobbly loam, extremely cobbly loam, or stony loam. The content of clay ranges from 18 to 27 percent. The horizon has 15 to 60 percent gravel, 10 to 35 percent cobbles, 0 to 20 percent stones, and 0 to 15 percent boulders. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 7.5YR 6/6 or 5YR 6/6. Moist color is 5YR 4/3, 4/4, or 4/6. Texture is very gravelly loam, extremely gravelly loam, very cobbly loam, extremely cobbly loam, very gravelly clay loam, extremely gravelly clay loam, very cobbly clay loam, extremely cobbly clay loam, very stony loam, very stony clay loam, extremely stony loam, or extremely stony clay loam. The content of clay ranges from 22 to 35 percent. The horizon has 15 to 60 percent gravel, 20 to 40 percent cobbles,

0 to 30 percent stones, and 0 to 15 percent boulders. Reaction is slightly acid or neutral.

The Spine taxadjunct is a taxadjunct because the base saturation, by sum of cations, is more than 35 percent, which is higher than is defined as the range for the series. The main limitation is the shallow depth to bedrock. This difference does not significantly affect the use, management, or interpretations of the soils.

Stagpoint Series

The Stagpoint series consists of very deep, well drained soils that formed in tephra-influenced colluvium and residuum derived from metamorphic rocks. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada mountains. Slopes range from 2 to 70 percent. The mean annual precipitation is about 78 inches (1,981 mm), and the mean annual air temperature is about 49 degrees F (9 degrees C).

Taxonomic class: Loamy-skeletal, mixed, active, frigid Andic Haplohumults

Typical Pedon

Stagpoint loam, on a west-facing slope of 12 percent, under a cover of white fir, red fir, and shrubs, at an elevation of 5,325 feet (1,623 m). When described on 7/29/1997, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 0.5 inch (0 to 1 cm); needles and twigs.

A—0.5 inch to 4 inches (1 to 10 cm); brown (7.5YR 5/4) loam, dark brown (7.5YR 3/3) moist; 16 percent clay; weak fine subangular blocky structure parting to single grain; loose, very friable, nonsticky, nonplastic; common very fine roots; many very fine irregular pores; 10 percent gravel; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 10.8; abrupt smooth boundary.

Bt1—4 to 10 inches (10 to 25 cm); light brown (7.5YR 6/4) gravelly loam, dark brown (7.5YR 3/3) moist; 14 percent clay; weak medium subangular blocky structure parting to single grain; slightly hard, very friable, nonsticky, slightly plastic; common very fine to medium roots; common very fine tubular pores; few faint discontinuous clay films between sand grains; 18 percent gravel; moderately acid, pH 5.7 by Hellige-Truog; NaF pH 10.9; abrupt smooth boundary.

Bt2—10 to 17 inches (25 to 43 cm); pink (7.5YR 7/4) very gravelly loam, brown (7.5YR 4/4) moist; 20 percent clay; weak medium subangular blocky structure parting to single grain; slightly hard, friable, slightly sticky, slightly plastic; common very fine to medium and few coarse roots; few very fine tubular pores; few faint discontinuous clay films between sand grains; 30 percent gravel and 15 percent cobbles; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 10.3; clear smooth boundary.

2Bt3—17 to 23 inches (43 to 58 cm); yellow (10YR 7/6) very gravelly loam, yellowish brown (10YR 5/6) moist; 22 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; few fine to coarse roots; common very fine and few medium tubular pores; few distinct discontinuous clay films in pores; 40 percent gravel and 15 percent cobbles; strongly acid, pH 5.3 by Hellige-Truog; NaF pH 9.6; gradual smooth boundary.

2Bt4—23 to 34 inches (58 to 86 cm); very pale brown (10YR 7/4) extremely cobbly loam, yellowish brown (10YR 5/6) moist; 18 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few fine to coarse roots; common very fine and few medium tubular pores; few distinct discontinuous clay films in pores; 30 percent gravel, 40 percent cobbles, and 5 percent stones; strongly acid, pH 5.2 by Hellige-Truog; NaF pH 9.4; gradual wavy boundary.

- 2BCt1—34 to 49 inches (86 to 124 cm); light red (2.5YR 7/6) extremely cobbly loam, reddish brown (2.5YR 5/4) moist; 16 percent clay; weak fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few fine to coarse roots; common very fine tubular pores; few distinct discontinuous clay films in pores; 10 percent gravel, 50 percent cobbles, and 5 percent stones; strongly acid, pH 5.2 by Hellige-Truog; NaF pH 9.3; gradual wavy boundary.
- 2BCt2—49 to 64 inches (124 to 163 cm); light reddish brown (2.5YR 7/4) extremely stony loam, light reddish brown (2.5YR 6/4) moist; 16 percent clay; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few fine and medium roots; common fine and medium tubular pores; few distinct discontinuous clay films in root channels and/or pores; 10 percent cobbles and 50 percent stones; strongly acid, pH 5.2 by Hellige-Truog; NaF pH 9.2; gradual wavy boundary.
- 2C—64 to 86 inches (163 to 218 cm); pink (2.5YR 8/3) very stony loam, light red (2.5YR 7/6) moist; 9 percent clay; massive; slightly hard, friable, slightly sticky, slightly plastic; 10 percent cobbles and 30 percent stones; strongly acid, pH 5.2 by Hellige-Truog; NaF pH 9.3.

Type location: Plumas County, California; about 2 miles east of Camel Peak Lookout, approximately 300 feet west and 2,550 feet south of the northeast corner of sec. 34, T. 22 N., R. 8 E.; 39 degrees, 43 minutes, 22.5 seconds north latitude and 121 degrees, 3 minutes, 55.8 seconds west longitude; NAD83; USGS Quad: American House, California.

Range in Characteristics

The depth to paralithic bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 40 to 47 degrees F (4 to 8 degrees C). The soil moisture control section is dry in all parts from about August to October (about 60 days). The particle-size control section averages 20 to 23 percent clay and 41 to 58 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. The content of organic matter is 8 to 17 percent to a depth of 10 inches (25 cm), 2 to 5 percent from 10 to 23 inches (25 to 58 cm), 1 to 2 percent from 23 to 64 inches (58 to 163 cm), and less than 1 percent from 64 to 85 inches (163 to 216 cm). By sum of cations, base saturation ranges from 10 to 25 percent from 0.5 inch to 17 inches (1.27 to 43 cm) and is less than 10 percent from 17 to 85 inches (43 to 216 cm). Rock fragments on the surface range from 0 to 5 percent gravel, 0 to 10 percent cobbles, 0 to 5 percent stones, and 0 to 5 percent boulders. In some pedons the 2BCt horizon and/or the 2C horizon do not occur.

The A horizon has dry color of 7.5YR 4/2, 4/3, 5/3, 5/4, or 6/4 or 10YR 4/3. Moist color is 7.5YR 3/2, 3/3, 4/3, or 4/4 or 5YR 2/2 or 3/2. Texture is loam, sandy loam, gravelly sandy loam, very gravelly sandy loam, or cobbly sandy loam. The content of clay ranges from 8 to 18 percent. The horizon has 5 to 35 percent gravel and 0 to 15 percent cobbles. NaF pH is 10.5 to 11.5. Acid oxalate extractable Al plus $\frac{1}{2}$ Fe ranges from 1.4 to 2.0. P retention ranges from 80 to 85. The content of glass ranges from 5 to 10 percent. Reaction ranges from slightly acid to strongly acid.

The Bt horizon has dry color of 7.5YR 5/3, 5/4, 6/3, 6/4, 7/4, or 7/6. Moist color is 7.5YR 3/2, 3/3, 3/4, 4/2, 4/3, 4/4, 5/3, or 5/6 or 5YR 4/4. Texture is gravelly loam, gravelly sandy loam, very gravelly loam, very gravelly fine sandy loam, or very gravelly sandy loam. The content of clay ranges from 10 to 25 percent. The horizon has 10 to 40 percent gravel and 0 to 15 percent cobbles. NaF pH is 10.5 to 11.5. Acid oxalate extractable Al plus $\frac{1}{2}$ Fe ranges from 1.0 to 1.8. P retention ranges from 65 to 85. The content of glass ranges from 2 to 10 percent. Reaction ranges from slightly acid to strongly acid.

The 2Bt horizon has dry color of 7.5YR 5/4, 5/6, 6/4, 6/6, 7/4, or 7/6; 5YR 4/6, 5/4, or 5/6; 2.5YR 7/6; or 10YR 6/4, 7/4, 7/6, or 8/4. Moist color is 7.5YR 3/4, 4/3, 4/4, 5/4,

5/6, 5/8, or 6/6; 5YR 4/6 or 5/4; or 10YR 4/3, 5/6, 6/6, or 7/6. Texture is very gravelly loam, very gravelly sandy loam, very gravelly fine sandy loam, very gravelly sandy clay loam, extremely gravelly loam, extremely gravelly coarse sandy loam, extremely gravelly sandy clay loam, very cobbly loam, very cobbly sandy clay loam, very cobbly clay loam, extremely cobbly loam, extremely cobbly sandy clay loam, very stony loam, or very stony clay loam. The content of clay ranges from 15 to 32 percent. The horizon has 10 to 70 percent gravel, 5 to 50 percent cobbles, and 0 to 30 percent stones. NaF pH is 9.3 to 10.5. Acid oxalate extractable Al plus $\frac{1}{2}$ Fe is less than 1. P retention is less than 60. Reaction ranges from slightly acid to very strongly acid.

The 2BCt horizon has dry color of 7.5YR 8/6, 2.5YR 7/4, 10YR 7/4 or 7/6, or 2.5Y 6/2, 8/1, 8/3, or 8/4. Moist color is 7.5YR 5/6 or 6/3, 2.5YR 6/4, 10YR 6/6, or 2.5Y 6/6, 7/3, 7/4, or 7/6. Texture is very stony loam, extremely cobbly loam, extremely stony loam, or extremely gravelly coarse sandy loam. The content of clay ranges from 12 to 18 percent. The horizon has 0 to 80 percent gravel, 5 to 50 percent cobbles, and 5 to 50 percent stones. NaF pH is 9.0 to 9.5. Reaction ranges from moderately acid to very strongly acid.

The 2C horizon has dry color of 2.5YR 8/3 or 10YR 7/6. Moist color is 2.5YR 7/6 or 10YR 5/6. Texture is very stony loam, extremely gravelly coarse sandy loam, extremely gravelly sandy loam, or very gravelly fine sandy loam. The content of clay ranges from 9 to 15 percent. The horizon has 0 to 80 percent gravel, 5 to 10 percent cobbles, and 30 to 50 percent stones. NaF pH is 9.0 to 9.5. Reaction ranges from moderately acid to very strongly acid.

Subaco Taxadjunct

The Subaco taxadjunct consists of moderately deep, poorly drained soils that formed in clayey alluvium derived from mixed rock sources. These soils are on basin rims. Slopes range from 0 to 2 percent. The mean annual precipitation is about 18 inches (457 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine, smectitic, thermic Aquic Durixererts

Typical Pedon

Subaco taxadjunct clay, on a slope of less than 1 percent, under a cover of annual grasses, at an elevation of 69 feet (21 m). When described on 10/27/1988, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 8 inches (0 to 20 cm); dark gray (10YR 4/1) clay, very dark gray (10YR 2/1) moist; 54 percent clay; strong coarse prismatic structure parting to strong fine and medium granular; very hard, firm, very sticky, very plastic; common very fine roots; many very fine tubular and irregular pores; moderately alkaline, pH 8.0 by pH meter 1:1 water; clear smooth boundary.

B_{ss}—8 to 16 inches (20 to 41 cm); dark gray (10YR 4/1) silty clay, very dark gray (10YR 3/1) moist; 55 percent clay; strong coarse prismatic structure parting to strong medium angular blocky; extremely hard, very firm, very sticky, very plastic; common very fine roots; many very fine tubular and irregular pores; 3 percent slickensides; strongly alkaline, pH 8.7 by pH meter 1:1 water; clear smooth boundary.

B_{kss}—16 to 29 inches (41 to 74 cm); dark gray (10YR 4/1) silty clay; very dark gray (10YR 3/1) moist; 55 percent clay; strong coarse prismatic structure parting to strong medium angular blocky; extremely hard, very firm, very sticky, very plastic; few very fine roots; many very fine tubular and irregular pores; 3 percent slickensides; strongly effervescent; 3 percent fine irregular carbonate masses; strongly alkaline, pH 9.0 by pH meter 1:1 water; abrupt wavy boundary.

Bk—29 to 35 inches (74 to 89 cm); light brownish gray (10YR 6/2) clay, grayish brown (10YR 5/2) moist; 50 percent clay; moderate medium subangular blocky structure; very hard, very firm, very sticky, very plastic; few very fine roots; many very fine tubular and irregular pores; finely disseminated carbonates throughout; strongly effervescent; very strongly alkaline, pH 9.2 by pH meter 1:1 water; abrupt wavy boundary.

2Bkqm—35 to 42 inches (89 to 107 cm); indurated duripan, dark grayish brown (2.5Y 4/2) moist; silty clay loam; 32 percent clay; strongly effervescent; strongly alkaline, pH 8.8 by pH meter 1:1 water; indurated, silica- and lime-laminated capping 1 cm thick; abrupt smooth boundary.

2Cd—42 inches (107 cm); dense material; sandy loam; 7 percent clay; moderately alkaline, pH 8.3 by pH meter 1:1 water.

Type location: Butte County, California; about 1.1 miles northwest of Pennington, approximately 1,200 feet north and 200 feet west of the southeast corner of sec. 24, T. 17 N., R. 1 E.; 39 degrees, 18 minutes, 26 seconds north latitude and 121 degrees, 47 minutes, 52 seconds west longitude; NAD27; USGS Quad: Pennington, California.

Range in Characteristics

Depth to the duripan ranges from 20 to 40 inches (51 to 102 cm). Depth to dense material ranges from 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry from about June to October (120 to 125 days) when the soils are not irrigated. The particle-size control section averages 40 to 60 percent clay. Mineralogy is smectitic. The content of organic matter is 1 to 3 percent to a depth of 29 inches (74 cm) and is less than 1 percent from 29 to 35 inches (74 to 89 cm). The depth to carbonates ranges from 0 to 25 inches (0 to 64 cm). Electrical conductivity ranges from less than 1 mmho to 4 mmhos per cm throughout the profile. Surface-initiated, reversible cracks 0.75 inch to 2 inches (1.9 to 5 cm) wide extend to a depth of 29 inches (74 cm) or more or to the 2Bkqm horizon. The cracks remain open from June to October (150 to 180 days) in nonirrigated areas and are closed the rest of the year. A fluctuating water table can occur between the top of the duripan and 18 to 40 inches (46 to 102 cm) below the surface of the soil from December through April.

The A horizon has dry color of 10YR 3/1 or 4/1. Moist color is 10YR 2/1 or 3/1. The content of clay ranges from 45 to 55 percent. The content of exchangeable sodium is 0 to 2 percent. SAR is 0 to 2. Reaction is slightly alkaline or moderately alkaline.

The Bss horizon has dry color of 10YR 3/1, 4/1, or 5/1. Moist color is 10YR 3/1 or 4/1. Texture is silty clay or clay. The content of clay ranges from 50 to 60 percent. The content of exchangeable sodium is 2 to 3 percent. SAR is 2 to 3. Reaction ranges from slightly alkaline to strongly alkaline.

The Bkss horizon has dry color of 10YR 4/1, 5/1, 6/1, or 7/1. Moist color is 10YR 3/1, 4/1, or 5/1. Texture is silty clay or clay. The content of clay ranges from 50 to 60 percent. This horizon is slightly effervescent to strongly effervescent. The content of exchangeable sodium is 3 to 12 percent. SAR is 3 to 7. Reaction is moderately alkaline or strongly alkaline.

The Bk horizon has dry color of 10YR 6/2, 7/2, or 8/2. Moist color is 10YR 5/2 or 6/2. Texture is clay loam or clay. The content of clay ranges from 35 to 60 percent. This horizon is strongly effervescent or violently effervescent. The content of exchangeable sodium is 10 to 13 percent. SAR is 5 to 10. The content of calcium carbonate ranges from 15 to 20 percent. Reaction is strongly alkaline or very strongly alkaline.

Reaction in the 2Bkqm horizon ranges from slightly alkaline to strongly alkaline.

The Subaco taxadjunct is a taxadjunct because it has a duripan and a calcic horizon, whereas the Subaco series typically has a paralithic contact of siltstone. This

difference does not significantly affect the use, management, or interpretations of the soils.

Sunnyslope Series

The Sunnyslope series consists of shallow, well drained soils that formed in residuum derived from metavolcanic rocks, mainly greenschist. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada foothills. Slopes range from 2 to 15 percent. The mean annual precipitation is about 30 inches (762 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Loamy-skeletal, mixed, superactive, thermic, shallow Ultic Haploxeralfs

Typical Pedon

Sunnyslope loam, on a north-facing slope of 7 percent, under a cover of blue oak, wild oat, rattlesnake brome, Italian ryegrass, red clover, dandelion, and wild onion, at an elevation of 215 feet (65 m). When described on 7/30/2001, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

- A—0 to 2 inches (0 to 5 cm); strong brown (7.5YR 5/6) loam, dark brown (7.5YR 3/3) moist; 17 percent clay; moderate very fine and fine subangular blocky structure; moderately hard, very friable, slightly sticky, slightly plastic; many very fine roots; common fine and many very fine tubular pores; 2 percent subangular quartz gravel and 10 percent subangular gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.
- Bt1—2 to 6 inches (5 to 15 cm); strong brown (7.5YR 5/6) gravelly loam, dark reddish brown (5YR 3/4) moist; 20 percent clay; strong fine and medium subangular blocky structure; moderately hard, very friable, slightly sticky, slightly plastic; many very fine roots; common fine and many very fine tubular pores; 4 percent patchy faint clay films on faces of peds; 15 percent subangular gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual wavy boundary.
- Bt2—6 to 10 inches (15 to 25 cm); yellowish red (5YR 4/6) very cobbly loam, reddish brown (5YR 4/4) moist; 25 percent clay; strong fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; common fine and many very fine roots; few fine and many very fine tubular pores; 25 percent patchy faint clay films on faces of peds; 35 percent subangular gravel and 25 percent subangular cobbles; slightly acid, pH 6.3 by Hellige-Truog; clear wavy boundary.
- Bt3—10 to 14 inches (25 to 36 cm); yellowish red (5YR 4/6) extremely gravelly clay loam, reddish brown (5YR 4/4) moist; 29 percent clay; strong very fine and fine subangular blocky structure; moderately hard, friable, slightly sticky, slightly plastic; few medium and common very fine roots; few fine and many very fine tubular pores; 25 percent patchy faint clay films on faces of peds; 70 percent subangular gravel; slightly acid, pH 6.3 by Hellige-Truog; clear wavy boundary.
- Crt—14 to 21 inches (36 to 53 cm); yellowish red (5YR 5/8), moderately cemented greenschist bedrock, yellowish red (5YR 4/6) moist; few very fine, fine, and coarse roots on top of the horizon; slightly acid, pH 6.5 by Hellige-Truog.

Type location: Butte County, California; about 4 miles southeast of Palermo, approximately 600 feet north and 1,250 feet east of the southwest corner of sec. 22, T. 18 N., R. 4 E.; 39 degrees, 23 minutes, 47.10 seconds north latitude and 121 degrees, 30 minutes, 57.59 seconds west longitude; NAD83; USGS Quad: Palermo, California.

Range in Characteristics

The depth to paralithic bedrock is 10 to 20 inches (25 to 51 cm). The mean annual soil temperature is 59 to 65 degrees F (15 to 18 degrees C). The soil moisture control section is dry in all parts from about June 1 to October 15 (about 150 days). The particle-size control section averages 15 to 25 percent clay and 35 to 50 percent rock fragments, mostly gravel. Mineralogy is mixed. Rock fragments on the surface range from 0 to 10 percent gravel, 0 to 15 percent cobbles, and 0 to 5 percent stones.

The A horizon has dry color of 7.5YR 4/6, 5/4, or 5/6. Moist color is 7.5YR 3/3 or 3/4. Texture is loam. The content of clay ranges from 10 to 18 percent. The content of gravel is 2 to 12 percent. The content of organic matter is 3 to 7 percent. By sum of cations, base saturation ranges from 65 to 75 percent. Reaction is slightly acid.

The upper part of the Bt horizon has dry color of 7.5YR 5/6 or 6/4 or 5YR 5/6. Moist color is 7.5YR 4/4 or 5YR 3/4. Texture is loam, gravelly loam, or very gravelly loam. The content of clay ranges from 15 to 20 percent. The content of gravel is 15 to 35 percent. The content of organic matter is 1 to 4 percent. By sum of cations, base saturation ranges from 65 to 75 percent. Reaction is moderately acid or slightly acid.

The lower part of the Bt horizon has dry color of 5YR 4/6 or 5/6 or 7.5YR 5/4. Moist color is 5YR 4/3 or 4/4. Texture is very gravelly loam, extremely gravelly loam, very cobbly loam, or extremely gravelly clay loam. The content of clay ranges from 15 to 30 percent. The content of gravel is 35 to 70 percent, and the content of cobbles is 0 to 25 percent. By sum of cations, base saturation ranges from 65 to 75 percent. The content of organic matter is 0.5 to 2 percent. Reaction is moderately acid or slightly acid.

Surnuf Series

The Surnuf series consists of very deep, well drained soils that formed in residuum and colluvium derived from metamorphic and intrusive igneous rocks. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada mountains. Slopes range from 3 to 70 percent. The mean annual precipitation is about 52 inches (1,321 mm), and the mean annual air temperature is about 56 degrees F (13 degrees C).

Taxonomic class: Fine, parasesquic, mesic Ultic Palexeralfs

Typical Pedon

Surnuf gravelly loam, on a northwest-facing slope of 37 percent, under a cover of Douglas-fir, ponderosa pine, and California black oak, at an elevation of 2,040 feet (622 m). When described on 9/27/2000, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 3 cm); slightly decomposed plant material; abrupt smooth boundary.

A—1 to 4 inches (3 to 10 cm); reddish yellow (5YR 7/6) gravelly loam, yellowish red (5YR 4/6) moist; 26 percent clay; strong fine and medium granular structure; moderately hard, very friable, slightly sticky, slightly plastic; many very fine and fine and common medium roots; many very fine to medium irregular and tubular pores; 30 percent gravel; neutral, pH 7.0 by Hellige-Truog; clear wavy boundary.

Bt1—4 to 9 inches (10 to 23 cm); reddish yellow (5YR 7/6) gravelly clay loam, yellowish red (5YR 4/6) moist; 31 percent clay; moderate fine and medium subangular blocky structure; moderately hard, very friable, moderately sticky, moderately plastic; many very fine to medium roots; many very fine and fine and common medium irregular and tubular pores; 90 percent continuous distinct clay films on faces of peds; 25 percent gravel; neutral, pH 6.8 by Hellige-Truog; gradual smooth boundary.

- Bt2—9 to 16 inches (23 to 41 cm); reddish yellow (5YR 7/6) gravelly clay loam, red (2.5YR 4/6) moist; 35 percent clay; moderate fine and medium subangular blocky structure; moderately hard, very friable, moderately sticky, moderately plastic; few coarse and many very fine to medium roots; many very fine to medium tubular pores; 90 percent continuous distinct clay films on faces of peds; 20 percent gravel; neutral, pH 6.8 by Hellige-Truog; gradual smooth boundary.
- Bt3—16 to 27 inches (41 to 69 cm); light red (2.5YR 6/8) gravelly clay, red (2.5YR 5/6) moist; 42 percent clay; moderate fine and medium subangular blocky structure; moderately hard, very friable, moderately sticky, moderately plastic; few coarse and many very fine to medium roots; many very fine to medium tubular pores; 95 percent continuous distinct clay films on faces of peds; 20 percent gravel; neutral, pH 6.7 by Hellige-Truog; gradual smooth boundary.
- Bt4—27 to 29 inches (69 to 74 cm); light red (2.5YR 6/8) gravelly clay, red (2.5YR 4/8) moist; 50 percent clay; moderate fine and medium subangular blocky structure; very hard, friable, moderately sticky, moderately plastic; few coarse and common very fine to medium roots; many very fine and fine and common medium tubular and irregular pores; 95 percent continuous distinct clay films on faces of peds; 20 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.
- Bt5—29 to 56 inches (74 to 142 cm); light red (2.5YR 6/8) gravelly silty clay, red (2.5YR 4/8) moist; 55 percent clay; strong fine and medium subangular blocky structure; very hard, friable, moderately sticky, moderately plastic; few coarse and common very fine to medium roots; many very fine and fine and common medium tubular and irregular pores; 99 percent continuous prominent clay films on faces of peds; 20 percent gravel; slightly acid, pH 6.4 by Hellige-Truog; gradual smooth boundary.
- Bt6—56 to 72 inches (142 to 183 cm); light red (2.5YR 6/8) silty clay, red (2.5YR 4/8) moist; 50 percent clay; strong fine and medium angular blocky structure; very hard, friable, moderately sticky, moderately plastic; few very fine to coarse roots; common very fine and fine and few medium tubular and irregular pores; 99 percent continuous prominent clay films on faces of peds; 10 percent gravel; slightly acid, pH 6.4 by Hellige-Truog.

Type location: Butte County, California; about 0.2 mile west of the intersection of Pinkston Canyon Road and Highway 70, approximately 300 feet south and 450 feet west of the northeast corner of sec. 34, T. 22 N., R. 4 E.; 39 degrees, 43 minutes, 32 seconds north latitude and 121 degrees, 30 minutes, 24 seconds west longitude; NAD83; USGS Quad: Cherokee, California.

Range in Characteristics

The depth to bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 52 to 59 degrees F (11 to 15 degrees C). The particle-size control section averages 35 to 45 percent clay and 10 to 35 percent rock fragments, mostly gravel. Mineralogy is parasesquic. Rock fragments on the surface range from 0 to 30 percent gravel, 0 to 10 percent cobbles, and 0 to 2 percent stones.

The A horizon has dry color of 7.5YR 6/4, 6/6, or 7/4 or 5YR 5/4, 6/4, or 7/6. Moist color is 7.5YR 4/3 or 4/4 or 5YR 3/3, 4/3, 4/4, or 4/6. Texture is gravelly loam, gravelly clay loam, clay loam, or loam. The content of clay ranges from 22 to 30 percent. The horizon has 5 to 30 percent gravel and 0 to 5 percent cobbles. Reaction is slightly acid or neutral.

The upper part of the Bt horizon has dry color of 7.5YR 6/4 or 6/6; 5YR 5/4, 5/6, 6/6, or 7/6; or 2.5YR 4/6, 5/4, 6/6, or 7/6. Moist color is 7.5YR 4/4 or 4/6; 5YR 4/3, 4/4, 4/6, 5/6, or 5/8; or 2.5YR 4/4 or 4/6. Texture is clay loam or gravelly clay loam. The content of clay ranges from 27 to 40 percent. The content of gravel is 0 to 25 percent, and the content of cobbles is 0 to 10 percent. Reaction is slightly acid or neutral.

The middle part of the Bt horizon has dry color of 7.5YR 6/6, 5YR 5/6 or 6/6, or 2.5YR 3/6, 4/8, 6/6, 6/8, or 7/6. Moist color is 5YR 4/6, 5/6, or 5/8 or 2.5YR 4/6, 5/6, or 4/8. Texture is clay, gravelly clay, cobbly clay, gravelly clay loam, or very cobbly clay loam. The content of clay ranges from 35 to 55 percent. The content of gravel is 0 to 30 percent, the content of cobbles is 0 to 25 percent, and the content of stones is 0 to 5 percent. Reaction is slightly acid or neutral.

The lower part of the Bt horizon has dry color of 5YR 6/6 or 6/8 or 2.5YR 4/4, 5/6, 6/6, 7/6, 4/8, or 6/8. Moist color is 5YR 5/6 or 5/8; 2.5YR 3/4, 4/6, 4/8, 5/6, or 5/8; or 7.5YR 5/6 or 6/8. Texture is clay, gravelly clay, cobbly clay, stony clay, very cobbly clay, extremely cobbly clay, silty clay, gravelly silty clay, very gravelly silty clay loam, gravelly clay loam, very gravelly clay loam, or extremely gravelly clay loam. The content of clay ranges from 35 to 55 percent. The content of gravel is 10 to 50 percent, the content of cobbles is 0 to 30 percent, and the content of stones is 0 to 25 percent. Reaction ranges from moderately acid to neutral.

Surnuf Taxadjunct

The Surnuf taxadjunct consists of very deep, well drained soils that formed in residuum and colluvium derived from metavolcanic rocks. These soils are on metamorphic Sierra Nevada mountains. Slopes range from 2 to 70 percent. The mean annual precipitation is about 52 inches (1,321 mm), and the mean annual air temperature is about 57 degrees F (14 degrees C).

Taxonomic class: Fine, parasesquic, mesic Ultic Haploxeralfs

Typical Pedon

Surnuf taxadjunct loam, on a northeast-facing slope of 26 percent, under a cover of mixed conifers, hardwoods, and shrubs, at an elevation of 1,845 feet (562 m). When described on 8/9/2000, the soil was dry to a depth of 18 inches (46 cm) and slightly moist from 18 to 67 inches (46 to 170 cm). (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 2 cm); slightly decomposed plant material

A—1 to 5 inches (2 to 13 cm); reddish brown (5YR 5/4) loam, dark reddish brown (5YR 3/4) moist; 25 percent clay; strong fine granular structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine roots; many very fine irregular pores; 10 percent greenstone schist gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 9.0; abrupt smooth boundary.

Bt1—5 to 11 inches (13 to 28 cm); red (2.5YR 5/6) clay loam, red (2.5YR 4/6) moist; 38 percent clay; moderate medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; common fine and medium and few very fine roots; common fine and many very fine tubular pores; 20 percent discontinuous distinct clay films on surfaces along pores; 10 percent greenstone schist gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 9.0; abrupt smooth boundary.

Bt2—11 to 18 inches (28 to 46 cm); red (2.5YR 5/6) silty clay, red (2.5YR 4/6) moist; 50 percent clay; strong medium angular blocky structure; hard, very firm, very sticky, very plastic; few very fine and fine and common medium and coarse roots; few fine and common very fine tubular pores; 50 percent continuous prominent clay films on surfaces along pores; 5 percent greenstone schist gravel; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 9.5; gradual smooth boundary.

Bt3—18 to 31 inches (46 to 79 cm); red (2.5YR 5/8) silty clay, red (2.5YR 4/8) moist; 55 percent clay; strong medium angular blocky structure; hard, very firm, very sticky, very plastic; few fine, common medium, and few coarse roots; few fine and common very fine tubular pores; 60 percent continuous prominent clay films on

surfaces along pores; 5 percent greenstone schist gravel; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 9.5; gradual smooth boundary.

Bt4—31 to 43 inches (79 to 109 cm); red (2.5YR 5/8) silty clay, red (2.5YR 4/8) moist; 45 percent clay; strong medium angular blocky structure; hard, friable, very sticky, very plastic; few fine to coarse roots; common very fine tubular pores; 80 percent continuous prominent clay films on surfaces along pores; 5 percent greenstone schist gravel; strongly acid, pH 5.5 by Hellige-Truog; clear smooth boundary.

Bt5—43 to 54 inches (109 to 137 cm); red (2.5YR 5/8) very stony silty clay loam, red (2.5YR 4/8) moist; 38 percent clay; moderate fine angular blocky structure; hard, friable, very sticky, very plastic; few fine and common medium and coarse roots; common very fine tubular pores; 80 percent continuous prominent clay films on surfaces along pores; 5 percent greenstone schist gravel and 50 percent greenstone schist stones; strongly acid, pH 5.5 by Hellige-Truog; gradual smooth boundary.

BCt—54 to 67 inches (137 to 170 cm); 30 percent reddish yellow (5YR 6/8) and 70 percent red (2.5YR 5/6) silty clay loam, 70 percent red (2.5YR 4/6) and 30 percent yellowish red (5YR 5/6) moist; 33 percent clay; moderate fine subangular blocky structure; hard, friable, slightly sticky, moderately plastic; few fine roots; common very fine tubular pores; 80 percent continuous prominent clay films on surfaces along pores; 5 percent greenstone schist gravel; very strongly acid, pH 5.0 by Hellige-Truog.

Type location: Butte County, California; about 1.1 miles northwest of Bloomer Hill Lookout, approximately 1,700 feet west and 1,600 feet south of the northeast corner of sec. 24, T. 21 N., R. 4 E.; 39 degrees, 39 minutes, 54 seconds north latitude and 121 degrees, 28 minutes, 28 seconds west longitude; NAD83; USGS Quad: Berry Creek, California.

Range in Characteristics

The depth to bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 53 to 59 degrees F (12 to 15 degrees C). The particle-size control section averages 48 percent clay and 1 percent rock fragments, mostly gravel. Mineralogy is mixed. NaF pH is 9.0 to 9.5 to a depth of 31 inches (79 cm). Rock fragments on the surface range from 0 to 10 percent gravel, 0 to 20 percent cobbles, 0 to 15 percent stones, and 0 to 5 percent boulders.

The A horizon has dry color of 5YR 5/4, 5/6, or 6/4 or 7.5YR 6/4. Moist color is 5YR 3/3, 3/4, or 3/6 or 2.5YR 4/4. Texture is loam. The content of clay ranges from 20 to 25 percent. The horizon has 5 to 10 percent gravel, 0 to 30 percent cobbles, and 0 to 30 percent stones. The content of organic matter is 5 to 8 percent. By sum of cations, base saturation ranges from 50 to 55 percent. Reaction is slightly acid or neutral.

The upper part of the Bt horizon has dry color of 2.5YR 5/6 or 5YR 4/6 or 6/6. Moist color is 2.5YR 3/3, 3/6, 4/4, or 4/6 or 5YR 4/6. Texture is clay loam, gravelly clay loam, very gravelly clay loam, gravelly loam, or silty clay loam. The content of clay ranges from 22 to 40 percent. The content of gravel is 0 to 40 percent, the content of cobbles is 0 to 10 percent, and the content of stones is 0 to 30 percent. The content of organic matter is 3 to 6 percent. By sum of cations, base saturation ranges from 50 to 55 percent. Reaction ranges from strongly acid to slightly acid.

The lower part of the Bt horizon has dry color of 2.5YR 4/8, 5/6, 5/8, or 6/6; 5YR 6/6 or 6/8; or 7.5YR 5/8. Moist color is 2.5YR 3/6, 4/6, 4/8, or 5/6; 5YR 5/8; 7.5YR 5/6; or 10R 4/6. Texture is silty clay, clay, silty clay loam, gravelly clay, gravelly silty clay, extremely bouldery silty clay, extremely cobbly silty clay, or very stony silty clay loam. The content of clay ranges from 35 to 65 percent. The content of gravel is 0 to 25 percent, the content of cobbles is 0 to 60 percent, the content of stones is 0 to 50 percent, and the content of boulders is 0 to 60 percent. The content of organic matter

is 1.0 to 3.0 percent. By sum of cations, base saturation ranges from 50 to 65 percent. Reaction ranges from very strongly acid to slightly acid.

The BCt horizon has dry color of 5YR 5/6 or 5/8, 2.5YR 5/6 or 6/8, or 7.5YR 6/6. Moist color is 5YR 5/6, 2.5YR 4/6 or 5/6, or 7.5YR 4/6 or 6/8. Texture is silty clay loam, silt loam, gravelly sandy clay loam, or very gravelly sandy clay loam. The content of clay ranges from 25 to 35 percent. The horizon has 0 to 40 percent gravel and 0 to 5 percent cobbles. The content of organic matter is 0.5 to 1 percent. By sum of cations, base saturation ranges from 50 to 65 percent. Reaction ranges from very strongly acid to moderately acid.

The Surnuf taxadjunct is a taxadjunct because the content of clay at a depth of 60 inches (150 cm) decreases by more than 20 percent. This difference does not significantly affect the use, management, or interpretations of the soils.

Swedesflat Series

The Swedesflat series consists of shallow, well drained soils that formed in residuum derived from intrusive igneous rocks, mainly quartz diorite. These soils are on ridgetops and side slopes on plutons on Sierra Nevada foothills. Slopes range from 2 to 30 percent. The mean annual precipitation is about 35 inches (889 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Loamy, mixed, active, thermic, shallow Ultic Haploxeralfs

Typical Pedon

Swedesflat cobbly fine sandy loam, on a northeast-facing slope of 10 percent, under a cover of annual grasses, forbs, blue oak, and scattered foothill pine, whiteleaf manzanita, buckbrush, and Pacific poison oak, at an elevation of 1,450 feet (442 m). When described on 8/9/1999, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); very pale brown (10YR 7/4) cobbly fine sandy loam, yellowish brown (10YR 5/4) moist; 14 percent clay; weak very fine and fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; many very fine roots; many very fine to medium tubular pores; 10 percent subangular gravel and 15 percent subangular cobbles; slightly acid, pH 6.3 by Hellige-Truog; clear wavy boundary.

ABt—2 to 8 inches (5 to 20 cm); light yellowish brown (10YR 6/4) cobbly sandy loam, yellowish brown (10YR 5/4) moist; 14 percent clay; weak fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; many fine roots; many very fine to medium tubular pores; 3 percent patchy faint clay films on surfaces along pores and 3 percent patchy faint clay films on surfaces along root channels; 2 percent fine spherical reddish yellow (5YR 6/8) oxidized iron masses; 10 percent subangular gravel and 15 percent subangular cobbles; slightly acid, pH 6.3 by Hellige-Truog; clear smooth boundary.

Bt—8 to 12 inches (20 to 30 cm); strong brown (7.5YR 5/6) sandy loam, strong brown (7.5YR 4/6) moist; 18 percent clay; moderate fine and medium subangular blocky structure; moderately hard, very friable, slightly sticky, slightly plastic; few very fine roots; many very fine to medium tubular pores; 7 percent patchy faint clay films on faces of peds; 5 percent subangular gravel; moderately acid, pH 6.1 by Hellige-Truog; clear wavy boundary.

Crt—12 to 18 inches (30 to 46 cm); weakly cemented quartz diorite bedrock; few fine roots; 40 percent clay films in fractures; clear wavy boundary.

Cr—18 inches (46 cm); weakly cemented quartz diorite bedrock; few fine roots on top of the horizon.

Type location: Butte County, California; about 1.5 miles west of Hurlerton, approximately 500 feet south and 1,600 feet west of the northeast corner of sec. 21, T. 19 N., R. 5 E.; 39 degrees, 29 minutes, 48 seconds north latitude and 121 degrees, 24 minutes, 46 seconds west longitude; NAD83; USGS Quad: Bangor, California.

Range in Characteristics

The depth to paralithic bedrock is 10 to 20 inches (25 to 51 cm). The mean annual soil temperature is 59 to 63 degrees F (16 to 17 degrees C). The soil moisture control section is dry in all parts from about June through October (about 165 days). The particle-size control section averages 15 to 25 percent clay, 4 to 25 percent gravel, and 0 to 5 percent cobbles. Mineralogy is mixed. Rock fragments on the surface range from 0 to 3 percent stones.

The A horizon has dry color of 10YR 5/3 or 7/4 or 7.5YR 4/4, 4/6, or 5/4. Moist color is 10YR 3/4 or 5/4 or 7.5YR 3/4 or 4/4. Texture is loam, gravelly loam, sandy loam, gravelly sandy loam, fine sandy loam, or cobbly fine sandy loam. The content of clay ranges from 12 to 20 percent. The horizon has 2 to 30 percent gravel and 0 to 15 percent cobbles. By sum of cations, base saturation ranges from 50 to 70 percent. The content of organic matter is 2 to 8 percent. Reaction ranges from strongly acid to neutral.

The ABt horizon has dry color of 10YR 6/4 or 7.5YR 5/4, 5/6, or 6/4. Moist color is 10YR 5/4 or 7.5YR 4/4 or 4/6. Texture is loam, gravelly loam, sandy loam, gravelly sandy loam, or cobbly sandy loam. The content of clay ranges from 13 to 20 percent. The horizon has 5 to 35 percent gravel and 0 to 15 percent cobbles. By sum of cations, base saturation ranges from 40 to 60 percent. The content of organic matter is 1.5 to 3 percent. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 10YR 5/3 or 5/4, 7.5YR 5/4 or 5/6, or 5YR 5/8. Moist color is 7.5YR 3/4, 4/4, or 4/6 or 5YR 4/6. Texture is gravelly loam, sandy loam, gravelly fine sandy loam, sandy clay loam, or gravelly sandy clay loam. The content of clay ranges from 18 to 25 percent. The content of gravel is 0 to 30 percent. By sum of cations, base saturation ranges from 40 to 74 percent. The content of organic matter is 0.2 to 1.5 percent. Reaction ranges from moderately acid to neutral.

Thermalito Series

The Thermalito series consists of moderately deep, somewhat poorly drained soils that formed in alluvium derived from metamorphic and igneous rocks. These soils are on mounds on intermediate terraces. Slopes range from 0 to 9 percent. The mean annual precipitation is about 24 inches (610 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, active, thermic Abruptic Durixeralfs

Typical Pedon

Thermalito sandy loam, on a 3 slope of percent, under a cover of annual grasses and forbs, at an elevation of 161 feet (49 m). When described on 4/17/1997, the soil was slightly moist throughout. (Colors are for dry soil unless otherwise noted.)

- A—0 to 2 inches (0 to 5 cm); brown (7.5YR 5/4) sandy loam, dark reddish brown (5YR 3/4) moist; 15 percent clay; moderate thin platy structure parting to moderate fine subangular blocky; slightly hard, very friable, nonsticky, nonplastic; common very fine roots; few very fine tubular pores; 5 percent fine irregular strong brown (7.5YR 4/6) oxidized iron masses; 10 percent well rounded gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.
- Bt1—2 to 6 inches (5 to 15 cm); light brown (7.5YR 6/4) gravelly sandy loam, reddish brown (5YR 4/4) moist; 20 percent clay; moderate medium subangular blocky

- structure; hard, friable, nonsticky, nonplastic; common very fine roots; few very fine tubular pores; 20 percent discontinuous distinct clay films on faces of peds; 2 percent fine irregular black (N 2/0) manganese masses and 5 percent fine irregular strong brown (7.5YR 4/6) oxidized iron masses; 20 percent well rounded gravel; strongly acid, pH 5.5 by Hellige-Truog; abrupt smooth boundary.
- Bt2—6 to 12 inches (15 to 30 cm); light brown (7.5YR 6/4) sandy clay loam, reddish brown (5YR 4/4) moist; 24 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine roots; few fine and common very fine tubular pores; 30 percent discontinuous distinct clay films on faces of peds; 10 percent well rounded gravel; strongly acid, pH 5.5 by Hellige-Truog; abrupt smooth boundary.
- Bt3—12 to 18 inches (30 to 46 cm); reddish yellow (7.5YR 6/6) gravelly sandy clay loam, reddish brown (5YR 4/4) moist; 28 percent clay; moderate medium subangular blocky structure; hard, friable, slightly sticky, slightly plastic; few very fine roots; few fine and common very fine tubular pores; 50 percent discontinuous distinct clay films on faces of peds; 25 percent well rounded gravel; strongly acid, pH 5.5 by Hellige-Truog; abrupt smooth boundary.
- Bt4—18 to 23 inches (46 to 58 cm); light brown (7.5YR 6/4) gravelly sandy clay loam, reddish brown (5YR 5/4) moist; 30 percent clay; moderate fine subangular blocky structure; hard, firm, slightly sticky, slightly plastic; few very fine roots; few fine and common very fine tubular pores; 50 percent discontinuous distinct clay films on faces of peds; 25 percent well rounded gravel; strongly acid, pH 5.5 by Hellige-Truog; abrupt smooth boundary.
- Bt5—23 to 25 inches (58 to 63 cm); reddish yellow (5YR 6/6) gravelly sandy clay loam, yellowish red (5YR 4/6) moist; 33 percent clay; moderate fine subangular blocky structure; hard, firm, moderately sticky, moderately plastic; few very fine roots; few fine tubular pores; 50 percent discontinuous distinct clay films on faces of peds; 20 percent well rounded gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.
- 2Bt6—25 to 29 inches (63 to 74 cm); red (2.5YR 5/6) gravelly clay, red (2.5YR 4/6) moist; 50 percent clay; moderate fine angular blocky structure; extremely hard, very firm, very sticky, moderately plastic; few very fine roots; few very fine tubular pores; 55 percent discontinuous distinct clay films on faces of peds; 25 percent well rounded gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.
- 2Bt7—29 to 32 inches (74 to 81 cm); yellowish red (5YR 5/6) gravelly clay, red (2.5YR 4/6) moist; 45 percent clay; moderate fine angular blocky structure; extremely hard, very firm, very sticky, moderately plastic; few very fine roots; few very fine tubular pores; 55 percent discontinuous distinct clay films on faces of peds; 2 percent fine irregular black (N 2/0) manganese masses; 30 percent well rounded gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.
- 3Bqm—32 to 60 inches (81 to 152 cm); indurated duripan; cemented by silica; 30 percent well rounded gravel.

Type location: Butte County, California; about 3.8 miles west of Oroville, approximately 1,600 feet west and 650 feet south of the northeast corner of sec. 16, T. 19 N., R. 3 E.; 39 degrees, 30 minutes, 28 seconds north latitude and 121 degrees, 38 minutes, 15 seconds west longitude; NAD83; USGS Quad: Shippee, California.

Range in Characteristics

Depth to an indurated gravelly duripan is 20 to 40 inches (51 to 102 cm), and depth to the 2Bt horizon is 18 to 25 inches (46 to 63 cm). The mean annual soil temperature is 61 to 64 degrees F (16 to 18 degrees C). The particle-size control section averages 24 to 35 percent clay and 2 to 30 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur from the top of the

duripan to 14 inches (36 cm) below the surface of the soil from December through April. Rock fragments on the surface range from 0 to 20 percent gravel.

The A horizon has dry color of 7.5YR 5/4, 5/6, 6/4, 6/6, or 7/3 or 10YR 6/4 or 7/3. Moist color is 5YR 3/4, 4/4, or 4/6; 7.5YR 3/3, 4/3, or 5/4; or 10YR 3/4. Texture is sandy loam, gravelly sandy loam, fine sandy loam, or loam. The content of clay ranges from 12 to 20 percent. The content of gravel is 2 to 25 percent. The content of organic matter is 0.5 to 2 percent. Redoximorphic features range from 2 to 25 percent soft oxidized iron masses. Reaction ranges from strongly acid to slightly acid.

The Bt horizon has dry color of 7.5YR 5/6, 6/4, 6/6, or 7/4 or 5YR 5/6, 6/4, or 6/6. Moist color is 7.5YR 3/4, 4/4, or 4/6 or 5YR 3/4, 4/4, 4/6, or 5/4. Texture is gravelly sandy loam, sandy clay loam, gravelly sandy clay loam, loam, or clay loam. The content of clay ranges from 18 to 33 percent. The content of gravel is 5 to 30 percent. The content of organic matter is 0.1 to 0.5 percent. Redoximorphic features range from 0 to 5 percent soft oxidized iron masses and 0 to 2 percent soft manganese masses. Reaction ranges from strongly acid to neutral.

The 2Bt horizon has dry color of 2.5YR 5/6; 5YR 5/6, 6/4, or 6/6; or 7.5YR 5/4 or 6/6. Moist color is 2.5YR 4/6 or 5YR 4/4, 4/6, or 5/4. Texture is gravelly clay, clay, sandy clay, or silty clay. The content of clay ranges from 43 to 50 percent. The content of gravel is 2 to 30 percent. The content of organic matter is 0 to 0.5 percent. Redoximorphic features range from 0 to 2 percent soft manganese masses. Reaction ranges from moderately acid to neutral.

The 3Bqm horizon is indurated to weakly cemented, becoming less cemented with increasing depth, and may have a silica and manganese capping up to $\frac{1}{8}$ inch (3 mm) thick. The content of gravel is 10 to 50 percent. Redoximorphic features range from 10 to 90 percent manganese surface coatings on the upper surface.

Thermalrocks Series

The Thermalrocks series consists of very shallow, well drained soils that formed in residuum weathered from basalt. These soils are on the top of basalt plateaus on volcanic Sierra Nevada foothills. Slopes range from 2 to 30 percent. The mean annual precipitation is about 28 inches (711 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Loamy-skeletal, mixed, superactive, thermic Lithic Haplohumults

Typical Pedon

Thermalrocks very gravelly loam, on a northwest-facing slope of 2 percent, under a cover of annual grasses and forbs, at an elevation of 970 feet (296 m). When described on 5/17/2001, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

- A—0 to 1 inch (0 to 3 cm); brown (10YR 5/3) very gravelly loam, dark brown (7.5YR 3/2) moist; 16 percent clay; weak thin platy structure parting to moderate fine granular; soft, friable, slightly sticky, nonplastic; many very fine and fine roots; many fine irregular pores; 15 percent subangular basalt cobbles and 20 percent subangular basalt gravel; strongly acid, pH 5.5 by Hellige-Truog; clear wavy boundary.
- Bt—1 to 5 inches (3 to 13 cm); brown (10YR 5/3) very gravelly loam, dark brown (7.5YR 3/2) moist; 20 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine and fine roots; common fine irregular pores; 10 percent discontinuous faint clay films on surfaces along pores; 15 percent subangular basalt cobbles and 45 percent subangular basalt gravel; very strongly acid, pH 5.0 by Hellige-Truog; abrupt irregular boundary.
- R—5 inches (13 cm); indurated basalt bedrock.

Type location: Butte County, California; about 2.6 miles north of Oroville, approximately 1,000 feet south and 2,800 feet east of the northwest corner of sec. 31, T. 20 N., R. 4 E.; 39 degrees, 33 minutes, 06.55 seconds north latitude and 121 degrees, 34 minutes, 01.19 seconds west longitude; NAD83; USGS Quad: Oroville, California.

Range in Characteristics

The depth to lithic bedrock is 5 to 10 inches (8 to 25 cm). The mean annual soil temperature is 61 to 64 degrees F (16 to 18 degrees C). The soil moisture control section is dry in all parts from about April to November (about 150 to 200 days). The particle-size control section averages 18 to 27 percent clay and 35 to 55 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. By sum of cations, base saturation ranges from 4 to 7 percent. Rock fragments on the surface range from 0 to 60 percent gravel, 0 to 50 percent cobbles, and 0 to 10 percent stones. Some pedons are cobbly, very cobbly, or gravelly silt loam throughout.

The A horizon has dry color of 10YR 3/3, 4/3, 4/4, or 5/3. Moist color is 7.5YR 2/2, 3/2, or 3/3 or 10YR 2/2, 3/2, or 3/3. Texture is cobbly loam, very gravelly loam, gravelly loam, loam, extremely gravelly loam, or very cobbly loam. The content of clay ranges from 14 to 18 percent. The horizon has 10 to 65 percent gravel and 5 to 40 percent cobbles. The content of organic matter is 4 to 8 percent. Reaction ranges from very strongly acid to slightly acid.

The Bt horizon has dry color of 10YR 3/3, 3/4, 4/4, 5/3, or 5/4 or 7.5YR 4/4. Moist color is 7.5YR 3/2, 3/4, or 4/2 or 10YR 2/2, 3/2, 3/3, or 4/2. Texture is very gravelly loam, very cobbly loam, very cobbly clay loam, extremely cobbly loam, or extremely gravelly loam. The content of clay ranges from 18 to 28 percent. The horizon has 10 to 90 percent gravel and 15 to 50 percent cobbles. The content of organic matter is 1.5 to 5 percent. Reaction ranges from very strongly acid to moderately acid.

Thompsonflat Series

The Thompsonflat series consists of very deep, moderately well drained soils that formed in alluvium derived from metamorphic and igneous rocks. These soils are on intermediate and high terraces. Slopes range from 0 to 30 percent. The mean annual precipitation is about 24 inches (610 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, active, thermic Ultic Haploxeralfs

Typical Pedon

Thompsonflat fine sandy loam, on a southeast-facing slope of 5 percent, under a cover of annual grasses, forbs, interior live oak, foothill pine, toyon, and redbud, at an elevation of 270 feet (82 m). When described on 9/26/2000, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 3 inches (0 to 8 cm); brown (7.5YR 5/4) fine sandy loam, dark brown (7.5YR 3/3) moist; 15 percent clay; moderate medium platy structure parting to moderate fine subangular blocky; slightly hard, friable, nonsticky, nonplastic; common very fine roots; common fine irregular and few very fine tubular pores; 10 percent well rounded gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.

Bt1—3 to 7 inches (8 to 18 cm); reddish brown (5YR 5/4) fine sandy loam, dark reddish brown (5YR 3/4) moist; 20 percent clay; moderate fine subangular blocky structure; slightly hard, friable, nonsticky, slightly plastic; few very fine to medium

- roots; common very fine tubular pores; 15 percent discontinuous distinct clay films on faces of peds; 5 percent well rounded gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.
- Bt2—7 to 11 inches (18 to 28 cm); yellowish red (5YR 5/6) sandy clay loam, reddish brown (2.5YR 4/4) moist; 28 percent clay; moderate fine subangular blocky structure; hard, firm, slightly sticky, slightly plastic; few fine and medium roots; common very fine tubular pores; 25 percent discontinuous distinct clay films on faces of peds; 5 percent well rounded gravel and 5 percent well rounded cobbles; slightly acid, pH 6.3 by Hellige-Truog; clear smooth boundary.
- Bt3—11 to 15 inches (28 to 38 cm); yellowish red (5YR 4/6) sandy clay, dark reddish brown (2.5YR 3/4) moist; 38 percent clay; moderate fine subangular blocky structure; hard, very firm, moderately sticky, moderately plastic; few fine roots; common very fine tubular pores; 30 percent discontinuous distinct clay films on faces of peds; 5 percent well rounded cobbles and 10 percent well rounded gravel; slightly acid, pH 6.3 by Hellige-Truog; clear smooth boundary.
- 2Bt4—15 to 22 inches (38 to 56 cm); brown (7.5YR 5/4) gravelly sandy clay, brown (7.5YR 4/3) moist; 43 percent clay; weak fine subangular blocky structure; hard, very firm, moderately sticky, very plastic; few fine roots; common very fine tubular pores; 50 percent discontinuous distinct clay films on faces of peds; 5 percent well rounded cobbles and 25 percent well rounded gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.
- 3Btq1—22 to 35 inches (56 to 89 cm); reddish yellow (7.5YR 6/6) extremely gravelly sandy clay loam, strong brown (7.5YR 5/6) moist; 25 percent clay; weak very fine subangular blocky structure parting to single grain; noncemented, hard, firm, slightly sticky, slightly plastic; few fine roots; few very fine tubular pores; 10 percent discontinuous distinct clay films on rock fragments and 20 percent patchy distinct clay bridges on the upper faces of peds; 10 percent silica on rock fragments and on faces of peds; 15 percent well rounded cobbles and 55 percent well rounded gravel; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.
- 3Btq2—35 to 45 inches (89 to 114 cm); reddish yellow (7.5YR 6/6) extremely gravelly coarse sandy loam, strong brown (7.5YR 5/6) moist; 12 percent clay; weak very fine subangular blocky structure parting to single grain; noncemented, hard, firm, nonsticky, nonplastic; few fine roots; few very fine tubular pores; 10 percent discontinuous distinct clay films on rock fragments and 40 percent patchy distinct clay bridges on the upper faces of peds; 10 percent silica on rock fragments and faces of peds; 25 percent well rounded cobbles and 55 percent well rounded gravel; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.
- 3Btq3—45 to 53 inches (114 to 135 cm); reddish yellow (7.5YR 6/6) extremely gravelly coarse sandy loam, strong brown (7.5YR 4/6) moist; 5 percent clay; weak very fine subangular blocky structure parting to single grain; noncemented, hard, firm, nonsticky, nonplastic; few fine roots; few very fine tubular pores; 10 percent patchy distinct clay bridges on the upper faces of peds and 10 percent discontinuous distinct clay films on rock fragments; 15 percent silica on rock fragments and faces of peds; 5 percent fine irregular black (N 2/0) manganese masses; 20 percent well rounded cobbles and 45 percent well rounded gravel; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.
- 3Btq4—53 to 66 inches (135 to 168 cm); reddish yellow (7.5YR 6/6) extremely gravelly coarse sandy loam, strong brown (7.5YR 4/6) moist; 5 percent clay; weak very fine subangular blocky structure parting to single grain; noncemented, hard, firm, nonsticky, nonplastic; few fine roots; few very fine tubular pores; 10 percent patchy distinct clay bridges on the upper faces of peds and 10 percent discontinuous distinct clay films on rock fragments; 15 percent silica between sand grains and on rock fragments; 5 percent fine irregular black (N 2/0)

manganese masses; 2 percent well rounded cobbles and 70 percent well rounded gravel; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary. 3Btq5—66 to 80 inches (168 to 203 cm); reddish yellow (7.5YR 6/6) extremely gravelly coarse sandy loam, strong brown (7.5YR 5/6) moist; 5 percent clay; weak very fine subangular blocky structure parting to single grain; noncemented, hard, firm, nonsticky, nonplastic; few fine roots; few very fine tubular pores; 10 percent patchy distinct clay bridges on the upper faces of peds and 10 percent discontinuous distinct clay films on rock fragments; 15 percent silica between sand grains and on rock fragments; 5 percent fine irregular black (N 2/0) manganese masses; 15 percent well rounded cobbles and 70 percent well rounded gravel; neutral, pH 7.0 by Hellige-Truog.

Type location: Butte County, California; about 0.5 mile north of downtown Oroville, approximately 3,350 feet east and 1,800 feet south of the northeast corner of projected sec. 8, T. 19 N., R. 4 E.; 39 degrees, 31 minutes, 14 seconds north latitude and 121 degrees, 33 minutes, 6 seconds west longitude; NAD83; USGS Quad: Oroville, California.

Range in Characteristics

The thickness of the solum is more than 80 inches (203 cm), depth to the 3Btq horizon is 22 to 75 inches (56 to 190 cm) or more, and depth to 2Bt horizon is 15 to 43 inches (38 to 109 cm). The mean annual soil temperature is 61 to 64 degrees F (16 to 18 degrees C). The particle-size control section averages 23 to 34 percent clay and 4 to 34 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. A fluctuating water table can occur at a depth of 40 to 80 inches (102 to 203 cm) from December through April. Rock fragments on the surface range from 0 to 10 percent gravel and 0 to 2 percent cobbles.

The A horizon has dry color of 7.5YR 5/3, 5/4, or 6/4 or 5YR 5/4. Moist color is 7.5YR 3/2, 3/3, 3/4, 4/2, or 4/3 or 5YR 3/3 or 3/4. Texture is fine sandy loam, loam, sandy loam, gravelly fine sandy loam, gravelly sandy loam, gravelly loam, or sandy clay loam. The content of clay ranges from 12 to 22 percent. The content of gravel is 1 to 25 percent. The content of organic matter is 0.5 to 1.2 percent. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 5YR 4/6, 5/4, 5/6, or 6/6 or 7.5YR 5/4 or 6/4. Moist color is 5YR 3/4, 4/4, or 4/6; 2.5YR 3/4, 3/6, 4/4, or 4/6; or 7.5YR 3/4 or 4/4. Texture is fine sandy loam, loam, sandy clay loam, sandy clay, gravelly loam, gravelly sandy loam, gravelly sandy clay loam, or gravelly clay loam. The content of clay ranges from 18 to 38 percent. The horizon has 0 to 25 percent gravel, 0 to 15 percent cobbles, and 0 to 5 percent stones. The content of organic matter is 0.1 to 0.5 percent. Reaction ranges from moderately acid to neutral.

The 2Bt horizon has dry color of 7.5YR 5/4, 6/4, or 7/3 or 2.5YR 5/4, 5/6, or 6/6. Moist color is 7.5YR 4/3, 4/4, or 4/6; 5YR 4/6; or 2.5YR 4/4 or 4/6. Texture is gravelly sandy clay, gravelly clay, very gravelly clay, extremely gravelly sandy clay, sandy clay, or clay. The content of clay ranges from 38 to 55 percent. The horizon has 2 to 70 percent gravel and 0 to 10 percent cobbles. The content of organic matter is 0.1 to 0.5 percent. Reaction ranges from moderately acid to moderately alkaline.

The 3Btq horizon has dry color of 7.5YR 5/6, 6/6, or 7/6. Moist color is 7.5YR 4/6 or 5/6. Texture is extremely gravelly sandy clay loam, extremely gravelly coarse sandy loam, gravelly sandy loam, sandy clay loam, or loamy sand. The content of clay ranges from 5 to 38 percent. The horizon has 10 to 70 percent gravel and 0 to 25 percent cobbles. Redoximorphic features range from 0 to 60 percent soft manganese masses and 0 to 2 percent soft oxidized iron masses, noncemented or very weakly cemented. The content of organic matter is 0 to 0.3 percent. Reaction ranges from slightly acid to moderately alkaline.

Timberisland Series

The Timberisland series consists of deep, well drained soils that formed in mixed tephra and colluvium and residuum derived from Lovejoy basalt. These soils are on the benches, tops, and side slopes of basalt ridges on volcanic Sierra Nevada mountains. Slopes range from 0 to 30 percent. The mean annual precipitation is about 80 inches (2,032 mm), and the mean annual air temperature is about 51 degrees F (11 degrees C).

Taxonomic class: Medial-skeletal, ferrihydritic, mesic Humic Haploxerands

Typical Pedon

Timberisland very gravelly medial sandy loam, on a southwest-facing slope of 30 percent, under a cover of mixed conifers, at an elevation of 4,325 feet (1,318 m). When described on 6/20/1995, the soil was moist throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1.5 inches (0 to 3 cm); fresh needles, leaves, cones, and twigs.

Oe—1.5 to 3 inches (3 to 8 cm); moderately decomposed litter of needles, leaves, cones, and twigs.

A1—3 to 6 inches (8 to 15 cm); brown (10YR 5/3) very gravelly medial sandy loam, very dark brown (10YR 2/2) moist; 16 percent clay; weak fine subangular blocky structure parting to single grain; loose, very friable, slightly sticky, slightly plastic; common very fine and fine roots; many very fine irregular pores; 40 percent subangular basalt gravel; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 9.0; abrupt smooth boundary.

A2—6 to 14 inches (15 to 36 cm); brown (10YR 5/3) very gravelly medial sandy loam, very dark brown (10YR 2/2) moist; 16 percent clay; weak fine subangular blocky structure parting to single grain; loose, very friable, slightly sticky, slightly plastic; many fine, common very fine, and few medium roots; many very fine irregular pores; 40 percent subangular basalt gravel and 5 percent subangular basalt cobbles; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 11.2; abrupt smooth boundary.

Bw1—14 to 25 inches (36 to 64 cm); brown (10YR 5/3) very gravelly medial sandy loam, very dark grayish brown (10YR 3/2) moist; 18 percent clay; weak fine subangular blocky structure; loose, very friable, slightly sticky, slightly plastic; many fine, common very fine, and few medium roots; many very fine irregular pores; 5 percent clay films on rock fragments, on faces of peds, and in pores; 40 percent subangular basalt gravel and 10 percent subangular basalt cobbles; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 11.2; clear smooth boundary.

Bw2—25 to 35 inches (64 to 89 cm); yellowish brown (10YR 5/4) extremely cobbly medial sandy loam, dark brown (10YR 3/3) moist; 12 percent clay; weak fine subangular blocky structure; loose, very friable, nonsticky, slightly plastic; common fine and medium roots; many very fine irregular pores; 35 percent subangular basalt gravel and 35 percent subangular basalt cobbles; moderately acid, pH 5.8 by Hellige-Truog; NaF pH 11.1; gradual wavy boundary.

Bw3—35 to 48 inches (89 to 122 cm); yellowish brown (10YR 5/4) extremely cobbly medial sandy loam, dark brown (10YR 3/3) moist; 12 percent clay; weak fine subangular blocky structure; slightly hard, very friable, nonsticky, slightly plastic; common fine roots; many very fine irregular pores; 10 percent subangular basalt gravel and 80 percent subangular basalt cobbles; moderately acid, pH 5.8 by Hellige-Truog; NaF pH 10.3; abrupt smooth boundary.

R—48 inches (122 cm); indurated basalt; very few roots in fractures more than 12 inches (31 cm) apart.

Type location: Butte County, California; about 2.2 miles northeast of Camp Eighteen, approximately 600 feet west and 1,450 feet north of the southeast corner of sec. 25, T. 21 N., R. 7 E.; 39 degrees, 38 minutes, 48 seconds north latitude and 121 degrees, 8 minutes, 16 seconds west longitude; NAD27; USGS Quad: Cascade, California.

Range in Characteristics

The depth to lithic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 47 to 54 degrees F (8 to 12 degrees C). The soil moisture control section is dry in all parts from about July to October (about 90 days). The particle-size control section averages 10 to 18 percent clay and 40 to 60 percent rock fragments, mostly gravel and cobbles. Mineralogy is ferrihydritic. Rock fragments on the surface range from 5 to 40 percent gravel, 0 to 25 percent cobbles, 0 to 15 percent stones, and 0 to 5 percent boulders.

The A1 horizon has dry color of 10YR 3/2, 4/2, 4/3, or 5/3. Moist color is 10YR 2/1, 2/2, 3/1, or 3/2; 7.5YR 3/2; or N 2/0. Texture is very gravelly medial sandy loam, gravelly medial sandy loam, medial sandy loam, or gravelly medial coarse sandy loam. The content of clay ranges from 5 to 18 percent. The horizon has 5 to 40 percent gravel, 0 to 10 percent cobbles, and 0 to 10 percent stones. The content of organic matter is 15 to 52 percent. By ammonium acetate, base saturation ranges from 20 to 40 percent. Acid oxalate extractable Al plus $\frac{1}{2}$ Fe ranges from 2.0 to 2.5. P retention ranges from 80 to 85. The content of glass ranges from 2 to 5 percent. NaF pH is 9.0 to 10.0. Reaction ranges from strongly acid to slightly acid.

The A2 horizon has dry color of 10YR 3/2, 4/2, 4/3, or 5/3. Moist color is 10YR 2/1, 2/2, 3/1, or 3/2; 7.5YR 3/2; or N 2/0. Texture is medial sandy loam, gravelly medial sandy loam, very gravelly medial sandy loam, or gravelly medial coarse sandy loam. The content of clay ranges from 5 to 18 percent. The horizon has 5 to 40 percent gravel, 0 to 10 percent cobbles, and 0 to 10 percent stones. The content of organic matter is 10 to 20 percent. By ammonium acetate, base saturation ranges from 5 to 10 percent. Acid oxalate extractable Al plus $\frac{1}{2}$ Fe ranges from 2.0 to 3.5. P retention ranges from 85 to 95. The content of glass ranges from 2 to 5 percent. NaF pH is 10.0 to 11.5. Reaction ranges from strongly acid to slightly acid.

The Bw1 horizon has dry color of 10YR 4/2, 5/2, or 5/3 or 7.5YR 4/3. Moist color is 10YR 2/1, 3/2, or 3/3 or 7.5YR 4/3. Texture is gravelly medial sandy loam, very gravelly medial sandy loam, or extremely gravelly medial sandy loam. The content of clay ranges from 8 to 18 percent. The horizon has 30 to 40 percent gravel, 0 to 20 percent cobbles, 0 to 10 percent stones, and 0 to 5 percent boulders. The content of organic matter is 10 to 18 percent. By ammonium acetate, base saturation ranges from 2 to 5 percent. Acid oxalate extractable Al plus $\frac{1}{2}$ Fe ranges from 2.0 to 3.5. P retention ranges from 85 to 95. The content of glass ranges from 1 to 5 percent. NaF pH is 11 to 11.5. Reaction ranges from strongly acid to slightly acid.

The Bw2 and Bw3 horizons have dry color of 10YR 4/2, 5/2, 5/3, or 5/4; 7.5YR 4/2, 4/3, 4/4, or 5/3; or 2.5Y 5/4. Moist color is 10YR 3/2 or 3/3; 7.5YR 3/2, 3/3, 3/4, or 4/3; or 2.5Y 3/2. Texture is extremely cobbly medial fine sandy loam, extremely cobbly medial sandy loam, extremely gravelly medial sandy loam, or very cobbly medial sandy loam. The content of clay ranges from 10 to 22 percent. The horizons have 10 to 60 percent gravel, 25 to 80 percent cobbles, 0 to 5 percent stones, and 0 to 5 percent boulders. The content of organic matter is 2 to 10 percent. By ammonium acetate, base saturation ranges from 2 to 5 percent. Acid oxalate extractable Al plus $\frac{1}{2}$ Fe ranges from 2.0 to 3.5. P retention ranges from 85 to 96. The content of glass ranges from 1 to 5 percent. NaF pH is 10.0 to 11.5. Reaction ranges from very strongly acid to slightly acid.

Toadtown Series

The Toadtown series consists of very deep, well drained soils that formed in weathered tephra over residuum and colluvium derived from metadiorite, metavolcanic rocks, gabbro, or diorite. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada mountains. Slopes range from 2 to 70 percent. The mean annual precipitation is about 72 inches (1,829 mm), and the mean annual air temperature is about 53 degrees F (12 degrees C).

Taxonomic class: Fine, parasquic, mesic Andic Haplohumults

Typical Pedon

Toadtown loam, on an east-southeast-facing slope of 7 percent, under a cover of mixed conifers, at an elevation of 3,590 feet (1,094 m). When described on 11/28/1995, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 2 inches (0 to 5 cm); pine needles.

Oe—2 to 3 inches (5 to 8 cm); partially decomposed forest litter, mostly pine needles.

A—3 to 5 inches (8 to 13 cm); reddish brown (5YR 5/4) loam, reddish brown (5YR 4/3) moist; 26 percent clay; moderate medium subangular blocky structure parting to strong fine granular; slightly hard, friable, slightly sticky, slightly plastic; many very fine and common fine roots; many very fine and fine tubular and many medium and common coarse irregular pores; noneffervescent; 12 percent gravel; moderately acid, pH 5.7 by pH meter 1:1 water; NaF pH 10.5; clear smooth boundary.

Bt1—5 to 8 inches (13 to 20 cm); yellowish red (5YR 5/6) loam, reddish brown (5YR 4/4) moist; 27 percent clay; moderate medium subangular blocky structure parting to strong fine granular; slightly hard, friable, slightly sticky, slightly plastic; common very fine and fine and many medium roots; many very fine to medium irregular and tubular and common coarse irregular pores; many distinct discontinuous clay films on faces of peds and in pores; noneffervescent; 14 percent gravel; strongly acid, pH 5.5 by pH meter 1:1 water; NaF pH 10.3; clear smooth boundary.

Bt2—8 to 13 inches (20 to 33 cm); yellowish red (5YR 5/6) clay loam, red (2.5YR 4/6) moist; 29 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine and coarse and many fine and medium roots; many very fine to coarse tubular pores; common distinct discontinuous clay films on faces of peds and in pores; noneffervescent; 10 percent gravel; strongly acid, pH 5.4 by pH meter 1:1 water; NaF pH 10.1; clear smooth boundary.

Bt3—13 to 18 inches (33 to 46 cm); reddish yellow (5YR 6/6) clay, red (2.5YR 4/6) moist; 40 percent clay; strong medium subangular blocky structure; moderately hard, firm, slightly sticky, moderately plastic; common very fine and many fine to coarse roots; many very fine to coarse tubular pores; many distinct discontinuous clay films on faces of peds and in pores; noneffervescent; 5 percent gravel; strongly acid, pH 5.3 by pH meter 1:1 water; NaF pH 9.6; clear smooth boundary.

Bt4—18 to 27 inches (46 to 69 cm); reddish yellow (5YR 6/6) clay, red (2.5YR 5/6) moist; 43 percent clay; strong fine and medium subangular blocky structure; hard, very firm, slightly sticky, moderately plastic; common very fine and coarse and many fine and medium roots; many very fine and fine tubular pores; many distinct continuous clay films on faces of peds and in pores; noneffervescent; 2 percent gravel; strongly acid, pH 5.3 by pH meter 1:1 water; NaF pH 9.6; gradual smooth boundary.

Bt5—27 to 51 inches (69 to 130 cm); reddish yellow (5YR 7/6) clay loam, reddish yellow (5YR 6/6) moist; 31 percent clay; strong medium angular blocky structure;

moderately hard, firm, slightly sticky, moderately plastic; common very fine and fine roots; common very fine and fine tubular pores; many distinct continuous and common prominent continuous clay films on faces of peds and in pores; noneffervescent; 1 percent gravel; strongly acid, pH 5.3 by pH meter 1:1 water; NaF pH 9.4; gradual irregular boundary.

Bt6—51 to 65 inches (130 to 165 cm); reddish yellow (5YR 7/6) loam, yellowish red (5YR 5/8) moist; 27 percent clay; moderate medium angular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine and fine roots; common very fine and fine tubular pores; many distinct discontinuous and few prominent discontinuous clay films on faces of peds and in pores; noneffervescent; 2 percent gravel; strongly acid, pH 5.3 by pH meter 1:1 water; clear irregular boundary.

Bt7—65 to 75 inches (165 to 190 cm); reddish yellow (5YR 7/6) loam, yellowish red (5YR 5/6) moist; 18 percent clay; weak medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine and fine roots; many very fine and fine tubular pores; few prominent discontinuous and many distinct discontinuous clay films on faces of peds and in pores; noneffervescent; 1 percent gravel; strongly acid, pH 5.2 by pH meter 1:1 water; clear wavy boundary.

Crt—75 to 79 inches (190 to 201 cm); reddish yellow (7.5YR 8/6) loam, yellowish red (5YR 5/6) moist; 17 percent clay; massive; slightly sticky, slightly plastic; few very fine and fine roots; common very fine and fine tubular pores; common prominent discontinuous clay films in pores; noneffervescent; 1 percent gravel; strongly acid, pH 5.2 by pH meter 1:1 water.

Type location: Butte County, California; about 1 mile southwest of Powellton, approximately 600 feet north and 1,500 feet west of the southeast corner of sec. 24, T. 24 N., R. 3 E.; 39 degrees, 55 minutes, 0.7 second north latitude and 121 degrees, 34 minutes, 57.98 seconds west longitude; NAD27; USGS Quad: Stirling City, California.

Range in Characteristics

The depth to paralithic bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 54 to 57 degrees F (12 to 14 degrees C). The soil moisture control section is dry in all parts from about July to October (about 90 days). The particle-size control section averages 35 to 45 percent clay and 2 to 5 percent rock fragments, mostly gravel. Mineralogy is parasesquic. Acid oxalate extractable Al plus $\frac{1}{2}$ Fe ranges from 1.1 to 1.57 to a depth of 13 inches (33 cm). Rock fragments on the surface range from 0 to 35 percent gravel and 0 to 5 percent cobbles.

The A horizon has dry color of 5YR 4/3, 4/4, 5/4, 5/6, or 6/4; 2.5YR 4/6 or 5/6; or 7.5YR 5/4 or 6/6. Moist color is 5YR 3/3, 4/3, or 4/4; 2.5YR 3/3, 3/4, 3/6, or 4/4; or 7.5YR 3/3. Texture is loam, gravelly loam, sandy loam, gravelly sandy loam, or very gravelly loam. The content of clay ranges from 15 to 27 percent. The content of gravel is 0 to 45 percent. The content of organic matter is 10 to 15 percent. By sum of cations, base saturation ranges from 15 to 25 percent. By ammonium acetate, CEC ranges from 20 to 30. NaF pH is 10 to 11. Reaction is moderately acid or slightly acid.

The upper part of the Bt horizon has dry color of 2.5YR 4/6, 5/6, or 6/6 or 5YR 4/4, 5/4, 5/6, 6/4, or 6/6. Moist color is 2.5YR 3/4, 3/6, 4/4, or 4/6 or 5YR 4/4. Texture is loam, gravelly loam, clay loam, silty clay loam, sandy clay loam, or gravelly clay loam. The content of clay ranges from 23 to 37 percent. The content of gravel is 0 to 20 percent, and the content of cobbles is 0 to 10 percent. The content of organic matter is 3 to 8 percent. By sum of cations, base saturation ranges from 10 to 20 percent. By ammonium acetate, CEC ranges from 12 to 20. NaF pH is 10 to 11. Reaction ranges from strongly acid to slightly acid.

The middle part of the Bt horizon has dry color of 5YR 5/6, 5/8, 6/6, or 7/6 or 2.5YR 4/6, 5/6, 4/8, 5/8, 6/6, or 7/6. Moist color is 2.5YR 3/6, 4/4, 4/6, 4/8, 5/6, or 6/8

or 5YR 5/8. Texture is silty clay, gravelly clay, clay, clay loam, or gravelly clay loam. The content of clay ranges from 35 to 60 percent. The content of gravel is 0 to 30 percent, and the content of cobbles is 0 to 10 percent. The content of organic matter is 0.8 to 3 percent. By sum of cations, base saturation ranges from 10 to 20 percent. By ammonium acetate, CEC ranges from 9 to 12. NaF pH is 9 to 10. Reaction ranges from strongly acid to slightly acid.

The lower part of the Bt horizon has dry color of 2.5YR 4/8, 5/6, or 5/8; 5YR 5/6, 6/6, 6/8, or 7/6; or 7.5YR 5/6, 6/6, 6/8, or 7/6. Moist color is 2.5YR 3/6, 4/6, 4/8, or 5/6; 5YR 4/6, 5/6, 5/8, or 6/6; or 7.5YR 4/6, 5/6, or 5/8. Texture is clay loam, loam, silt loam, silty clay loam, cobbly silty clay loam, cobbly clay loam, gravelly clay loam, or gravelly loam. The content of clay ranges from 18 to 35 percent. The content of gravel is 0 to 30 percent, and the content of cobbles is 0 to 20 percent. The content of organic matter is 0.1 to 0.3 percent. By sum of cations, base saturation ranges from 2 to 10 percent. By ammonium acetate, CEC ranges from 5 to 12. NaF pH is 9 to 10. Reaction ranges from strongly acid to slightly acid.

Trainer Series

The Trainer series consists of very deep, somewhat poorly drained soils that formed in alluvium derived from mixed rock sources. These soils are on stream terraces. Slopes are 0 to 1 percent. The mean annual precipitation is about 20 inches (508 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Fine-loamy, mixed, active, thermic Aquic Haploxerepts

Typical Pedon

Trainer loam, on a slope of less than 1 percent, in a fallow rice paddy, at an elevation of 85 feet (26 m). When described on 4/4/1985, the soil was moist throughout. (Colors are for dry soil unless otherwise noted).

- Ap—0 to 4 inches (0 to 10 cm); yellowish brown (10YR 5/4) loam, dark yellowish brown (10YR 3/4) moist; weak medium granular structure; very hard, friable, slightly sticky, slightly plastic; few very fine and fine roots; few very fine and fine tubular pores and common very fine and fine interstitial pores; slightly acid, pH 6.5; clear smooth boundary.
- A—4 to 9 inches (10 to 23 cm); yellowish brown (10YR 5/4) loam, dark yellowish brown (10YR 3/4) moist; weak medium granular structure; very hard, friable, slightly sticky, slightly plastic; few very fine roots; few very fine and fine tubular and interstitial pores; common fine distinct dark reddish brown (5YR 3/4), few coarse prominent very dark grayish brown (2.5Y 3/2), and few medium prominent grayish brown (10YR 5/2) and brown (10YR 5/3) oxidized iron masses along root channels; few fine black (10YR 2/1) iron-manganese masses and concretions; slightly alkaline, pH 7.5; clear wavy boundary.
- Bt1—9 to 16 inches (23 to 41 cm); brown (7.5YR 5/4) loam, brown (7.5YR 4/4) moist; weak medium subangular blocky structure; very hard, very friable, slightly sticky, slightly plastic; few very fine roots; few very fine and coarse tubular pores; few thin clay films in pores; few fine and medium black (10YR 2/1) iron-manganese masses and concretions; slightly alkaline, pH 7.8; clear smooth boundary.
- Bt2—16 to 23 inches (41 to 58 cm); brown (7.5YR 5/4) loam, brown (7.5YR 4/4) moist; weak medium subangular blocky structure; very hard, very friable, slightly sticky, slightly plastic; few very fine tubular pores; few thin clay films in pores and bridging sand grains; few fine and medium black (10YR 2/1) iron-manganese masses; moderately alkaline, pH 8.0; gradual smooth boundary.

- Bt3**—23 to 36 inches (58 to 91 cm); very pale brown (10YR 7/4) sandy loam, yellowish brown (10YR 5/4) moist; weak medium subangular blocky structure; very hard, very friable, slightly sticky, slightly plastic; few very fine tubular pores; common thin clay films in pores and bridging sand grains; common fine distinct brown (7.5YR 4/4) oxidized iron masses; few fine and medium black (10YR 2/1) iron-manganese masses and concretions; moderately alkaline, pH 8.0; gradual smooth boundary.
- BCt**—36 to 48 inches (91 to 122 cm); reddish yellow (7.5YR 6/6) sandy loam, brown (7.5YR 4/4) moist; massive; slightly hard and very friable, nonsticky, nonplastic; few very fine tubular pores; few thin clay films bridging sand grains; common medium grayish brown (10YR 5/2) bleached sand coatings on faces of peds; few fine and medium black (10YR 2/1) iron-manganese masses and concretions; moderately alkaline, pH 8.0; clear smooth boundary.
- C1**—48 to 59 inches (122 to 150 cm); reddish yellow (7.5YR 6/6) sandy loam, strong brown (7.5YR 5/6) moist; massive; slightly hard, very friable, nonsticky, nonplastic; moderately alkaline, pH 8.0; abrupt smooth boundary.
- C2**—59 to 66 inches (150 to 168 cm); reddish yellow (7.5YR 6/6) coarse sandy loam, strong brown (7.5YR 4/6) moist; massive; slightly hard, very friable, nonsticky, nonplastic; moderately alkaline, pH 8.0.

Type location: Yuba County, California; about 4.5 miles northeast of Marysville on Highway 20 to Loma Rica Road, approximately 600 feet west and 1,150 feet north of the southeast corner of sec. 22, T. 16 N., R. 4 E.; 39 degrees, 13 minutes, 29 seconds north latitude and 121 degrees, 30 minutes, 10 seconds west longitude; NAD27; USGS Quad: Yuba City, California.

Range in Characteristics

The mean annual soil temperature is 64 to 66 degrees F (18 to 19 degrees C). The soil temperature is above 47 degrees F (8 degrees C) the entire year. Unless the soils are irrigated, the soil moisture control section is dry in all parts from May 15 through October 31 and is moist in some or all parts from November 1 through May 15. A fluctuating water table can occur at a depth of 36 and 60 inches (91 to 152 cm) from January through December. Reaction ranges from slightly acid to moderately alkaline. Some pedons have a Bw horizon.

The A horizon has dry color of 10YR 5/4, 5/3, 4/4, or 4/3 or 7.5YR 5/4, 4/4, or 4/3. Moist color is 10YR 3/4, 3/3, or 3/2 or 7.5YR 3/3. Texture is loam or sandy clay loam. The content of clay ranges from 18 to 27 percent.

The Bt or Bw horizon has dry color of 10YR 7/4 or 4/3 or 7.5YR 7/4, 6/4, 5/4, 4/4, 4/3, or 6/6. Moist color is 10YR 5/4 or 3/3 or 7.5YR 5/6, 5/4, 4/4, 3/4, 3/3, or 4/6. Texture is sandy loam, loam, or sandy clay loam. The content of clay ranges from 18 to 27 percent.

The C horizon has dry color of 7.5YR 5/4, 3/4, or 6/6 or 10YR 4/4. Moist color is 7.5YR 3/4, 4/3, 4/4, 4/6, or 5/6. Texture is sandy loam, coarse sandy loam, loam, or fine sandy loam. The content of clay ranges from 10 to 18 percent.

Tuscan Series

The Tuscan series consists of shallow, somewhat poorly drained soils that formed in alluvium derived from volcanic rocks. These soils are on strath terraces on Cascade foothills and on fan terraces. Slopes range from 0 to 3 percent. The mean annual precipitation is about 26 inches (660 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Clayey, mixed, superactive, thermic, shallow Typic Durixeralfs

Typical Pedon

Tuscan gravelly loam, on a south-facing slope of 1 percent, under a cover of filaree, spike rush, and clover, at an elevation of 207 feet (63 m). When described on 3/29/2000, the soil was dry to a depth of 1.5 inches (4 cm), very slightly moist from 1.5 to 11 inches (4 to 28 cm), and dry below 11 inches (28 cm). (Colors are for dry soil unless otherwise noted.)

- A—0 to 2 inches (0 to 4 cm); very pale brown (10YR 7/3) gravelly loam, brown (10YR 4/3) moist; 27 percent clay; moderate thin and medium platy structure parting to moderate fine subangular blocky; very hard, friable, moderately sticky, moderately plastic; many very fine roots; few very fine and fine irregular and tubular pores; 20 percent medium threadlike strong brown (7.5YR 5/6 dry) oxidized iron masses lining pores; 20 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.
- Bt1—2 to 4 inches (4 to 11 cm); brown (7.5YR 5/3) clay loam, brown (7.5YR 4/3) moist; 34 percent clay; moderate thick platy structure parting to moderate coarse and medium subangular blocky; extremely hard, friable, moderately sticky, moderately plastic; common very fine roots; few fine and very fine tubular pores; 80 percent continuous distinct clay films; 10 percent gravel; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.
- Bt2—4 to 7 inches (11 to 19 cm); brown (7.5YR 5/3) gravelly clay, brown (7.5YR 4/3) moist; 40 percent clay; moderate medium and fine subangular blocky structure; very hard, friable, very sticky, very plastic; common very fine roots; few fine and very fine tubular pores; 80 percent continuous distinct clay films; 5 percent cobbles and 10 percent gravel; neutral, pH 7.2 by Hellige-Truog; gradual smooth boundary.
- Bt3—7 to 11 inches (19 to 28 cm); brown (7.5YR 5/3) cobbly clay, brown (7.5YR 4/3) moist; 50 percent clay; moderate fine and medium subangular blocky structure; very hard, friable, very sticky, very plastic; common very fine roots; few fine and very fine tubular pores; 80 percent continuous distinct clay films; 15 percent cobbles and 15 percent gravel; slightly alkaline, pH 7.5 by Hellige-Truog; abrupt smooth boundary.
- 2Bqm—11 inches (28 cm); very strongly cemented duripan; cemented by silica; 20 percent manganese coatings at the top of the horizon; 40 percent cobbles and 40 percent gravel; moderately alkaline, pH 8.0 by Hellige-Truog.

Type location: Butte County, California; about 0.875 mile east-southeast of the Durham-Pentz Road/Highway 99 overpass, approximately 550 feet north and 2,100 feet west of the southeast corner of sec. 25, T. 21 N., R. 2 E.; 39 degrees, 38 minutes, 26 seconds north latitude and 121 degrees, 41 minutes, 53 seconds west longitude; NAD27; USGS Quad: Hamlin Canyon, California.

Range in Characteristics

Depth to the duripan is 10 to 20 inches (925 to 51 cm). The duripan is underlain by volcanic sandstone or volcanic sediments. The mean annual soil temperature is 62 to 65 degrees F (17 to 18 degrees C). The soil moisture control section is dry in all parts from about May to October (about 150 days). The particle-size control section averages 35 to 55 percent clay and 15 to 35 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur between the top of the duripan and 2 inches (5 cm) below the surface of the soil from November through March. Redoximorphic features occur as oxidized iron masses in the A horizon, iron-manganese masses in the A and Bt horizons, iron-manganese concretions in the Bt horizon, and a manganese capping on the 2Bqm horizon. Rock fragments on the surface range from 0 to 25 percent gravel and 0 to 5 percent cobbles.

The A horizon has dry color of 7.5YR 5/4, 6/3, 6/4, or 7/3 or 10YR 5/3, 6/3, or 7/3. Moist color is 10YR 4/2 or 4/3, 7.5YR 4/3, or 5YR 3/3. Texture is loam, gravelly loam, or sandy clay loam. The content of clay ranges from 20 to 27 percent. The content of gravel is 5 to 25 percent. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 7.5YR 4/3, 5/3, 5/4, 5/6, 6/4, 6/6, or 7/4; 5YR 4/3, 4/4, 5/3, or 5/4; or 10YR 5/3. Moist color is 7.5YR 4/3, 4/4, or 5/3; 5YR 3/3, 4/3, or 4/4; or 10YR 4/3. Texture is clay loam, gravelly clay loam, very gravelly clay loam, very cobbly clay loam, clay, gravelly clay, very gravelly clay, extremely gravelly clay, or cobbly clay. The content of clay ranges from 30 to 55 percent. The horizon has 5 to 50 percent gravel and 0 to 25 percent cobbles. Reaction is neutral or slightly alkaline.

Tuscan Taxadjunct

The Tuscan taxadjunct consists of moderately deep, somewhat poorly drained soils that formed in alluvium derived from volcanic rocks. These soils are on mounds on fan terraces. Slopes range from 0 to 2 percent. The mean annual precipitation is about 25 inches (635 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine, mixed, superactive, thermic Typic Durixeralfs

Typical Pedon

Tuscan taxadjunct gravelly clay loam, on a south-facing slope of 1 percent, under a cover of filaree, soft chess, and goldfields, at an elevation of 275 feet (84 m). When described on 4/2/1997, the soil was slightly moist from a depth of 2 to 29 inches (5 to 74 cm). (Colors are for dry soil unless otherwise noted.)

- A—0 to 2 inches (0 to 4 cm); brown (7.5YR 4/2) gravelly clay loam, dark reddish brown (5YR 3/2) moist; 30 percent clay; moderate thick platy structure parting to strong thin and medium platy and then to strong fine subangular blocky; hard, slightly sticky, moderately plastic; many very fine roots; common very fine vesicular and tubular pores; 10 percent fine irregular iron-manganese masses and 15 percent fine and medium threadlike strong brown (7.5YR 5/6) oxidized iron masses between peds; 15 percent volcanic gravel; neutral, pH 6.8 by Hellige-Truog; clear smooth boundary.
- Bt1—2 to 5 inches (4 to 13 cm); dark reddish gray (5YR 4/2) gravelly clay, dark reddish brown (5YR 3/2) moist; 40 percent clay; strong coarse prismatic structure parting to strong coarse angular blocky; very hard, firm, moderately sticky, very plastic; many very fine roots between peds; common very fine vesicular and tubular pores; 80 percent continuous prominent clay films on faces of peds; 5 percent fine irregular iron-manganese masses between peds; 15 percent volcanic gravel; slightly alkaline, pH 7.5 by Hellige-Truog; clear smooth boundary.
- Bt2—5 to 13 inches (13 to 33 cm); dark reddish gray (5YR 4/2) gravelly clay, dark reddish brown (5YR 3/3) moist; 40 percent clay; moderate coarse prismatic structure parting to moderate medium subangular blocky; very hard, firm, moderately sticky, very plastic; common very fine roots; few very fine vesicular and tubular pores; 80 percent continuous prominent clay films on faces of peds; 15 percent volcanic gravel; slightly alkaline, pH 7.8 by Hellige-Truog; gradual wavy boundary.
- Bt3—13 to 23 inches (33 to 58 cm); brown (7.5YR 5/3) gravelly clay loam, reddish brown (5YR 4/3) moist; 38 percent clay; moderate medium subangular blocky structure; very hard, friable, moderately sticky, very plastic; common very fine roots; common very fine vesicular and tubular pores; 90 percent continuous prominent clay films on faces of peds; 2 percent fine spherical iron-manganese

concretions throughout; 5 percent volcanic rock cobbles and 15 percent volcanic gravel; moderately alkaline, pH 8.0 by Hellige-Truog; gradual wavy boundary.

Bt4—23 to 29 inches (58 to 74 cm); light brown (7.5YR 6/4) very gravelly clay loam, brown (7.5YR 4/3) moist; 39 percent clay; moderate fine and medium subangular blocky structure; friable, moderately sticky, very plastic; common very fine roots; common very fine vesicular and tubular pores; 50 percent discontinuous distinct clay films on faces of peds; 5 percent fine spherical iron-manganese concretions throughout; 15 percent volcanic cobbles and 40 percent volcanic gravel; moderately alkaline, pH 8.0 by Hellige-Truog; abrupt wavy boundary.

2Bqm—29 inches (74 cm); indurated duripan; extremely cobbly material; no manganese or silica capping; matted roots on top of the duripan.

Type location: Butte County, California; about 6.4 miles northeast of Nord, approximately 1,000 feet east and 900 feet south of the northwest corner of sec. 16, T. 23 N., R. 1 E.; 39 degrees, 51 minutes, 47 seconds north latitude and 121 degrees, 52 minutes, 38 seconds west longitude; NAD27; USGS Quad: Nord, California.

Range in Characteristics

Depth to the duripan is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The particle-size control section averages 35 to 40 percent clay and 15 to 30 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. A fluctuating water table can occur between the top of the duripan and 12 inches (30 cm) below the surface of the soil from December through April. Rock fragments on the surface range from 0 to 15 percent gravel and 0 to 10 percent cobbles.

The A horizon has dry color of 7.5YR 4/2 or 5/3 or 10YR 5/2. Moist color is 7.5YR 3/2 or 3/3 or 5YR 3/2 or 3/3. Texture is gravelly clay loam, cobbly loam, clay loam, or loam. The content of clay ranges from 18 to 33 percent. The horizon has 5 to 25 percent gravel and 0 to 5 percent cobbles. The content of organic matter is 2 to 5 percent. Redoximorphic features range from 0 to 10 percent iron-manganese masses and 0 to 15 percent oxidized iron masses. Reaction ranges from moderately acid to neutral.

The Bt horizon has dry color of 7.5YR 4/3, 5/3, 5/4, 6/4, or 7/4 or 5YR 4/2. Moist color is 5YR 3/2, 3/3, 4/3, or 4/6 or 7.5YR 3/2, 3/3, 3/4, 4/2, or 4/3. Texture is gravelly clay, gravelly clay loam, very gravelly clay loam, extremely gravelly clay loam, cobbly clay loam, cobbly loam, clay, or loam. The content of clay ranges from 25 to 46 percent. The horizon has 5 to 50 percent gravel, 0 to 40 percent cobbles, and 0 to 5 percent stones. The content of organic matter is 0 to 1.2 percent. Redoximorphic features range from 0 to 5 percent iron-manganese masses, 0 to 10 percent manganese masses, and 0 to 5 percent spherical iron-manganese concretions. Reaction ranges from slightly acid to moderately alkaline.

The Tuscan taxadjunct is a taxadjunct because it has a nongravelly duripan rather than a gravelly one and is moderately deep rather than shallow. These differences do not significantly affect the use, management, or interpretations of the soils.

Tuscoll Series

The Tuscoll series consists of very deep, well drained soils that formed in colluvium derived from volcanic rocks. These soils are on backslopes in canyons in the Cascade Mountains. Slopes range from 30 to 70 percent. The mean annual precipitation is about 65 inches (1,651 mm), and the mean annual air temperature is about 55 degrees F (13 degrees C).

Taxonomic class: Fine-loamy, mixed, semiactive, mesic Andic Palexeralfs

Typical Pedon

Tuscoll gravelly loam, on a northeast-facing slope of 45 percent, under a cover of Douglas-fir, California black oak, redbud, dogwood, and Pacific poison oak, at an elevation of 1,940 feet (591 m). When described on 6/24/1998, the soil was very slightly moist to a depth of 23 inches (58 cm), slightly moist from 23 to 49 inches (58 to 124 cm), and moist below 49 inches (124 cm). (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 3 cm); slightly decomposed plant material; clear smooth boundary.

Oe—1 to 2 inches (3 to 5 cm); moderately decomposed plant material; clear smooth boundary.

A—2 to 6 inches (5 to 15 cm); light reddish brown (5YR 6/4) gravelly loam, reddish brown (5YR 4/3) moist; 25 percent clay; moderate fine and medium granular structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine and fine and common medium roots; many very fine to medium tubular and irregular and few coarse tubular pores; 15 percent gravel; neutral, pH 7.0 by Hellige-Truog; NaF pH 10.0; clear smooth boundary.

Bt1—6 to 14 inches (15 to 36 cm); light reddish brown (5YR 6/4) gravelly loam, reddish brown (5YR 4/4) moist; 26 percent clay; moderate fine subangular blocky structure; moderately hard, friable, slightly sticky, slightly plastic; many fine and medium, few coarse, and common very fine roots; common very fine to medium tubular and irregular and few coarse tubular pores; 40 percent discontinuous faint clay films; 25 percent gravel; neutral, pH 6.7 by Hellige-Truog; NaF pH 10.5; clear smooth boundary.

Bt2—14 to 23 inches (36 to 58 cm); light reddish brown (5YR 6/4) gravelly loam, reddish brown (5YR 4/4) moist; 27 percent clay; weak fine and medium subangular blocky structure; moderately hard, very friable, slightly sticky, slightly plastic; few very fine, fine, and coarse and many medium roots; common very fine to medium irregular and tubular and few coarse tubular pores; 40 percent discontinuous faint clay films; 20 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 10.5; gradual smooth boundary.

Bt3—23 to 33 inches (58 to 84 cm); reddish yellow (5YR 6/6) gravelly clay loam, yellowish red (5YR 4/6) moist; 29 percent clay; weak fine and medium subangular blocky structure; moderately hard, friable, moderately sticky, moderately plastic; few very fine and fine and common medium and coarse roots; common very fine to medium tubular and irregular pores; 50 percent discontinuous faint clay films; 15 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 10.0; gradual smooth boundary.

Bt4—33 to 41 inches (84 to 104 cm); yellowish red (5YR 5/6) gravelly clay loam, yellowish red (5YR 4/6) moist; 31 percent clay; moderate fine and medium subangular blocky structure; moderately hard, friable, moderately sticky, moderately plastic; few very fine and fine and common medium roots; common very fine and fine irregular and tubular and few medium tubular pores; 50 percent discontinuous faint clay films; 15 percent gravel; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 10.0; gradual smooth boundary.

Bt5—41 to 49 inches (104 to 124 cm); yellowish red (5YR 5/6) gravelly clay loam, yellowish red (5YR 4/6) moist; 33 percent clay; moderate fine and medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; few very fine, fine, and coarse and common medium roots; common very fine and fine tubular and irregular and few medium tubular pores; 70 percent continuous distinct clay films; 15 percent gravel; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 9.9; clear smooth boundary.

Bt6—49 to 70 inches (124 to 179 cm); yellowish red (5YR 5/6) gravelly clay loam, yellowish red (5YR 4/6) moist; 38 percent clay; moderate fine and medium

subangular blocky structure; extremely hard, friable, moderately sticky, moderately plastic; few very fine to coarse roots; common very fine and fine tubular and irregular and few medium tubular pores; 80 percent continuous distinct clay films; 10 percent cobbles and 15 percent gravel; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 9.7.

Type location: Butte County, California; about 0.75 mile west of Forest Ranch Cemetery, approximately 700 feet south and 600 feet west of the northeast corner of sec. 31, T. 24 N., R. 3 E.; 39 degrees, 54 minutes, 2 seconds north latitude and 121 degrees, 40 minutes, 31 seconds west longitude; NAD83; USGS Quad: Cohasset, California.

Range in Characteristics

The depth to bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 52 to 59 degrees F (11 to 15 degrees C). The particle-size control section averages 22 to 35 percent clay and 5 to 35 percent rock fragments, mostly gravel. Mineralogy is mixed. NaF pH is 9.5 to 11.0 to a depth of 10 to 20 inches (25 to 51 cm). Rock fragments on the surface range from 5 to 25 percent gravel, 0 to 20 percent cobbles, 0 to 20 percent stones, and 0 to 5 percent boulders.

The A horizon has dry color of 7.5YR 5/3, 5/4, 6/3, 6/4, or 7/4 or 5YR 6/4. Moist color is 5YR 3/3 or 4/3 or 7.5YR 4/3. Texture is gravelly sandy loam, gravelly loam, or cobbly loam. The content of clay ranges from 17 to 25 percent. The horizon has 5 to 30 percent gravel and 0 to 15 percent cobbles. NaF pH is 9.5 to 11.0. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 7.5YR 5/3, 5/4, 5/6, 6/4, 6/6, or 7/4 or 5YR 5/4, 5/6, 6/4, or 6/6. Moist color is 7.5YR 3/3, 4/3, 4/4, 5/4, 4/6, or 6/6 or 5YR 3/3, 4/3, 4/4, or 4/6. Texture is loam, gravelly loam, cobbly loam, very cobbly loam, clay loam, gravelly clay loam, very gravelly clay loam, cobbly clay loam, very cobbly clay loam, gravelly sandy clay loam, or very gravelly sandy clay loam. The content of clay ranges from 20 to 39 percent. The horizon has 2 to 40 percent gravel, 0 to 40 percent cobbles, and 0 to 15 percent stones. NaF pH is 9.8 to 11.0 in the upper part of the horizon. Reaction ranges from very strongly acid to neutral.

Typic Haploxeralfs

Typic Haploxeralfs consist of moderately deep or deep, well drained soils that formed in colluvium, residuum, and alluvium derived from volcanic rocks. These soils are on side slopes in canyons on Cascade foothills. Slopes range from 2 to 50 percent. The mean annual precipitation is about 28 inches (711 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Thermic Typic Haploxeralfs

Typical Pedon

Typic Haploxeralfs gravelly loam, on a south-southwest-facing slope of 45 percent, under a cover of yellow starthistle and wild oat with scattered interior live oak, Pacific poison oak, and foothill pine, at an elevation of 530 feet (162 m). When described on 11/9/1998, the soil was moist to a depth of 8 inches (20 cm) and dry below that depth. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); grayish brown (10YR 5/2) gravelly loam, very dark grayish brown (10YR 3/2) moist; 27 percent clay; moderate very fine and fine granular structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine roots; many very fine to medium irregular and tubular pores; 25 percent gravel; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.

- Bt1—2 to 8 inches (5 to 20 cm); grayish brown (10YR 5/2) gravelly clay loam, dark grayish brown (10YR 4/2) moist; 29 percent clay; strong fine and medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; many very fine roots; common very fine to medium tubular pores; 40 percent discontinuous faint clay films; 20 percent gravel; neutral, pH 7.3 by Hellige-Truog; clear smooth boundary.
- Bt2—8 to 16 inches (20 to 41 cm); grayish brown (10YR 5/2) very gravelly clay loam, dark grayish brown (10YR 4/2) moist; 35 percent clay; strong fine and medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; common very fine and fine roots; common very fine to medium tubular pores; 80 percent continuous distinct clay films; 15 percent cobbles and 25 percent gravel; neutral, pH 7.3 by Hellige-Truog; gradual smooth boundary.
- Bt3—16 to 27 inches (41 to 69 cm); grayish brown (10YR 5/2) very gravelly clay loam, dark grayish brown (10YR 4/2) moist; 33 percent clay; strong fine and medium subangular blocky structure; very hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine to medium tubular pores; 80 percent continuous distinct clay films; 15 percent cobbles and 30 percent gravel; neutral, pH 7.3 by Hellige-Truog; gradual smooth boundary.
- Bt4—27 to 40 inches (69 to 102 cm); grayish brown (10YR 5/2) very gravelly clay loam, dark grayish brown (10YR 4/2) moist; 32 percent clay; strong fine and medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine to medium tubular pores; 80 percent continuous distinct clay films; 15 percent cobbles and 40 percent gravel; neutral, pH 7.3 by Hellige-Truog; abrupt irregular boundary.
- 2Cr—40 inches (102 cm); white (10YR 8/1), weakly cemented volcanic sandstone, brown (10YR 4/3) moist; slightly alkaline, pH 7.5 by Hellige-Truog.

Type location: Butte County, California; about 0.25 mile northeast of Horseshoe Lake, approximately 7,100 feet north and 2,100 feet west of the southeast corner of sec. 17, T. 22 N., R. 2 E.; in an unsectionized area in the Arroyo Chico Land Grant; 39 degrees, 46 minutes, 29 seconds north latitude and 121 degrees, 46 minutes, 34 seconds west longitude; NAD83; USGS Quad: Richardson Springs, California.

Range in Characteristics

The depth to paralithic or lithic bedrock is 20 to 60 inches (51 to 102 cm). The mean annual soil temperature is 59 to 67 degrees F (15 to 19 degrees C). The soil moisture control section is dry in all parts from about June to October (about 150 days). The particle-size control section averages 27 to 45 percent clay and 15 to 65 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. Rock fragments on the surface range from 0 to 25 percent gravel, 0 to 20 percent cobbles, 0 to 20 percent stones, and 0 to 20 percent boulders.

The A horizon has dry color of 7.5YR 5/2, 5/3, 5/4, 6/4, or 7/3 or 10YR 5/2, 6/2, or 6/3. Moist color is 7.5YR 3/2, 4/2, or 4/3; 10YR 3/2 or 4/2; or 5YR 3/2 or 4/3. Texture is loam, gravelly loam, very gravelly loam, clay loam, or sandy clay loam. The content of clay ranges from 20 to 30 percent. The horizon has 5 to 25 percent gravel and 0 to 15 percent cobbles. Reaction ranges from slightly acid to slightly alkaline.

The Bt horizon has dry color of 7.5YR 5/2, 5/3, 5/4, 6/3, 6/4, or 7/3; 10YR 5/2, 6/2, 6/3, or 7/3; or 5YR 5/4. Moist color is 7.5YR 3/3, 4/2, 4/3, 4/4, or 5/3; 10YR 4/2 or 5/3; or 5YR 3/3 or 4/3. Texture is clay loam, gravelly clay loam, very gravelly clay loam, extremely gravelly clay loam, cobbly clay loam, very cobbly clay loam, clay, very gravelly clay, very cobbly clay, extremely gravelly clay, sandy clay loam, gravelly sandy clay loam, very stony sandy clay loam, sandy clay, gravelly sandy clay, cobbly sandy clay, or very gravelly sandy clay. The content of clay ranges from 27 to 50 percent. The horizon has 5 to 45 percent gravel, 0 to 30 percent cobbles, and 0 to 25 percent stones. Reaction ranges from neutral to moderately alkaline.

Typic Haploxeralfs, Magnesic

Typic Haploxeralfs, magnesic, consist of moderately deep to very deep, well drained soils that formed in residuum and colluvium derived from serpentinitic ultramafic rocks. These soils are on ridgetops and side slopes on ultramafic Sierra Nevada mountains. Slopes range from 15 to 80 percent. The mean annual precipitation is about 60 inches (1,524 mm), and the mean annual air temperature is about 55 degrees F (13 degrees C).

Taxonomic class: Magnesic, mesic Typic Haploxeralfs

Typical Pedon

Typic Haploxeralfs, magnesic, very gravelly loam, on a south-southeast-facing slope of 42 percent, under a cover of whiteleaf manzanita, whitethorn ceanothus, foothill pine, California laurel, California buckthorn, toyon, and scrub oak, at an elevation of 2,578 feet (786 m). When described on 9/25/1997, the soil was dry to a depth of 32 inches (81 cm) and very slightly moist below that depth. (Colors are for dry soil unless otherwise noted.)

- A—0 to 3 inches (0 to 8 cm); brown (7.5YR 5/4) very gravelly loam, dark brown (7.5YR 3/4) moist; 24 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; common very fine and fine roots; many very fine and fine and common medium tubular pores; 10 percent cobbles and 30 percent gravel; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.
- Bt1—3 to 7 inches (8 to 18 cm); reddish brown (5YR 5/4) gravelly clay loam, reddish brown (5YR 4/4) moist; 28 percent clay; strong fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine and fine roots; common very fine and fine and few medium irregular and tubular pores; 30 percent discontinuous faint clay films on faces of pedes and 70 percent clay bridges; 5 percent cobbles and 25 percent gravel; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.
- Bt2—7 to 12 inches (18 to 30 cm); reddish brown (5YR 5/4) very gravelly clay loam, reddish brown (5YR 4/4) moist; 35 percent clay; strong fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine and fine roots; common very fine and fine and few medium irregular and tubular pores; 70 percent discontinuous faint clay films on faces of pedes; 15 percent cobbles and 35 percent gravel; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.
- Bt3—12 to 18 inches (30 to 46 cm); reddish brown (5YR 4/4) gravelly clay, dark reddish brown (2.5YR 3/4) moist; 42 percent clay; strong fine and medium subangular blocky structure; hard, very firm, moderately sticky, very plastic; common very fine and fine roots; common very fine and fine and few medium irregular and tubular pores; 80 percent continuous distinct clay films on faces of pedes; 5 percent cobbles and 25 percent gravel; neutral, pH 7.2 by Hellige-Truog; clear smooth boundary.
- Bt4—18 to 24 inches (46 to 61 cm); yellowish red (5YR 4/6) very gravelly clay, yellowish red (5YR 4/6) moist; 45 percent clay; strong fine and medium subangular blocky structure; extremely hard, very firm, moderately sticky, very plastic; common very fine and fine and few medium roots; few very fine and fine irregular and tubular pores; 90 percent continuous distinct clay films on faces of pedes; 15 percent cobbles and 20 percent gravel; slightly alkaline, pH 7.5 by Hellige-Truog; clear smooth boundary.
- Btss1—24 to 32 inches (61 to 81 cm); strong brown (7.5YR 5/6) very gravelly clay, reddish brown (5YR 4/4) moist; 50 percent clay; moderate coarse prismatic

- structure parting to strong coarse angular blocky; extremely hard, very firm, very sticky, very plastic; common very fine and fine and few medium roots; few very fine and fine irregular and tubular pores; 50 percent slickensides and 90 percent continuous prominent clay films on faces of peds; 15 percent cobbles and 40 percent gravel; slightly alkaline, pH 7.5 by Hellige-Truog; clear smooth boundary.
- Btss₂—32 to 42 inches (81 to 107 cm); brown (7.5YR 4/3) very gravelly clay, strong brown (7.5YR 5/6) moist; 42 percent clay; strong fine and medium subangular blocky structure; extremely hard, very firm, moderately sticky, very plastic; few very fine to medium roots; few very fine and fine irregular and tubular pores; 20 percent slickensides and 90 percent continuous prominent clay films on faces of peds; 20 percent cobbles and 40 percent gravel; slightly alkaline, pH 7.5 by Hellige-Truog; abrupt irregular boundary.
- B₁t₅—42 to 54 inches (107 to 137 cm); brown (7.5YR 4/3) extremely cobbly clay loam, strong brown (7.5YR 5/6) moist; 38 percent clay; strong fine and medium subangular blocky structure; extremely hard, very firm, moderately sticky, very plastic; few very fine and fine roots; few very fine and fine irregular and tubular pores; 80 percent continuous prominent clay films on faces of peds and in pores; 40 percent gravel and 40 percent cobbles; slightly alkaline, pH 7.5 by Hellige-Truog; abrupt irregular boundary.
- R—54 inches (137 cm); indurated serpentinite bedrock.

Type location: Butte County, California; about 1.5 miles northeast of Magalia, approximately 2,400 feet north and 1,500 feet east of the southwest corner of sec. 29, T. 23 N., R. 4 E.; 39 degrees, 49 minutes, 13 seconds north latitude and 121 degrees, 33 minutes, 21 seconds west longitude; NAD83; USGS Quad: Paradise East, California.

Range in Characteristics

The depth to lithic bedrock is 20 to 80 inches (51 to 203 cm). The mean annual soil temperature is 52 to 59 degrees F (11 to 15 degrees C). The soil moisture control section is dry in all parts from about July to October (about 120 days). The particle-size control section averages 25 to 50 percent clay and 35 to 50 percent rock fragments, mostly gravel and cobbles. Mineralogy is magnesian. Rock fragments on the surface range from 10 to 60 percent gravel, 5 to 35 percent cobbles, 0 to 20 percent stones, and 0 to 15 percent boulders.

The A horizon has dry color of 7.5YR 5/4 or 6/4 or 5YR 5/4. Moist color is 7.5YR 3/4 or 4/3, 5YR 4/3, or 2.5YR 3/4. Texture is gravelly loam, very gravelly loam, or gravelly clay loam. The content of clay ranges from 22 to 32 percent. The horizon has 20 to 40 percent gravel, 0 to 20 percent cobbles, and 0 to 10 percent stones. Reaction is neutral.

The Bt horizon has dry color of 5YR 4/4, 4/6, 5/4, or 5/6 or 7.5YR 6/4, 7/4, or 7/6. Moist color is 5YR 4/4 or 4/6, 2.5YR 3/4 or 4/6, or 7.5YR 4/6. Texture is clay loam, clay, or the gravelly, very gravelly, extremely gravelly, or cobbly analogs of those textures. The content of clay ranges from 27 to 45 percent. The horizon has 0 to 40 percent gravel, 0 to 45 percent cobbles, and 0 to 15 percent stones. Reaction is neutral or slightly alkaline.

The Btss horizon has dry color of 7.5YR 4/3, 4/4, 4/6, or 5/6; 5YR 6/4; or 2.5YR 5/6 or 6/6. Moist color is 5YR 4/4, 5/4, or 5/6; 7.5YR 5/6; or 2.5YR 4/6. Texture is extremely gravelly clay loam, gravelly clay, very gravelly clay, or very cobbly clay. The content of clay ranges from 35 to 50 percent. The horizon has 25 to 65 percent gravel, 0 to 45 percent cobbles, and 0 to 15 percent stones. Reaction is neutral or slightly alkaline.

Typic Petraquepts

Typic Petraquepts consist of shallow, poorly drained soils that formed in alluvium derived from basalt. These soils are in swales on strath terraces on Southern Cascade foothills. Slopes are 0 to 1 percent. The mean annual precipitation is about 25 inches (635 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Clayey, smectitic, thermic, shallow Typic Petraquepts

Typical Pedon

Typic Petraquepts silty clay, on a slope of 1 percent, under a cover of annual grasses and forbs, at an elevation of 184 feet (56 m). When described on 5/4/2000, the soil was slightly moist at a depth of 3 to 11 inches (8 to 28 cm). (Colors are for dry soil unless otherwise noted.)

A—0 to 3 inches (0 to 8 cm); dark gray (10YR 4/1) silty clay, very dark gray (10YR 3/1) moist; 50 percent clay; moderate thin platy structure parting to moderate very fine subangular blocky; very hard, extremely firm, very sticky, very plastic; many very fine roots; few very fine tubular pores; 20 percent fine irregular strong brown (7.5YR 5/6 dry) oxidized iron masses on surfaces along root channels; 10 percent subrounded basalt gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

Bss—3 to 11 inches (8 to 28 cm); gray (10YR 5/1) gravelly silty clay, dark gray (10YR 4/1) moist; 55 percent clay; strong medium angular blocky structure; extremely hard, extremely firm, very sticky, very plastic; common very fine roots; few very fine tubular pores; 10 percent slickensides; 5 percent fine irregular black (N 2/0 dry) manganese masses in the matrix and 15 percent fine irregular strong brown (7.5YR 5/6 dry) oxidized iron masses on surfaces along root channels; 5 percent subrounded basalt cobbles and 25 percent subrounded basalt gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

2Bqm—11 inches (28 cm); indurated duripan; cemented by silica; many very fine roots on top of the horizon; 70 percent fine platy black (N 2/0 dry) manganese masses at the top of the horizon; 5 percent rounded basalt cobbles and 50 percent well rounded basalt gravel; silica- and manganese-cemented capping, $\frac{1}{8}$ to $\frac{1}{4}$ inch thick, that is discontinuous because well rounded to subrounded basalt and chert gravel and cobbles protrude through the top of the duripan.

Type location: Butte County, California; about 5.3 miles northwest of Oroville, approximately 1,450 feet west and 2,500 feet north of the southeast corner of sec. 28, T. 20 N., R. 3 E.; 39 degrees, 33 minutes, 33 seconds north latitude and 121 degrees, 38 minutes, 28 seconds west longitude; NAD83; USGS Quad: Shippee, California.

Range in Characteristics

Depth to the duripan is 10 to 20 inches (25 to 51 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The particle-size control section averages 40 to 60 percent clay and 20 to 35 percent rock fragments, mostly gravel. Mineralogy is smectitic. The content of organic matter is 0 to 1 percent in the A horizon and less than 1 percent in the Bss horizon. By ammonium acetate, base saturation ranges from 90 to 100 percent throughout the profile. Reversible, surface-initiated cracks 0.25 to 1 inch (0.6 to 2.5 cm) wide extend from the surface to the duripan from May through October (150 to 180 days) when the soils are not irrigated. A fluctuating water table can occur between the top of the duripan and the surface of the soil from November through April. The soils are frequently ponded for very long periods; as much as 6 inches of water ponds on the surface from November through April. Redoximorphic features, such as oxidized iron masses, iron-manganese

masses, and manganese masses, occur in all horizons. Rock fragments on the surface range from 5 to 10 percent gravel and 2 to 5 percent cobbles. Some pedons do not have slickensides or a Bss horizon.

The A horizon has dry color of 10YR 4/1, 4/2, or 5/2. Moist color is 10YR 3/1 or 3/2. Texture is silty clay, clay, or clay loam. The content of clay ranges from 38 to 50 percent. The horizon has 5 to 10 percent gravel and 0 to 5 percent cobbles. Reaction ranges from strongly acid to slightly acid.

The Bss horizon has dry color of 10YR 4/2, 5/1, or 5/2. Moist color is 10YR 3/2 or 4/1. Texture is gravelly silty clay. The content of clay ranges from 42 to 55 percent. The horizon has 25 to 35 percent gravel and 0 to 5 percent cobbles. Reaction ranges from strongly acid to slightly acid.

Typic Xerofluvents

Typic Xerofluvents consist of very deep, somewhat excessively drained soils that formed in alluvium derived from hydraulic mine deposits from the Cherokee Gold Mine. These soils are on stream terraces. Slopes range from 0 to 2 percent. The mean annual precipitation is about 28 inches (711 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Mixed, superactive, nonacid, thermic Typic Xerofluvents

Reference Pedon

Typic Xerofluvents gravelly loamy sand, on a southeast-facing slope of 2 percent, under a cover of cottonwood, black walnut, valley oak, California sycamore, Pacific poison oak, and annual grasses, at an elevation of 305 feet (93 m). When described on 4/10/2001, the soil was moist throughout. (Colors are for dry soil unless otherwise noted.)

- A—0 to 3 inches (0 to 8 cm); light yellowish brown (10YR 6/4) gravelly loamy sand, dark brown (10YR 3/3) moist; 8 percent clay; weak medium subangular blocky structure parting to weak fine granular; soft, friable, nonsticky, nonplastic; many fine and medium roots; many fine irregular pores; 20 percent subrounded mixed gravel; slightly acid, pH 6.5 by Hellige-Truog; clear wavy boundary.
- C1—3 to 11 inches (8 to 28 cm); light yellowish brown (10YR 6/4) gravelly coarse sandy loam, brown (10YR 4/3) moist; 10 percent clay; moderate medium and coarse subangular blocky structure; hard, firm, nonsticky, nonplastic; common very fine and fine and many medium roots; common fine irregular pores; 25 percent subrounded mixed gravel; neutral, pH 6.8 by Hellige-Truog; clear smooth boundary.
- C2—11 to 20 inches (28 to 51 cm); yellowish brown (10YR 5/4) gravelly coarse sandy loam, dark yellowish brown (10YR 4/4) moist; 12 percent clay; moderate coarse subangular blocky structure; hard, firm, nonsticky, nonplastic; many medium and coarse and common very fine roots; common fine tubular pores; 30 percent subrounded mixed gravel; neutral, pH 6.8 by Hellige-Truog; abrupt smooth boundary.
- C3—20 to 24 inches (51 to 61 cm); light yellowish brown (10YR 6/4) sand, yellowish brown (10YR 5/4) moist; 2 percent clay; single grain; loose, very friable, nonsticky, nonplastic; common fine and medium roots; common fine irregular pores; 15 percent medium yellowish brown (10YR 5/6) oxidized iron masses; 10 percent subrounded mixed gravel; neutral, pH 6.8 by Hellige-Truog; abrupt smooth boundary.
- C4—24 to 31 inches (61 to 79 cm); light yellowish brown (10YR 6/4) gravelly sand, yellowish brown (10YR 5/4) moist; 4 percent clay; weak fine subangular blocky structure parting to single grain; soft, friable, nonsticky, nonplastic; common fine

- and medium and few very fine roots; common fine irregular pores; 30 percent medium black (10YR 2/1) manganese masses and 35 percent medium dark yellowish brown (10YR 4/6) oxidized iron masses; 20 percent subrounded mixed gravel; neutral, pH 6.8 by Hellige-Truog; abrupt wavy boundary.
- C5—31 to 45 inches (79 to 114 cm); very pale brown (10YR 7/4) silt loam, brown (10YR 5/3) moist; 15 percent clay; moderate medium and coarse subangular blocky structure; slightly hard, firm, slightly sticky, slightly plastic; common medium and coarse and few very fine roots; common very fine tubular pores; 30 percent medium dark gray (10YR 4/1) manganese masses and 50 percent medium dark yellowish brown (10YR 4/6) oxidized iron masses; 5 percent subrounded mixed gravel; neutral, pH 6.8 by Hellige-Truog; abrupt wavy boundary.
- C6—45 to 51 inches (114 to 130 cm); very pale brown (10YR 8/2) gravelly sand, light brownish gray (10YR 6/2) moist; 2 percent clay; single grain; loose, very friable, nonsticky, nonplastic; common medium and coarse roots; few fine irregular pores; 15 percent medium yellowish brown (10YR 5/6) oxidized iron masses; 30 percent subrounded mixed gravel; neutral, pH 6.8 by Hellige-Truog; abrupt wavy boundary.
- C7—51 to 66 inches (130 to 168 cm); light gray (10YR 7/2) silt, 40 percent yellowish brown (10YR 5/6) and 60 percent light brownish gray (10YR 6/2) moist; 10 percent clay; moderate coarse subangular blocky structure; hard, firm, moderately sticky, moderately plastic; few medium and coarse roots; few very fine irregular pores; 30 percent fine dark gray (10YR 4/1) iron depletions; 10 percent subrounded mixed gravel; neutral, pH 6.8 by Hellige-Truog; abrupt wavy boundary.
- C8—66 to 84 inches (168 to 213 cm); very pale brown (10YR 8/2) very gravelly coarse sand, light brownish gray (10YR 6/2) moist; 1 percent clay; single grain; loose, very friable, nonsticky, nonplastic; common fine irregular pores; 30 percent fine yellowish brown (10YR 5/6) oxidized iron masses; 50 percent subrounded mixed rock gravel; neutral, pH 6.8 by Hellige-Truog; clear smooth boundary.
- C9—84 to 95 inches (213 to 241 cm); very pale brown (10YR 7/4) extremely gravelly coarse sand, yellowish brown (10YR 5/4) moist; 4 percent clay; single grain; loose, very friable, nonsticky, nonplastic; common fine irregular pores; 50 percent fine dark yellowish brown (10YR 4/6) oxidized iron masses; 70 percent subrounded mixed gravel; neutral, pH 6.8 by Hellige-Truog.

The reference pedon is an example of the soils in this category. The properties represented in map units 360 and 361 vary. The particle-size classes represented by this description include coarse-loamy and sandy-skeletal.

Type location: Butte County, California; about 4.5 miles west of Cherokee, approximately 500 feet west and 500 feet north of the southeast corner of sec. 34, T. 21 N., R. 3 E.; 39 degrees, 37 minutes, 30 seconds north latitude and 121 degrees, 37 minutes, 23 seconds west longitude; NAD83; USGS Quad: Cherokee, California.

Range in Characteristics

The depth to buried alluvium or sandstone or weathered basalt is 40 to 110 inches or more (102 to 279 cm or more). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The particle-size control section averages 2 to 9 percent clay and 17 to 50 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur at a depth of 20 to 94 inches (51 to 240 cm) from December through April. Rock fragments on the surface range from 0 to 10 percent gravel.

The A horizon has dry color of 10YR 4/3, 5/2, 5/3, 6/2, 6/3, or 6/4. Moist color is 10YR 3/2, 3/3, 4/2, 4/3, or 4/4. Texture is gravelly loamy sand, sandy loam, fine sandy

loam, gravelly loam, loam, or gravelly loamy coarse sand. The content of clay ranges from 5 to 18 percent. The content of gravel is 0 to 30 percent. The content of organic matter is 0 to 0.5 percent. Reaction ranges from extremely acid to slightly alkaline.

The C horizon has dry color of 10YR 5/3, 5/4, 6/2, 6/3, 6/4, 6/6, 7/2, 7/3, 7/4, 7/6, 8/2, 8/3, or 8/4; 7.5YR 6/4, 7/4, or 7/6; or 2.5Y 6/2, 6/3, or 6/4. Moist color is 10YR 3/3, 3/4, 4/2, 4/3, 4/4, 4/6, 5/2, 5/3, 5/4, 5/6, 6/2, 6/3, or 6/4; 7.5YR 4/4, 5/4, or 5/6; or 2.5Y 5/3 or 5/4. Texture is sand, gravelly sand, very gravelly sand, gravelly coarse sand, very gravelly loamy coarse sand, very gravelly coarse sand, extremely gravelly coarse sand, very gravelly coarse sandy loam, sandy loam, very gravelly sandy loam, fine sandy loam, very fine sandy loam, gravelly very fine sandy loam, loam, gravelly loam, silt, silt loam, or silty clay loam. The content of clay ranges from 1 to 32 percent. The content of gravel is 5 to 80 percent. The content of organic matter is 0 to 0.2 percent. Redoximorphic features occur as oxidized iron masses and manganese masses. Reaction ranges from moderately acid to moderately alkaline.

The 2Ab, 2Btb or 2Bw horizon, where it occurs, has dry color of 10YR 4/2, 5/1, 5/2, or 5/3 or 7.5YR 6/2. Moist color is 10YR 2/2, 3/1, 3/2, or 3/3 or 7.5YR 4/2. Texture is sandy loam, loam, sandy clay loam, or clay loam. The content of clay ranges from 10 to 35 percent. The content of gravel is 5 to 15 percent. Redoximorphic features occur as oxidized iron masses. Reaction ranges from neutral to moderately alkaline.

Ultic Haploxeralfs

Ultic Haploxeralfs consist of moderately deep or deep, well drained soils that formed in colluvium and residuum derived from volcanic rocks. These soils are on side slopes in canyons on Cascade foothills. Slopes range from 30 to 100 percent. The mean annual precipitation is about 41 inches (1,041 mm), and the mean annual air temperature is about 58 degrees F (14 degrees C).

Taxonomic class: Mesic Ultic Haploxeralfs

Typical Pedon

Ultic Haploxeralfs gravelly loam, on a northeast-facing slope of 45 percent, under a cover of scrub oak, manzanita, Pacific poison oak, California laurel, and scattered foothill pine, at an elevation of 1,075 feet (328 m). When described on 9/29/1999, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

- A—0 to 4 inches (0 to 10 cm); light brown (7.5YR 6/3) gravelly loam, brown (7.5YR 4/2) moist; 24 percent clay; moderate medium and coarse subangular blocky structure parting to strong fine and medium granular; slightly hard, friable, slightly sticky, slightly plastic; many very fine and fine and common medium roots; many very fine to medium and common coarse irregular and tubular pores; 20 percent gravel; slightly alkaline, pH 7.5 by Hellige-Truog; clear smooth boundary.
- Bt1—4 to 10 inches (10 to 25 cm); light brown (7.5YR 6/4) gravelly loam, brown (7.5YR 4/3) moist; 26 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine and fine and common medium and coarse roots; many very fine to coarse tubular pores; 40 percent continuous faint clay films; 15 percent gravel; slightly acid, pH 6.6 by Hellige-Truog; clear smooth boundary.
- Bt2—10 to 18 inches (25 to 46 cm); light brown (7.5YR 6/4) gravelly clay loam, brown (7.5YR 4/3) moist; 29 percent clay; moderate fine and medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; common very fine to coarse roots; many very fine to medium and common coarse tubular pores; 60 percent continuous faint clay films; 15 percent gravel; neutral, pH 6.8 by Hellige-Truog; clear smooth boundary.

Bt3—18 to 35 inches (46 to 89 cm); light brown (7.5YR 6/4) gravelly clay loam, brown (7.5YR 4/3) moist; 35 percent clay; strong fine and medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine to medium tubular pores; 80 percent continuous distinct clay films; 15 percent gravel; neutral, pH 6.7 by Hellige-Truog; clear smooth boundary.

Bt4—35 to 48 inches (89 to 122 cm); light brown (7.5YR 6/4) gravelly clay, brown (7.5YR 4/3) moist; 45 percent clay; strong fine and medium subangular blocky structure; rigid, friable, very sticky, very plastic; common very fine and fine roots; common very fine and fine and few medium tubular pores; 90 percent continuous distinct clay films; 15 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

Crt—48 inches (122 cm); extremely weakly cemented volcanic conglomerate bedrock.

Type location: Butte County, California; about 1.1 miles southwest of Centerville, approximately 1,400 feet south and 375 feet east of the northwest corner of sec. 8, T. 22 N., R. 3 E.; 39 degrees, 46 minutes, 51 seconds north latitude and 121 degrees, 40 minutes, 25 seconds west longitude; NAD83; USGS Quad: Paradise West, California.

Range in Characteristics

The depth to paralithic or lithic bedrock is 20 to 60 inches (51 to 152 cm). The mean annual soil temperature is 55 to 59 degrees F (13 to 15 degrees C). The soil moisture control section is dry in all parts from about June to October (about 150 days). The particle-size control section averages 27 to 35 percent clay and 10 to 50 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. Rock fragments on the surface range from 0 to 25 percent gravel, 0 to 20 percent cobbles, 0 to 20 percent stones, and 0 to 5 percent boulders. Some pedons have 20 to 35 percent clay in the lower part of the Bt horizon.

The A horizon has dry color of 7.5YR 5/3, 6/2, 6/3, or 6/4. Moist color is 7.5YR 3/2, 3/3, or 4/2. Texture is gravelly loam or very gravelly loam. The content of clay ranges from 20 to 26 percent. The content of gravel is 15 to 40 percent. Reaction ranges from slightly acid to slightly alkaline.

The upper part of the Bt horizon has dry color of 7.5YR 5/3, 5/4, 6/3, or 6/4. Moist color is 7.5YR 4/2, 4/3, or 4/4. Texture is gravelly loam, cobbly loam, clay loam, gravelly clay loam, very gravelly clay loam, cobbly clay loam, or very cobbly clay loam. The content of clay ranges from 23 to 35 percent. The content of gravel is 5 to 50 percent, the content of cobbles is 0 to 20 percent, and the content of stones is 0 to 20 percent. Reaction ranges from slightly acid to slightly alkaline.

The lower part of the Bt horizon has dry color of 7.5YR 5/4, 6/3, or 6/4. Moist color is 7.5YR 4/3 or 4/4. Texture is gravelly clay loam, very gravelly clay loam, or gravelly clay. The content of clay ranges from 35 to 50 percent. The content of gravel is 15 to 50 percent, the content of cobbles is 0 to 20 percent, and the content of stones is 0 to 20 percent. Reaction is slightly acid or neutral.

Ultic Haploxeralfs, Conglomerate

Ultic Haploxeralfs, conglomerate, consist of moderately deep to very deep, well drained soils that formed in colluvium and residuum derived from marine conglomerate. These soils are on side slopes in canyons on Cascade foothills. Slopes range from 3 to 100 percent. The mean annual precipitation is about 57 inches (1,447 mm), and the mean annual air temperature is about 57 degrees F (14 degrees C).

Taxonomic class: Thermic Ultic Haploxeralfs

Typical Pedon

Ultic Haploxeralfs, conglomerate, gravelly clay loam, on a northeast-facing slope of 53 percent, under a cover of canyon live oak, California black oak, foothill pine, Pacific poison oak, toyon, tanoak, hedgehog dogtail, and a few ponderosa pine trees, at an elevation of 1,200 feet (366 m). When described on 9/10/1998, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

- Oi—0 to 2 inches (0 to 5 cm); slightly decomposed plant material; abrupt smooth boundary.
- A—2 to 6 inches (5 to 15 cm); pale brown (10YR 6/3) gravelly clay loam, brown (10YR 4/3) moist; 29 percent clay; strong fine and medium granular structure; slightly hard, friable, moderately sticky, moderately plastic; many very fine and fine and few medium roots; many very fine to coarse tubular and irregular pores; 25 percent gravel; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.
- Bt1—6 to 10 inches (15 to 25 cm); light yellowish brown (10YR 6/4) gravelly clay loam, brown (7.5YR 4/3) moist; 31 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; many very fine to medium roots; many very fine to medium tubular pores; 50 percent discontinuous faint clay films; 15 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.
- Bt2—10 to 17 inches (25 to 43 cm); light brown (7.5YR 6/4) clay loam, brown (7.5YR 4/2) moist; 33 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; many fine and medium and common very fine roots; many very fine to medium tubular pores; 60 percent discontinuous faint clay films; 10 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.
- Bt3—17 to 28 inches (43 to 71 cm); light brown (7.5YR 6/4) cobbly clay loam, brown (7.5YR 4/3) moist; 35 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine to medium tubular pores; 60 percent discontinuous faint clay films; 10 percent gravel and 20 percent cobbles; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.
- Bt4—28 to 40 inches (71 to 102 cm); light brown (7.5YR 6/4) very cobbly clay loam, brown (7.5YR 4/4) moist; 36 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine and fine and common medium tubular pores; 70 percent continuous distinct clay films; 20 percent gravel and 25 percent cobbles; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.
- 2Bt5—40 to 50 inches (102 to 127 cm); strong brown (7.5YR 5/6) very gravelly clay, brown (7.5YR 4/4) moist; 42 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, very sticky, very plastic; common very fine to medium roots; many very fine and fine and common medium tubular pores; 90 percent continuous prominent clay films; 20 percent cobbles and 25 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.
- 2Bt6—50 to 71 inches (127 to 180 cm); strong brown (7.5YR 5/6) very gravelly sandy clay loam, brown (7.5YR 4/4) moist; 32 percent clay; massive; slightly hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine and fine and common medium tubular pores; 50 percent discontinuous distinct clay films; 15 cobbles and 40 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.
- 2Bt7—71 to 84 inches (180 to 213 cm); strong brown (7.5YR 5/6) very gravelly sandy clay loam, brown (7.5YR 4/4) moist; 29 percent clay; massive; slightly hard, friable, moderately sticky, moderately plastic; few very fine to medium roots; many very fine and fine and common medium tubular pores; 50 percent discontinuous

distinct clay films; 20 percent cobbles and 40 percent gravel; slightly acid, pH 6.5 by Hellige-Truog.

Type location: Butte County, California; about 0.25 mile southeast of the Ponderosa Way bridge over Big Chico Creek, approximately 1,300 feet south and 120 feet west of the northeast corner of sec. 1, T. 23 N., R. 2 E.; 39 degrees, 53 minutes, 8 seconds north latitude and 121 degrees, 41 minutes, 43 seconds west longitude; NAD83; USGS Quad: Cohasset, California.

Range in Characteristics

The depth to paralithic bedrock is 20 to more than 80 inches (51 to 203 cm). The mean annual soil temperature is 59 to 62 degrees F (15 to 17 degrees C). The soil moisture control section is dry in all parts from about June to November (about 150 days). The particle-size control section averages 30 to 40 percent clay and 20 to 70 percent rock fragments, mostly gravel. Mineralogy is mixed. Rock fragments on the surface range from 5 to 25 percent gravel, 0 to 10 percent cobbles, 0 to 10 percent stones, and 0 to 10 percent boulders.

The A horizon has dry color of 10YR 5/4 or 6/3; 7.5YR 5/4, 6/2, 6/3, or 7/3; or 5YR 6/4. Moist color is 10YR 4/3 or 4/4; 7.5YR 3/2, 4/2, 4/3, or 5/4; or 5YR 4/3. Texture is gravelly loam, very gravelly loam, gravelly clay loam, or very gravelly sandy clay loam. The content of clay ranges from 23 to 30 percent. The horizon has 15 to 45 percent gravel, 0 to 10 percent cobbles, and 0 to 3 percent stones. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 10YR 5/4, 6/4, or 7/4; 7.5YR 4/4, 6/2, 6/3, 6/4, 7/4, or 7/6; or 5YR 5/4, 5/6, or 6/4. Moist color is 10YR 4/4 or 5/4; 7.5YR 4/2, 4/3, 4/4, 5/4, 5/6, or 6/6; or 5YR 4/3, 4/4, 4/6, or 5/6. Texture is clay loam, gravelly clay loam, very gravelly clay loam, cobbly clay loam, very cobbly clay loam, gravelly sandy clay loam, very gravelly sandy clay loam, or extremely gravelly sandy clay loam. The content of clay ranges from 25 to 40 percent. The horizon has 10 to 45 percent gravel, 0 to 30 percent cobbles, and 0 to 5 percent stones. Reaction is slightly acid or moderately acid.

The 2Bt horizon has dry color of 5YR 4/4, 4/6, 6/4, or 7/6 or 7.5YR 5/6. Moist color is 2.5YR 3/4, 3/6, or 4/6; 5YR 4/4 or 5/8; or 7.5YR 4/4. Texture is very gravelly clay loam, very gravelly sandy clay loam, gravelly clay, very gravelly clay, cobbly clay, very cobbly clay, or extremely cobbly clay. The content of clay ranges from 30 to 50 percent. The horizon has 10 to 45 percent gravel, 10 to 40 percent cobbles, and 0 to 5 percent stones. Reaction ranges from slightly acid to strongly acid.

Ultic Haploxeralfs, Mesic

Ultic Haploxeralfs, mesic, consist of moderately deep or deep, well drained soils that formed in residuum derived from mudflow breccia. These soils are on the top of ridges on Cascade foothills. Slopes range from 2 to 30 percent. The mean annual precipitation is about 50 inches (1,270 mm), and the mean annual air temperature is about 57 degrees F (14 degrees C).

Taxonomic class: Mesic Ultic Haploxeralfs

Typical Pedon

Ultic Haploxeralfs, mesic, gravelly loam, on a south-facing slope of 17 percent, under a cover of manzanita, scrub oak, and Pacific poison oak, at an elevation of 1,915 feet (584 m). When described on 9/27/1999, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

- Oi—0 to 1 inch (0 to 3 cm); slightly decomposed plant material; abrupt smooth boundary.
- A—1 to 4 inches (3 to 10 cm); reddish brown (5YR 5/4) gravelly loam, reddish brown (5YR 4/4) moist; 23 percent clay; strong fine granular structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine and fine and common medium roots; many very fine to medium and common coarse tubular and irregular pores; 25 percent gravel; slightly acid, pH 6.4 by pH meter 1:1 water; clear smooth boundary.
- Bt1—4 to 9 inches (10 to 23 cm); reddish yellow (5YR 6/6) cobbly loam, reddish brown (5YR 4/4) moist; 25 percent clay; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine to medium and common coarse roots; many very fine to medium and few coarse tubular and irregular pores; 80 percent continuous distinct clay films on faces of peds; 10 percent gravel and 20 percent cobbles; slightly acid, pH 6.6 by pH meter 1:1 water; clear smooth boundary.
- Bt2—9 to 23 inches (23 to 58 cm); reddish yellow (5YR 6/6) very stony clay loam, reddish brown (2.5YR 5/4) moist; 31 percent clay; moderate fine subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; many very fine to medium and common coarse roots; many very fine to medium tubular pores; 80 percent continuous distinct clay films on faces of peds; 10 percent gravel, 20 percent cobbles, and 20 percent stones; slightly acid, pH 6.5 by pH meter 1:1 water; gradual smooth boundary.
- Bt3—23 to 32 inches (58 to 81 cm); reddish yellow (5YR 6/6) very cobbly clay loam, red (2.5YR 5/6) moist; 34 percent clay; moderate fine and medium subangular blocky structure; moderately hard, firm, moderately sticky, moderately plastic; common very fine to medium and few coarse roots; many very fine to medium tubular pores; 90 percent continuous distinct clay films on faces of peds; 10 percent stones, 20 percent gravel, and 20 percent cobbles; slightly acid, pH 6.5 by pH meter 1:1 water; abrupt smooth boundary.
- Bt4—32 to 42 inches (81 to 107 cm); light red (2.5YR 6/6) extremely stony clay loam, red (2.5YR 5/6) moist; 37 percent clay; moderate fine and medium subangular blocky structure; moderately hard, firm, moderately sticky, moderately plastic; common very fine to medium roots; common very fine and fine and few medium tubular pores; 90 percent continuous distinct clay films on faces of peds; 20 percent gravel, 20 percent cobbles, and 30 percent stones; moderately acid, pH 6.1 by pH meter 1:1 water; clear smooth boundary.
- Cr—42 inches (107 cm); moderately cemented mudflow breccia bedrock.

Type location: Butte County, California; about 850 feet north-northwest of Doe Mill Point, approximately 1,850 feet north and 300 feet east of the southwest corner of sec. 32, T. 23 N., R. 3 E.; 39 degrees, 48 minutes, 15 seconds north latitude and 121 degrees, 40 minutes, 29 seconds west longitude; NAD83; USGS Quad: Paradise West, California.

Range in Characteristics

The depth to lithic or paralithic bedrock is 20 to 60 inches (51 to 152 cm). The mean annual soil temperature is 55 to 59 degrees F (13 to 15 degrees C). The soil moisture control section is dry in all parts from about June to October (about 150 days). The particle-size control section averages 27 to 40 percent clay and 5 to 80 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. Rock fragments on the surface range from 5 to 25 percent gravel, 0 to 20 percent cobbles, 0 to 10 percent stones, and 0 to 10 percent boulders.

The A horizon has dry color of 5YR 5/4, 6/3, or 6/4 or 7.5YR 4/3 or 5/4. Moist color is 5YR 4/3 or 4/4 or 7.5YR 3/2, 3/4, or 4/3. Texture is loam, gravelly loam, or very gravelly loam. The content of clay ranges from 20 to 26 percent. The horizon has 2 to

35 percent gravel, 0 to 10 percent cobbles, and 0 to 5 percent stones. By sum of cations, base saturation ranges from 40 to 65 percent. Reaction is slightly acid or neutral.

The upper part of the Bt horizon has dry color of 5YR 4/4, 5/4, or 6/6 or 7.5YR 5/4. Moist color is 2.5YR 5/4 or 5/6, 5YR 4/3 or 4/4, or 7.5YR 3/4 or 4/3. Texture is loam, gravelly loam, cobbly loam, clay loam, gravelly clay loam, very gravelly clay loam, cobbly clay loam, very cobbly clay loam, or very stony clay loam. The content of clay ranges from 25 to 35 percent. The content of gravel is 2 to 25 percent, the content of cobbles is 0 to 20 percent, and the content of stones is 0 to 20 percent. By sum of cations, base saturation ranges from 40 to 60 percent. Reaction is slightly acid or neutral.

The lower part of the Bt horizon has dry color of 2.5YR 3/4, 4/6, or 6/6 or 5YR 5/4 or 4/6. Moist color is 2.5YR 3/4, 4/4, or 5/6 or 5YR 4/3, 4/4, or 4/6. Texture is clay loam, gravelly clay loam, cobbly clay loam, very stony clay loam, extremely stony clay loam, clay, gravelly clay, very gravelly clay, extremely gravelly clay, very cobbly clay, or extremely stony clay. The content of clay ranges from 35 to 50 percent. The content of gravel is 5 to 25 percent, the content of cobbles is 0 to 30 percent, and the content of stones is 0 to 60 percent. By sum of cations, base saturation ranges from 35 to 50 percent. Reaction ranges from strongly acid to slightly acid.

Ultic Haploxeralfs, Sandstone

Ultic Haploxeralfs, sandstone, consist of deep or very deep, well drained soils that formed in residuum and colluvium derived from marine sandstone. These soils are on canyon side slopes on Cascade foothills. Slopes range from 3 to 100 percent. The mean annual precipitation is about 48 inches (1,219 mm), and the mean annual air temperature is about 57 degrees F (14 degrees C).

Taxonomic class: Thermic Ultic Haploxeralfs

Typical Pedon

Ultic Haploxeralfs, sandstone, very fine sandy loam, on a west-facing slope of 45 percent, under a cover of canyon live oak, blue oak, foothill pine, California laurel, Pacific poison oak, whiteleaf manzanita, and hedgehog dogtail, at an elevation of 980 feet (299 m). When described on 9/24/1998, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 0.5 inch (0 to 1 cm); slightly decomposed plant material; abrupt smooth boundary.

A—0.5 inch to 2 inches (1 to 5 cm); light brown (7.5YR 6/3) very fine sandy loam, brown (7.5YR 4/3) moist; 14 percent clay; strong fine to coarse granular structure; slightly hard, friable, slightly sticky, nonplastic; many very fine and fine roots; many very fine to medium tubular and irregular pores; 1 percent andesite gravel and 4 percent sandstone gravel; slightly acid, pH 6.6 by Hellige-Truog; gradual wavy boundary.

Bt1—2 to 6 inches (5 to 15 cm); light brown (7.5YR 6/4) very fine sandy loam, brown (7.5YR 4/3) moist; 16 percent clay; moderate fine and medium subangular blocky structure; hard, friable, slightly sticky, nonplastic; common very fine and fine roots; many very fine to medium tubular pores; 30 percent discontinuous faint clay films; 1 percent andesite gravel and 2 percent sandstone gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.

Bt2—6 to 11 inches (15 to 28 cm); light brown (7.5YR 6/4) very fine sandy loam, brown (7.5YR 4/4) moist; 18 percent clay; moderate fine and medium subangular blocky structure; hard, friable, slightly sticky, slightly plastic; common very fine and fine roots; many very fine to medium tubular pores; 70 percent discontinuous

- distinct clay films; 1 percent sandstone gravel and 1 percent andesite gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.
- Bt3—11 to 17 inches (28 to 43 cm); light brown (7.5YR 6/4) very fine sandy loam, brown (7.5YR 4/4) moist; 20 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine to medium roots; many very fine to medium tubular pores; 90 percent discontinuous distinct clay films; 1 percent andesite gravel and 4 percent sandstone gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.
- Bt4—17 to 24 inches (43 to 61 cm); light brown (7.5YR 6/4) very fine sandy loam, brown (7.5YR 5/4) moist; 18 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine and fine roots; many very fine to medium tubular pores; 60 percent discontinuous faint clay films; 2 percent andesite gravel and 8 percent sandstone gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.
- 2Bt5—24 to 32 inches (61 to 81 cm); light brown (7.5YR 6/4) very gravelly very fine sandy loam, brown (7.5YR 4/4) moist; 18 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, nonsticky, nonplastic; common very fine to medium roots; many very fine to medium tubular pores; 60 percent discontinuous faint clay films; 50 percent sandstone gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.
- 2Cr/2Bt—32 to 53 inches (81 to 135 cm); 10 percent brown (7.5YR 5/4) and 90 percent yellow (10YR 7/6) extremely gravelly sandy clay loam, 10 percent brown (7.5YR 4/4) and 90 percent yellowish brown (10YR 5/6) moist; 22 percent clay; moderate fine subangular blocky structure and massive; slightly hard, friable, slightly sticky, slightly plastic; few very fine to medium roots; many very fine to medium tubular pores; 80 percent discontinuous distinct clay films; 30 percent sandstone cobbles and 60 percent sandstone gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt wavy boundary.
- 2Cr1—53 to 65 inches (135 to 165 cm); pale yellow (2.5Y 7/4), weakly cemented sandstone bedrock, light olive brown (2.5Y 5/4) moist; few very fine to medium roots; few fine irregular pores; neutral, pH 7.0 by Hellige-Truog; abrupt smooth boundary.
- 2Cr2—65 inches (165 cm); pale yellow (2.5Y 7/4), weakly cemented sandstone bedrock, light olive brown (2.5Y 5/4) moist; few very fine roots; neutral, pH 7.0 by Hellige-Truog.

Type location: Butte County, California; about 2 miles southwest of Forest Ranch, approximately 1,700 feet south and 1,600 feet east of the northwest corner of sec. 13, T. 23 N., R. 2 E.; 39 degrees, 51 minutes, 12 seconds north latitude and 121 degrees, 42 minutes, 28 seconds west longitude; NAD83; USGS Quad: Paradise West, California.

Range in Characteristics

The depth to paralithic bedrock is 40 to more than 80 inches (102 to 203 cm). The mean annual soil temperature is 59 to 62 degrees F (15 to 17 degrees C). The soil moisture control section is dry in all parts from about June to November (about 150 days). The particle-size control section averages 12 to 30 percent clay and 5 to 30 percent rock fragments, mostly gravel. Rock fragments on the surface range from 0 to 20 percent gravel, 0 to 20 percent cobbles, 0 to 20 percent stones, and 0 to 10 percent boulders.

The A horizon has dry color of 10YR 6/2, 6/3, or 6/4 or 7.5YR 6/3, 7/4, or 8/4. Moist color is 10YR 4/2, 4/3, 4/4, or 5/4 or 7.5YR 4/3, 4/4, or 5/4. Texture is very fine sandy loam, fine sandy loam, sandy clay loam, or gravelly sandy loam. The content of clay

ranges from 10 to 26 percent. The content of gravel is 3 to 20 percent. Reaction ranges from moderately acid to neutral.

The Bt and 2Bt horizons have dry color of 10YR 5/3, 5/4, 6/2, 6/4, or 7/4 or 7.5YR 5/4 or 6/4. Moist color is 10YR 4/2, 4/3, 5/3, 5/4, or 5/6 or 7.5YR 4/3, 4/4, or 5/4. Texture is very fine sandy loam, very gravelly very fine sandy loam, fine sandy loam, gravelly fine sandy loam, cobbly fine sandy loam, gravelly sandy loam, very gravelly sandy loam, cobbly sandy loam, sandy clay loam, or gravelly sandy clay loam. The content of clay ranges from 10 to 30 percent. The horizons have 1 to 30 percent gravel and 0 to 25 percent cobbles. Reaction ranges from moderately acid to neutral.

Ultic Haploxeralfs, Sandstone, Low Elevation

Ultic Haploxeralfs, sandstone, low elevation, consist of very deep or deep, well drained soils that formed in colluvium and residuum derived from Cretaceous marine sandstone and Eocene sandstone. These soils are on ridgetops and side slopes on Cascade foothills. Slopes range from 2 to 30 percent. The mean annual precipitation is about 31 inches (787 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Ultic Haploxeralfs

Typical Pedon

Ultic Haploxeralfs, sandstone, low elevation, sandy loam, on an east-facing slope of 5 percent, under a cover of annual grasses, forbs, and scattered blue oaks, at an elevation of 475 feet (145 m). When described on 5/8/2001, the soil was dry to a depth of 8 inches (20 cm) and moist below that depth. (Colors are for dry soil unless otherwise noted.)

- A—0 to 2 inches (0 to 5 cm); light brown (7.5YR 6/3) sandy loam, brown (10YR 4/3) moist; 16 percent clay; moderate fine subangular blocky structure; slightly hard, friable, nonsticky, nonplastic; many very fine and fine roots; many fine irregular and tubular pores; 5 percent well rounded mixed gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt wavy boundary.
- Bt1—2 to 8 inches (5 to 20 cm); light brown (7.5YR 6/3) sandy clay loam, brown (10YR 4/3) moist; 20 percent clay; moderate medium and coarse subangular blocky structure; hard, firm, slightly sticky, nonplastic; many fine and medium roots between peds and common very fine roots throughout; many medium tubular pores; 15 percent discontinuous distinct clay films on surfaces along root channels; 5 percent well rounded mixed gravel; slightly acid, pH 6.2 by Hellige-Truog; clear wavy boundary.
- Bt2—8 to 18 inches (20 to 46 cm); light brown (7.5YR 6/3) sandy clay loam, brown (10YR 4/3) moist; 22 percent clay; moderate coarse subangular blocky structure; hard, firm, slightly sticky, slightly plastic; many fine and medium roots between peds and few very fine roots throughout; many medium tubular pores; 50 percent discontinuous faint clay films on faces of peds; 10 percent well rounded mixed gravel; moderately acid, pH 6.0 by Hellige-Truog; clear wavy boundary.
- Bt3—18 to 28 inches (46 to 71 cm); light brown (7.5YR 6/4) sandy clay loam, brown (7.5YR 4/4) moist; 25 percent clay; moderate coarse subangular blocky structure; hard, firm, slightly sticky, slightly plastic; few very fine and fine roots throughout and common medium and coarse roots between peds; many medium tubular pores; 50 percent discontinuous distinct clay films on faces of peds; 10 percent well rounded mixed gravel; moderately acid, pH 5.8 by Hellige-Truog; clear wavy boundary.
- Bt4—28 to 39 inches (71 to 99 cm); light brown (7.5YR 6/4) sandy clay loam, brown (7.5YR 4/4) moist; 28 percent clay; moderate coarse and very coarse subangular

blocky structure; hard, firm, moderately sticky, moderately plastic; few fine roots throughout and common medium and coarse roots between peds; common fine and medium and tubular pores; 65 percent discontinuous distinct clay films on faces of peds; 10 percent well rounded mixed gravel; moderately acid, pH 5.8 by Hellige-Truog; clear wavy boundary.

BCt—39 to 49 inches (99 to 124 cm); light brown (7.5YR 6/4) sandy clay loam, strong brown (7.5YR 4/6) moist; 26 percent clay; moderate coarse subangular blocky structure; hard, firm, moderately sticky, moderately plastic; few fine roots throughout and common medium and coarse roots between peds; common very fine and fine irregular and tubular pores; 55 percent discontinuous distinct clay films on faces of peds; 10 percent well rounded mixed gravel; moderately acid, pH 6.0 by Hellige-Truog; clear smooth boundary.

C1—49 to 56 inches (124 to 142 cm); reddish yellow (7.5YR 6/6) sandy clay loam, brown (7.5YR 5/6) moist; 22 percent clay; massive; hard, firm, slightly sticky, slightly plastic; few fine to coarse roots in cracks; few very fine irregular pores; 5 percent well rounded mixed gravel; slightly acid, pH 6.2 by Hellige-Truog; abrupt smooth boundary.

C2—56 to 70 inches (142 to 178 cm); brownish yellow (10YR 6/6) sandy loam, yellowish brown (10YR 5/6) moist; 14 percent clay; massive; hard, firm, nonsticky, nonplastic; few fine and medium roots in cracks; few very fine irregular pores; slightly acid, pH 6.5 by Hellige-Truog.

Type location: Butte County, California; about 0.5 mile west of Pentz, approximately 1,100 feet east and 100 feet south of the northwest corner of sec. 25, T. 21 N., R. 3 E.; 39 degrees, 39 minutes, 14 seconds north latitude and 121 degrees, 35 minutes, 38 seconds west longitude; NAD27; USGS Quad: Cherokee, California.

Range in Characteristics

The depth to bedrock is 40 to more than 80 inches (102 to 203 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry in all parts from about June to November (about 150 days). The particle-size control section averages 20 to 30 percent clay and 0 to 10 percent rock fragments, mostly gravel. Mineralogy is mixed. Rock fragments on the surface range from 0 to 5 percent gravel.

The A horizon has dry color of 10YR 6/2 or 6/3 or 7.5YR 6/3. Moist color is 10YR 4/2 or 4/3. Texture is sandy loam, fine sandy loam, or very fine sandy loam. The content of clay ranges from 14 to 20 percent. The content of gravel is 0 to 10 percent. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 7.5YR 6/3 or 6/4. Moist color is 10YR 4/3 or 4/4 or 7.5YR 4/4. Texture is sandy clay loam, gravelly sandy clay loam, sandy clay loam, or clay loam. The content of clay ranges from 20 to 40 percent. The content of gravel is 0 to 20 percent. Reaction is moderately acid or slightly acid.

The BCt horizon has dry color of 7.5YR 6/4 or 10YR 6/4. Moist color is 7.5YR 4/6 or 10YR 5/4. Texture is sandy clay loam, clay loam, loam, fine sandy loam, or very fine sandy loam. The content of clay ranges from 10 to 35 percent. The content of gravel is 0 to 15 percent. Reaction is moderately acid or slightly acid.

The C horizon has dry color of 7.5YR 6/6 or 10YR 6/6. Moist color is 7.5YR 5/4 or 10YR 5/6. Texture is sandy loam or sandy clay loam. The content of clay ranges from 12 to 22 percent. The content of gravel is 0 to 5 percent. Reaction is moderately acid or slightly acid.

Ultic Haploxeralfs, Thermic

Ultic Haploxeralfs, thermic, consist of moderately deep, moderately well drained soils that formed in residuum derived from volcanic rocks. These soils are on ridgetops on Cascade foothills. Slopes range from 3 to 15 percent. The mean annual precipitation is about 30 inches (762 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Loamy-skeletal, mixed, superactive, thermic Ultic Haploxeralfs

Typical Pedon

Ultic Haploxeralfs, thermic, gravelly loam, on a southwest-facing slope of 4 percent, under a cover of yellow starthistle and hedgehog dogtail with scattered blue oak, buckbrush, foothill pine, and manzanita, at an elevation of 1,250 feet (381 m). When described on 11/19/1998, the soil was moist throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); reddish brown (5YR 5/4) gravelly loam, reddish brown (5YR 4/3) moist; 26 percent clay; weak medium subangular blocky structure parting to moderate fine and medium granular; moderately hard, friable, slightly sticky, slightly plastic; few fine and many very fine roots; many very fine to medium tubular and irregular pores; 5 percent stones, 5 percent cobbles, and 10 percent gravel; slightly acid, pH 6.2 by pH meter 1:1 water; clear smooth boundary.

Bt1—2 to 6 inches (5 to 15 cm); reddish brown (5YR 5/4) very cobbly clay loam, reddish brown (5YR 4/3) moist; 30 percent clay; moderate fine and medium subangular blocky structure; moderately hard, friable, slightly sticky, slightly plastic; few fine and medium and common very fine roots; common very fine to medium tubular pores; 60 percent continuous distinct clay films on faces of peds; 5 percent stones, 10 percent gravel, and 20 percent cobbles; slightly acid, pH 6.1 by pH meter 1:1 water; abrupt smooth boundary.

Bt2—6 to 13 inches (15 to 33 cm); reddish brown (5YR 4/4) very cobbly clay loam, reddish brown (5YR 4/3) moist; 34 percent clay; moderate fine and medium subangular blocky structure; moderately hard, friable, moderately sticky, moderately plastic; common very fine to medium and few coarse roots; many very fine and fine and common medium tubular pores; 80 percent continuous distinct clay films on faces of peds; 10 percent stones, 15 percent gravel, and 30 percent cobbles; moderately acid, pH 6.0 by pH meter 1:1 water; abrupt smooth boundary.

Bt3—13 to 21 inches (33 to 53 cm); yellowish red (5YR 4/6) very cobbly clay loam, reddish brown (5YR 4/4) moist; 33 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine and fine roots; many very fine and fine and common medium tubular pores; 80 percent continuous distinct clay films on faces of peds; 15 percent stones, 20 percent gravel, and 25 percent cobbles; slightly acid, pH 6.1 by pH meter 1:1 water; abrupt smooth boundary.

Bt4—21 to 31 inches (53 to 79 cm); yellowish red (5YR 4/6) very cobbly clay loam, reddish brown (5YR 4/4) moist; 31 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, very sticky, moderately plastic; common very fine and fine roots; many very fine and fine and common medium tubular pores; 90 percent continuous distinct clay films on faces of peds; 10 percent stones, 20 percent gravel, and 25 percent cobbles; slightly acid, pH 6.4 by pH meter 1:1 water; abrupt wavy boundary.

R—31 inches (79 cm); strongly cemented volcanic conglomerate bedrock; platy iron-manganese concretions at the top of the horizon.

Type location: Butte County, California; about 1.05 miles north of the intersection of the upper end of Humboldt Road and Highway 32 and 200 feet west of Highway 32, approximately 2,400 feet east and 150 feet north of the center of sec. 10, T. 22 N., R. 2 E.; 39 degrees, 46 minutes, 39 seconds north latitude and 121 degrees, 43 minutes, 58 seconds west longitude; NAD83; USGS Quad: Paradise West, California.

Range in Characteristics

The depth to lithic or paralithic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 59 to 67 degrees F (15 to 19 degrees C). The soil moisture control section is dry in all parts from about June to October (about 150 days). The particle-size control section averages 22 to 35 percent clay and 35 to 70 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. A fluctuating water table can occur between the top of the bedrock and 18 inches (46 cm) below the surface of the soil from December through March. Redoximorphic features occur as oxidized iron masses and iron-manganese masses in the A horizon and as a manganese capping on the R or Cr horizon. Rock fragments on the surface range from 5 to 20 percent gravel, 0 to 80 percent cobbles, 0 to 10 percent stones, and 0 to 10 percent boulders.

The A horizon has dry color of 5YR 5/4, 6/4, or 6/6 or 7.5YR 6/4. Moist color is 5YR 4/3 or 4/4 or 7.5YR 4/2 or 4/3. Texture is gravelly or cobbly loam. The content of clay ranges from 18 to 27 percent. The horizon has 10 to 25 percent gravel, 0 to 15 percent cobbles, and 0 to 5 percent stones. By sum of cations, base saturation ranges from 55 to 70 percent. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 5YR 4/4, 4/6, 5/4, or 5/6; 7.5YR 5/3, 5/4, or 6/4; or 10YR 5/4. Moist color is 5YR 4/3 or 4/4 or 7.5YR 4/3 or 4/4. Texture is gravelly loam, very gravelly loam, extremely gravelly loam, cobbly loam, very cobbly loam, very cobbly clay loam, or extremely cobbly clay loam. The content of clay ranges from 20 to 39 percent. The horizon has 10 to 40 percent gravel, 0 to 40 percent cobbles, and 0 to 15 percent stones. By sum of cations, base saturation ranges from 50 to 80 percent. Reaction ranges from moderately acid to neutral.

Ultic Haploxeralfs, Thermic, High Terrace

Ultic Haploxeralfs, thermic, high terrace, consist of very deep, moderately well drained soils that formed in alluvium derived from igneous and metamorphic rocks. These soils are on old, highly dissected, high terraces. Slopes range from 2 to 30 percent. The mean annual precipitation is about 29 inches (737 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Thermic Ultic Haploxeralfs

Typical Pedon

Ultic Haploxeralfs, thermic, high terrace, loam, on a slope of 30 percent, under a cover of blue oak, foothill pine, annual grasses, and forbs, at an elevation of 660 feet (201 m). When described on 4/27/2002, the soil was moist throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); brown (10YR 5/3) loam, dark brown (10YR 3/3) moist; 17 percent clay; moderate very fine and fine subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; many very fine roots; many very fine and fine tubular pores; 2 percent subrounded quartz gravel and 8 percent subrounded metavolcanic gravel; 10 percent fine irregular yellowish red (5YR 5/8 moist) oxidized iron masses throughout; slightly acid, pH 6.3 by Hellige-Truog; abrupt smooth boundary.

- BA_t**—2 to 6 inches (5 to 15 cm); yellowish brown (10YR 5/4) gravelly loam, dark yellowish brown (10YR 3/4) moist; 20 percent clay; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; many very fine roots; many very fine and fine and common medium tubular pores; 5 percent subrounded quartz gravel and 25 percent subrounded metavolcanic gravel; strongly acid, pH 5.5 by Hellige-Truog; clear smooth boundary.
- Bt₁**—6 to 12 inches (15 to 30 cm); yellowish brown (10YR 5/4) very gravelly loam, dark yellowish brown (10YR 3/4) moist; 23 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine roots; many very fine and fine tubular pores; 5 percent subrounded quartz gravel, 35 percent subrounded metavolcanic gravel, and 10 percent subrounded metavolcanic cobbles; strongly acid, pH 5.5 by Hellige-Truog; clear smooth boundary.
- Bt₂**—12 to 20 inches (30 to 51 cm); light yellowish brown (10YR 6/4) very gravelly loam, dark yellowish brown (10YR 4/4) moist; 26 percent clay; strong medium subangular blocky structure; moderately hard, firm, moderately sticky, moderately plastic; many very fine roots; many very fine and fine tubular pores; 5 percent subrounded quartz gravel, 10 percent subrounded metavolcanic cobbles, and 25 percent subrounded metavolcanic gravel; strongly acid, pH 5.5 by Hellige-Truog; clear smooth boundary.
- Bt₃**—20 to 32 inches (51 to 81 cm); light yellowish brown (10YR 6/4) extremely gravelly clay loam, yellowish brown (10YR 5/4) moist; 29 percent clay; strong medium subangular blocky structure; moderately hard, firm, moderately sticky, moderately plastic; few medium and many very fine roots; many very fine and fine tubular pores; 5 percent subrounded quartz gravel, 10 percent subrounded metavolcanic cobbles, and 60 percent subrounded metavolcanic gravel; slightly acid, pH 6.3 by Hellige-Truog; abrupt smooth boundary.
- Bq₁**—32 to 39 inches (81 to 99 cm); very pale brown (10YR 7/4) extremely gravelly loam, light yellowish brown (10YR 6/4) moist; 26 percent clay; moderate fine subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; accumulation of secondary silica; many very fine roots; many very fine and fine tubular pores; 1 percent fine irregular yellowish red (5YR 5/8 moist) oxidized iron masses around rock fragments; 5 percent subrounded quartz gravel, 10 percent subrounded metavolcanic cobbles, and 50 percent subrounded metavolcanic gravel; slightly acid, pH 6.3 by Hellige-Truog; clear smooth boundary.
- Bq₂**—39 to 50 inches (99 to 127 cm); light yellowish brown (10YR 6/4) extremely gravelly sandy clay loam, yellowish brown (10YR 5/4) moist; 23 percent clay; moderate very fine and fine subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; accumulation of secondary silica; common very fine and fine and few medium roots around rock fragments; common very fine and fine tubular pores; 10 percent fine irregular yellowish red (5YR 5/8 moist) oxidized iron masses around rock fragments; 5 percent subrounded quartz gravel, 15 percent subrounded metavolcanic cobbles, and 60 percent subrounded metavolcanic gravel; slightly acid, pH 6.3 by Hellige-Truog.

Type location: Butte County, California; about 2.35 miles northwest of Bangor, approximately 1,350 feet south and 2,100 feet west of the northeast corner of sec. 20, T. 18 N., R. 5 E.; 39 degrees, 24 minutes, 21.58 seconds north latitude and 121 degrees, 25 minutes, 59.60 seconds west longitude; NAD83; USGS Quad: Bangor, California.

Range in Characteristics

Depth to the Bq horizon is 20 to 60 inches (51 to 152 cm) or more. The thickness of the solum is more than 60 inches (152 cm). The mean annual soil temperature is

59 to 65 degrees F (15 to 18 degrees C). The soil moisture control section is dry in all parts from about June through October (about 150 days). The particle-size control section averages 25 to 37 percent clay and 5 to 65 percent rock fragments, mostly gravel. Mineralogy is mixed. Redoximorphic features, such as oxidized iron masses and spherical manganese concretions, can occur in all horizons. A fluctuating water table can occur at a depth of 10 to 60 inches (25 to 152) from December through March. Some pedons have a BCt or C horizon.

The A horizon has dry color of 10YR 5/3, 5/4, or 6/4. Moist color is 10YR 3/3 or 3/4 or 7.5YR 3/3 or 4/3. Texture is loam, gravelly loam, or gravelly sandy loam. The content of clay ranges from 14 to 17 percent. The content of gravel is 10 to 30 percent. The content of organic matter is 1.0 to 3.5 percent. Reaction ranges from strongly acid to slightly acid.

The BA_t horizon has dry color of 10YR 5/4, 5/6, or 6/3 or 7.5YR 5/4. Moist color is 10YR 3/4, 7.5YR 4/3 or 4/4, or 5YR 4/4. Texture is gravelly loam or very gravelly sandy loam. The content of clay ranges from 18 to 20 percent. The horizon has 15 to 45 percent gravel and 0 to 15 percent cobbles. The content of organic matter is 1.0 to 1.5 percent. Reaction is strongly acid or moderately acid.

The upper part of the B_t horizon has dry color of 10YR 5/3, 5/4, or 6/4 or 7.5YR 6/4. Moist color is 10YR 3/4 or 4/3, 7.5YR 4/4, or 5YR 4/4. Texture is loam, very gravelly loam, cobbly clay loam, very gravelly sandy clay loam, or gravelly sandy loam. The content of clay ranges from 20 to 30 percent. The content of gravel is 15 to 50 percent, and the content of cobbles is 0 to 15 percent. The content of organic matter is 0.5 to 1.0 percent. Reaction is strongly acid or moderately acid.

The lower part of the B_t horizon has dry color of 10YR 6/4; 7.5YR 6/4, 6/6, or 7/4; or 5YR 5/6. Moist color is 10YR 4/3; 7.5YR 4/4, 5/4, or 5/6; or 5YR 4/4 or 4/6. Texture is very gravelly loam, gravelly clay loam, very gravelly clay loam, extremely gravelly clay loam, cobbly clay loam, gravelly sandy clay loam, or very gravelly sandy clay loam. The content of clay ranges from 26 to 37 percent. The content of gravel is 15 to 65 percent, and the content of cobbles is 0 to 10 percent. The content of organic matter is 0.2 to 0.5 percent. Reaction ranges from strongly acid to slightly acid.

The B_q horizon has dry color of 10YR 5/4, 6/4, or 7/4. Moist color is 10YR 4/3, 4/4, 5/4, or 6/4. Texture is extremely gravelly loam or extremely gravelly sandy clay loam. The content of clay ranges from 20 to 26 percent. The horizon has 50 to 85 percent gravel and 0 to 15 percent cobbles. The content of organic matter is 0.1 to 0.5 percent. Reaction is slightly acid or neutral.

Vermet Series

The Vermet series consists of very deep, poorly drained soils that formed in alluvium derived from mixed rock sources. These soils are in channels on flood plains. Slopes range from 0 to 2 percent. The mean annual precipitation is about 22 inches (559 mm), and the mean annual air temperature is about 63 degrees F (17 degrees C).

Taxonomic class: Fine-silty, mixed, superactive, thermic Aquic Haploxerepts

Typical Pedon

Vermet silt loam, on a slope of less than 1 percent, under a cover of annual grasses and forbs, at an elevation of 103 feet (31 m). When described on 6/27/1997, the soil was dry to a depth of 16 inches (41 cm) and slightly moist from 16 to 72 inches (41 to 183 cm). (Colors are for dry soil unless otherwise noted.)

A1—0 to 2 inches (0 to 5 cm); light brownish gray (10YR 6/2) silt loam, dark grayish brown (10YR 4/2) moist; 18 percent clay; strong very thin platy structure parting to moderate fine subangular blocky; slightly hard, very friable, nonsticky, slightly

plastic; common very fine roots; few fine irregular and few very fine tubular pores; 2 percent very fine irregular strong brown (7.5YR 4/6) oxidized iron masses; 1 percent well rounded gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

- A2—2 to 8 inches (5 to 20 cm); light brownish gray (10YR 6/2) silt loam, dark grayish brown (10YR 4/2) moist; 20 percent clay; moderate fine subangular blocky structure; slightly hard, friable, nonsticky, slightly plastic; common very fine roots; few very fine tubular pores; 5 percent very fine irregular strong brown (7.5YR 4/6) oxidized iron masses; neutral, pH 6.8 by Hellige-Truog; clear smooth boundary.
- A3—8 to 13 inches (20 to 33 cm); pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; 22 percent clay; moderate fine subangular blocky structure; slightly hard, friable, nonsticky, slightly plastic; few very fine roots; common very fine and fine tubular pores; 5 percent very fine irregular strong brown (7.5YR 4/6) oxidized iron masses; neutral, pH 6.8 by Hellige-Truog; clear smooth boundary.
- Bw1—13 to 16 inches (33 to 41 cm); pale brown (10YR 6/3) silty clay loam, grayish brown (10YR 5/2) moist; 29 percent clay; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; few very fine roots; common very fine tubular pores; 5 percent discontinuous faint silt coatings; 10 percent very fine irregular brown (7.5YR 4/4) oxidized iron masses; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.
- Bw2—16 to 26 inches (41 to 66 cm); pale brown (10YR 6/3) silty clay loam, brown (10YR 4/3) moist; 30 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; few very fine roots; common very fine tubular pores; 5 percent discontinuous faint silt coatings; 10 percent very fine irregular brown (7.5YR 4/4) oxidized iron masses; slightly alkaline, pH 7.5 by Hellige-Truog; clear smooth boundary.
- Bw3—26 to 41 inches (66 to 104 cm); pale brown (10YR 6/3) silty clay loam, brown (10YR 5/3) moist; 32 percent clay; moderate medium subangular blocky structure; hard, friable, slightly sticky, moderately plastic; common very fine tubular pores; 5 percent discontinuous faint silt coatings; 10 percent very fine irregular brown (7.5YR 4/4) oxidized iron masses and 10 percent very fine threadlike gray (10YR 6/1) iron depletions lining pores; slightly alkaline, pH 7.5 by Hellige-Truog; clear smooth boundary.
- Bw4—41 to 62 inches (104 to 157 cm); light yellowish brown (10YR 6/4) silty clay loam, brown (10YR 5/3) moist; 32 percent clay; moderate medium subangular blocky structure; hard, firm, slightly sticky, moderately plastic; few very fine tubular pores; 5 percent discontinuous faint silt coatings; 10 percent very fine irregular brown (7.5YR 4/4) oxidized iron masses and 10 percent very fine threadlike gray (10YR 6/1) iron depletions lining pores; slightly alkaline, pH 7.5 by Hellige-Truog; clear smooth boundary.
- Bw5—62 to 72 inches (157 to 183 cm); very pale brown (10YR 7/4) silty clay loam, yellowish brown (10YR 5/4) moist; 33 percent clay; moderate medium subangular blocky structure; hard, firm, slightly sticky, moderately plastic; few very fine tubular pores; 5 percent discontinuous faint silt coatings; 5 percent very fine irregular brown (7.5YR 4/4) oxidized iron masses, 5 percent very fine threadlike gray (10YR 6/1) iron depletions lining pores, and 5 percent very fine irregular black (N 2/0) manganese masses; 1 percent well rounded gravel; moderately alkaline, pH 8.0 by Hellige-Truog; clear smooth boundary.

Type location: Butte County, California; about 0.76 mile north of the Rancho Llano Seco headquarters, approximately 200 feet east of entrance road and 2 miles west of the Mt. Diablo meridian; in an unsectionized area in the Llano Seco Land Grant; 39 degrees, 37 minutes, 10 seconds north latitude and 121 degrees, 57 minutes, 10 seconds west longitude; NAD27; USGS Quad: Llano Seco, California.

Range in Characteristics

The soils are more than 60 inches (152 cm) deep. The mean annual soil temperature is 60 to 64 degrees F (16 to 18 degrees C). The particle-size control section averages 27 to 35 percent clay and more than 50 percent silt. Mineralogy is mixed. By ammonium acetate, base saturation ranges from 90 to 100 percent throughout the profile. A fluctuating water table can occur within a depth of 40 inches (102 cm) from December through April and usually is below a depth of 40 inches (102 cm) from May through November. Redoximorphic features range from 2 to 20 percent oxidized iron masses with color of 7.5YR 4/4 or 4/6 from a depth of 0 to 80 inches (0 to 203 cm) or more, 5 to 15 percent soft manganese masses with color of N 2/0 from a depth of 20 to 80 inches (51 to 203 cm) or more, and 5 to 20 percent iron depletions with color of 10YR 6/1, 5Y 4/1, or 5BG 5/1 beginning at a depth of 20 to 30 inches (51 to 76 cm) and extending to a depth of 80 inches (203 cm) or more. Rock fragments on the surface range from 0 to 20 percent gravel. Some pedons may have calcium carbonates in the lower part and/or a gravelly substratum below a depth of 40 inches (102 cm) and/or have a C horizon.

The A horizon has dry color of 10YR 6/2 or 6/3. Moist color is 10YR 4/2, 4/3, 5/2, or 5/3. Texture is silt loam or gravelly silt loam. The content of clay ranges from 18 to 25 percent. The content of gravel is 0 to 20 percent. The content of organic matter is 1 to 5 percent. Reaction ranges from slightly acid to slightly alkaline.

The Bw horizon has dry color of 10YR 6/3, 6/4, or 7/4 or 2.5Y 5/2, 6/2, 7/4, or 8/3. Moist color is 10YR 4/3, 5/2, or 5/3; 2.5Y 5/3 or 5/4; or 7.5YR 5/3. Texture is silty clay loam or clay loam. The content of clay ranges from 29 to 35 percent in the upper part of the horizon and from 30 to 40 percent in the lower part. The content of organic matter is 0.2 to 2 percent. Reaction ranges from neutral to moderately alkaline.

The C horizon, where it occurs, has dry color of 10YR 7/3 or 8/3 or 2.5Y 7/3. Moist color is 10YR 4/3, 5/3, or 5/4 or 2.5Y 5/3. Texture is sandy loam, very fine sandy loam, or silt loam. The content of clay ranges from 13 to 20 percent. Reaction is slightly alkaline or moderately alkaline.

Vina Series

The Vina series consists of very deep, well drained soils that formed in alluvium derived from mixed rock sources. These soils are on alluvial fans. Slopes are 0 to 1 percent. The mean annual precipitation is about 22 inches (559 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Coarse-loamy, mixed, superactive, thermic Pachic Haploxerolls

Typical Pedon

Vina fine sandy loam, on a slope of 0.5 percent, under a cover of almond trees, at an elevation of 148 feet (45 m). When described on 5/25/1994, the soil was moist throughout. (Colors are for dry soil unless otherwise noted.)

Ap1—0 to 3 inches (0 to 8 cm); grayish brown (10YR 5/2) fine sandy loam, very dark grayish brown (10YR 3/2) moist; 13 percent clay; strong thick platy structure parting to strong thin and medium platy; soft, friable, nonsticky, slightly plastic; common very fine and fine roots; common very fine and fine and few medium tubular pores; moderately alkaline, pH 8.0 by Hellige-Truog; abrupt smooth boundary.

Ap2—3 to 11 inches (8 to 28 cm); brown (10YR 5/3) fine sandy loam, very dark grayish brown (10YR 3/2) moist; 15 percent clay; moderate fine and medium subangular blocky structure; soft, friable, nonsticky, slightly plastic; few fine and

- medium roots; common fine and medium tubular pores; moderately alkaline, pH 8.0 by Hellige-Truog; clear smooth boundary.
- A1—11 to 23 inches (28 to 58 cm); brown (10YR 5/3) sandy loam, very dark grayish brown (10YR 3/2) moist; 13 percent clay; weak fine and medium subangular blocky structure; soft, very friable, nonsticky, slightly plastic; common fine and medium, few coarse, and few very fine roots; common fine and medium and few very fine tubular pores; 2 percent gravel; moderately alkaline, pH 8.0 by Hellige-Truog; clear wavy boundary.
- A2—23 to 37 inches (58 to 94 cm); brown (10YR 5/3) sandy loam, brown (7.5YR 4/2) moist; 11 percent clay; weak and moderate fine and medium subangular blocky structure; soft, very friable, nonsticky, slightly plastic; few fine to coarse roots; many fine and medium and few very fine tubular pores; 4 percent gravel; moderately alkaline, pH 8.0 by Hellige-Truog; clear smooth boundary.
- C1—37 to 50 inches (94 to 127 cm); brown (10YR 5/3) sandy loam, brown (7.5YR 4/2) moist; 7 percent clay; massive; soft, very friable, nonsticky, nonplastic; few fine and medium roots; common fine and few medium tubular pores; 4 percent gravel; slightly alkaline, pH 7.5 by Hellige-Truog; clear wavy boundary.
- C2—50 to 54 inches (127 to 137 cm); brown (10YR 5/3) loamy coarse sand, dark brown (7.5YR 3/2) moist; 5 percent clay; single grain; soft, very friable, nonsticky, nonplastic; many fine irregular pores; neutral, pH 7.0 by Hellige-Truog; abrupt wavy boundary.
- C3—54 to 80 inches (137 to 203 cm); light brownish gray (10YR 6/2) coarse sand, very dark grayish brown (10YR 3/2) moist; 3 percent clay; single grain; loose, nonsticky, nonplastic; many fine irregular pores; 2 percent gravel; neutral, pH 7.0 by Hellige-Truog.

Type location: Butte County, California; about 2 miles west of Chico, approximately 3,250 feet east of Meridian Avenue and 1,650 feet south of Sacramento Avenue; in an unsectionized area in the Arroyo Chico Land Grant; 39 degrees, 43 minutes, 32 seconds north latitude and 121 degrees, 54 minutes, 24 seconds west longitude; NAD27; USGS Quad: Ord Ferry, California.

Range in Characteristics

The depth of the soils is more than 80 inches (203 cm). The mean annual soil temperature is 60 to 62 degrees F (16 to 17 degrees C). The particle-size control section averages 12 to 18 percent clay and 50 to 65 percent sand. Mineralogy is mixed. The content of organic matter is 1 to 2.5 percent to a depth of 23 inches (56 cm). By ammonium acetate, base saturation is 100 percent to a depth of 23 inches (56 cm).

The Ap horizon has dry color of 10YR 4/3, 5/2, or 5/3. Moist color is 10YR 3/1, 3/2, or 3/3 or 7.5YR 3/2. Texture is fine sandy loam or loam. The content of clay ranges from 12 to 20 percent. The content of gravel is 0 to 5 percent. Reaction ranges from slightly acid to moderately alkaline.

The A horizon has dry color of 10YR 4/2, 4/3, 5/2, or 5/3. Moist color is 10YR 3/2 or 3/3 or 7.5YR 3/2. Texture is fine sandy loam, sandy loam, or loam. The content of clay ranges from 5 to 18 percent. The content of gravel is 0 to 5 percent. Reaction ranges from slightly acid to moderately alkaline.

The Bw horizon, where it occurs, has dry color of 10YR 5/3, 6/2, or 6/3. Moist color is 10YR 4/2 or 4/3 or 7.5YR 4/2 or 4/3. Texture is loam, fine sandy loam, or sandy loam. The content of clay ranges from 5 to 18 percent. The content of gravel is 0 to 5 percent. Reaction ranges from neutral to moderately alkaline.

The C horizon has dry color of 10YR 4/3, 5/2, 5/3, or 6/2. Moist color is 10YR 3/2, 3/3, or 4/2 or 7.5YR 3/2, 3/3, or 4/2. Texture is fine sandy loam, loam, sandy loam, loamy sand, loamy coarse sand, or coarse sand. The content of clay ranges from 1 to

15 percent. The content of gravel is 0 to 5 percent. Reaction ranges from neutral to moderately alkaline.

Vistarobles Series

The Vistarobles series consists of shallow, somewhat poorly drained soils that formed in alluvium derived from igneous and metamorphic rocks. These soils are in swales on intermediate terraces. Slopes range from 0 to 9 percent. The mean annual precipitation is about 22 inches (559 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Clayey, mixed, active, thermic, shallow Abruptic Durixeralfs

Typical Pedon

Vistarobles sandy loam, on a south-facing slope of less than 1 percent, under a cover of navarretia, coyote thistle, and blow wives, at an elevation of 100 feet (30 m). When described on 5/13/1992, the soil was moist below a depth of 6 inches (15 cm). (Colors are for dry soil unless otherwise noted.)

- A1—0 to 5 inches (0 to 13 cm); strong brown (7.5YR 5/6) sandy loam, dark brown (7.5YR 3/4) moist; 17 percent clay; weak thick platy structure parting to moderate medium subangular blocky; hard, friable, slightly sticky, slightly plastic; few very fine and fine roots; many very fine irregular and tubular pores; 5 percent fine distinct light brownish gray (10YR 6/2) oxidized iron masses and 2 percent fine distinct black (N 2/0) manganese masses; 5 percent gravel; moderately acid, pH 6.0 by Hellige-Truog; clear smooth boundary.
- A2—5 to 10 inches (13 to 25 cm); strong brown (7.5YR 5/6) sandy clay loam, brown (7.5YR 4/4) moist; 20 percent clay; moderate fine and medium subangular blocky structure; hard, friable, slightly sticky, slightly plastic; few very fine roots; many very fine irregular and tubular pores; 10 percent fine distinct strong brown (7.5YR 5/8) oxidized iron masses and 2 percent fine distinct black (N 2/0) manganese masses; 10 percent gravel; neutral, pH 6.8 by Hellige-Truog; abrupt smooth boundary.
- 2Bt—10 to 14 inches (25 to 36 cm); strong brown (7.5YR 5/6) gravelly clay, dark brown (7.5YR 3/4) moist; 40 percent clay; moderate medium angular blocky structure; very hard, friable, moderately sticky, moderately plastic; many very fine irregular and tubular pores; 2 percent fine distinct black (N 2/0) manganese masses; 50 percent discontinuous prominent clay films on faces of peds; 25 percent gravel; neutral, pH 7.0 by Hellige-Truog; abrupt smooth boundary.
- 3Bqm—14 to 34 inches (36 to 86 cm); reddish yellow (7.5YR 6/6), indurated duripan, strong brown (7.5YR 4/6) moist; cemented by silica; cementation decreasing with increasing depth; 25 percent gravel and 5 percent cobbles; 15 percent manganese surface coatings on top of the duripan; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.
- 3C—34 to 40 inches (86 to 102 cm); dark yellowish brown (10YR 4/6) very cobbly sandy loam, dark yellowish brown (10YR 4/4) moist; 14 percent clay; single grain; loose, nonsticky, nonplastic; many very fine irregular pores; 15 percent gravel and 20 percent cobbles; slightly alkaline, pH 7.5 by Hellige-Truog.

Type location: Butte County, California; about 3.2 miles northwest of Honcut, approximately 1,800 feet east and 300 feet south of the northwest corner of sec. 6, T. 17 N., R. 4 E.; 39 degrees, 21 minutes, 50 seconds north latitude and 121 degrees, 34 minutes, 9 seconds west longitude; NAD27; USGS Quad: Honcut, California.

Range in Characteristics

Depth to the duripan is 10 to 20 inches (25 to 51 cm). The mean annual soil temperature is 61 to 65 degrees F (16 to 18 degrees C). The soil moisture control section is dry in all parts from about May 15 to October 31 (about 150 days). The particle-size control section averages 36 to 50 percent clay and 3 to 25 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur from the top of the duripan to 16 inches (41 cm) below the surface of the soil from November through April. Rock fragments on the surface range from 0 to 15 percent gravel and 0 to 5 percent cobbles. Some pedons have a BA, Bt, or 2BCt horizon and/or have iron depletions in the 2Bt horizon.

The A horizon has dry color of 7.5YR 5/4, 5/6, 5/8, or 6/4 or 10YR 4/4, 5/2, or 5/4. Moist color is 7.5YR 3/2, 3/4, or 4/4; 5YR 3/4; or 10YR 3/4. Texture is loam, gravelly loam, sandy loam, gravelly sandy loam, or sandy clay loam. The content of clay ranges from 16 to 26 percent. The horizon has 5 to 20 percent gravel and 0 to 10 percent cobbles. The content of organic matter is 1 to 2 percent. By sum of cations, base saturation ranges from 65 to 75 percent. Redoximorphic features, such as oxidized iron-manganese masses with dry color of 7.5YR 5/6 or 5/8 or 10YR 5/4, 5/8, 6/2, or 7/3 and manganese masses with dry color of N 2/0, occur in this horizon. Reaction ranges from strongly acid to neutral.

The 2Bt horizon has dry color of 7.5YR 5/4, 5/6, or 6/6. Moist color is 7.5YR 3/4, 4/4, or 4/6 or 5YR 4/6. Texture is clay or gravelly clay. The content of clay ranges from 40 to 50 percent. The content of gravel is 0 to 25 percent. The content of organic matter is 0.4 to 1.0 percent. By sum of cations, base saturation ranges from 75 to 85 percent. Redoximorphic features, such as soft oxidized iron masses with dry color of 7.5YR 4/4 and manganese masses with dry color of N 2.5/0, occur in this horizon. Reaction is slightly acid or neutral.

The 3Bqm horizon has dry color of 7.5YR 5/8 or 6/6. Moist color is 7.5YR 4/6 or 5/6. The horizon has 20 to 60 percent gravel and 1 to 15 percent cobbles. Reaction ranges from neutral to moderately alkaline.

The 3C horizon has dry color of 10YR 4/6 or 6/4. Moist color is 10YR 4/4 or 5/4 or 7.5YR 4/6 or 5/6. Texture is very cobbly loamy sand, very gravelly loamy sand, very gravelly loamy coarse sand, very cobbly sandy loam, very gravelly sandy loam, very cobbly coarse sandy loam, or very gravelly coarse sandy loam. The content of clay ranges from 3 to 15 percent. The horizon has 15 to 60 percent gravel and 0 to 25 percent cobbles. Reaction ranges from neutral to moderately alkaline.

Wafap Series

The Wafap series consists of deep, somewhat poorly drained soils that formed in alluvium derived from volcanic rocks. These soils are on bars on low stream terraces. Slopes range from 0 to 2 percent. The mean annual precipitation is about 26 inches (660 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Clayey-skeletal, mixed, superactive, thermic Oxyaquic Argixerolls

Typical Pedon

Wafap gravelly loam, on a west-facing slope of 1 percent, under a cover of filaree and soft chess, at an elevation of 312 feet (95 m). When described on 4/2/1997, the soil was dry to a depth of 1 inch (3 cm), very slightly moist from 1 to 5 inches (3 to 13 cm), and slightly moist from 5 to 46 inches (13 to 117 cm). (Colors are for dry soil unless otherwise noted.)

- A—0 to 1 inch (0 to 3 cm); brown (7.5YR 5/3) gravelly loam, dark reddish brown (5YR 3/3) moist; 22 percent clay; moderate medium platy structure parting to strong fine and medium subangular blocky; very hard, firm, slightly sticky, slightly plastic; many very fine roots; common very fine vesicular and tubular pores; 10 percent cobbles and 20 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.
- Bt1—1 to 5 inches (3 to 13 cm); brown (7.5YR 4/3) cobbly clay loam, dark reddish brown (5YR 3/2) moist; 28 percent clay; moderate coarse columnar structure parting to strong medium subangular blocky; extremely hard, firm, slightly sticky, moderately plastic; common very fine roots around rock fragments; common very fine vesicular and tubular pores; 70 percent continuous distinct clay films on faces of peds; 15 percent cobbles and 15 percent gravel; neutral, pH 6.7 by Hellige-Truog; gradual smooth boundary.
- Bt2—5 to 13 inches (13 to 33 cm); brown (7.5YR 4/3) very cobbly clay loam, dark reddish brown (5YR 3/2) moist; 36 percent clay; moderate medium subangular blocky structure; very hard, friable, moderately sticky, moderately plastic; common very fine roots; common fine and very fine vesicular and tubular pores; 80 percent continuous distinct clay films on faces of peds; 5 percent stones, 10 percent gravel, and 25 percent cobbles; neutral, pH 7.0 by Hellige-Truog; clear wavy boundary.
- Bt3—13 to 32 inches (33 to 81 cm); brown (7.5YR 4/4) extremely cobbly clay loam, reddish brown (5YR 4/3) moist; 39 percent clay; moderate fine and medium subangular blocky structure; very hard, friable, very sticky, very plastic; common very fine roots; common very fine vesicular and tubular pores; 90 percent continuous distinct clay films on faces of peds and rock fragments; 5 percent stones, 25 percent gravel, and 50 percent cobbles; slightly alkaline, pH 7.5 by Hellige-Truog; clear wavy boundary.
- Bt4—32 to 39 inches (81 to 99 cm); brown (7.5YR 5/4) extremely cobbly clay loam, brown (7.5YR 4/4) moist; 38 percent clay; moderate fine and medium subangular blocky structure; moderately hard, friable, very sticky, very plastic; few very fine roots; common very fine vesicular and tubular pores; 90 percent continuous distinct clay films on faces of peds and rock fragments; 5 percent stones, 30 percent gravel, and 50 percent cobbles; moderately alkaline, pH 8.0 by Hellige-Truog; clear smooth boundary.
- Btq—39 to 46 inches (99 to 117 cm); light yellowish brown (10YR 6/4) extremely gravelly sandy clay loam, brown (7.5YR 5/4) moist; 30 percent clay; moderate fine subangular blocky structure; slightly hard, firm, weakly cemented by silica, moderately sticky, moderately plastic; common very fine vesicular and tubular pores; 90 percent continuous distinct clay films on faces of peds and rock fragments; 5 percent stones, 35 percent cobbles, and 40 percent gravel; moderately alkaline, pH 8.0 by Hellige-Truog; abrupt wavy boundary.
- 2Bqm—46 inches (117 cm); indurated duripan; cemented by silica.

Type location: Butte County, California; about 1.5 miles north of Rock Creek Road and 2.4 miles east of Meridian Road, approximately 2,050 feet north and 2,150 feet east of the southwest corner of sec. 9, T. 23 N., R. 1 E.; 39 degrees, 51 minutes, 40 seconds north latitude and 121 degrees, 52 minutes, 22 seconds west longitude; NAD27; USGS Quad: Richardson Springs, California.

Range in Characteristics

Depth to the duripan is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 62 to 68 degrees F (17 to 20 degrees C). The particle-size control section averages 35 to 40 percent clay and 35 to 60 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur between the top of the duripan and 13 inches below the surface of the soil from December through April. Redoximorphic features occur as oxidized iron masses in the A horizon and in the

upper part of the Bt horizon and as iron-manganese masses in the lower part of the Bt horizon and in the Btq horizon. Rock fragments on the surface range from 0 to 5 percent gravel, 0 to 5 percent cobbles, and 0 to 2 percent stones. Some pedons do not have a Btq horizon. Some have a 2Bt horizon.

The A horizon has dry color of 7.5YR 4/3 or 5/3 or 5YR 5/2. Moist color is 7.5YR 3/2 or 3/3 or 5YR 3/2 or 3/3. Texture is loam, gravelly loam, or very gravelly sandy clay loam. The content of clay ranges from 16 to 26 percent. The horizon has 10 to 45 percent gravel and 0 to 10 percent cobbles. Reaction is slightly acid or neutral.

The upper part of the Bt horizon has dry color of 7.5YR 4/3, 5/3, or 6/3 or 5YR 5/3. Moist color is 7.5YR 3/3 or 4/2 or 5YR 3/2 or 3/3. Texture is loam, gravelly loam, cobbly loam, gravelly clay loam, cobbly clay loam, or very gravelly sandy clay loam. The content of clay ranges from 22 to 35 percent. The content of gravel is 10 to 30 percent, and the content of cobbles is 0 to 15 percent. Reaction is slightly acid or neutral.

The lower part of the Bt horizon has dry color of 7.5YR 4/3, 4/4, 5/3, 5/4, 6/3, or 6/4 or 5YR 5/3. Moist color is 7.5YR 3/2, 4/2, 4/3, or 4/4 or 5YR 3/2, 3/3, or 4/3. Texture is gravelly clay loam, very gravelly clay loam, very cobbly clay loam, extremely cobbly clay loam, very gravelly sandy clay loam, extremely gravelly sandy clay loam, very gravelly sandy clay, or very gravelly clay. The content of clay ranges from 30 to 45 percent. The content of gravel is 10 to 70 percent, the content of cobbles is 5 to 60 percent, and the content of stones is 0 to 5 percent. Reaction ranges from neutral to moderately alkaline.

The Btq horizon has dry color of 7.5YR 5/4 or 10YR 6/4. Moist color is 7.5YR 4/3 or 5/4 or 5YR 3/4. Texture is extremely gravelly sandy clay loam, extremely gravelly sandy clay, extremely cobbly sandy clay loam, or extremely cobbly sandy clay. The content of clay ranges from 20 to 40 percent. The horizon has 35 to 70 percent gravel, 30 to 60 percent cobbles, and 0 to 5 percent stones. Reaction ranges from neutral to moderately alkaline.

Walkermine Series

The Walkermine series consists of very shallow or shallow, well drained soils that formed in colluvium and residuum derived from metavolcanic and metasedimentary rocks. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada mountains. Slopes range from 3 to 110 percent. The mean annual precipitation is about 72 inches (1,829 mm), and the mean annual air temperature is about 50 degrees F (10 degrees C).

Taxonomic class: Loamy-skeletal, mixed, active, mesic Lithic Dystrochrepts

Typical Pedon

Walkermine very gravelly loam, on a west-facing slope of 68 percent, under a cover of canyon live oak, California black oak, and bigleaf maple with some white fir, sugar pine, Douglas-fir, ponderosa pine, and incense cedar, at an elevation of 4,500 feet (1,372 m). When described on 10/15/1999, the soil was slightly moist throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 3 cm); slightly decomposed plant material; abrupt smooth boundary.

A—1 to 3 inches (3 to 8 cm); light yellowish brown (10YR 6/4) very gravelly loam, brown (7.5YR 4/2) moist; 22 percent clay; moderate fine granular structure; slightly hard, friable, nonsticky, slightly plastic; common very fine and fine roots; many very fine and fine and common medium vesicular and tubular pores; 15 percent cobbles and 45 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 9.0; clear smooth boundary.

Bt—3 to 12 inches (8 to 30 cm); light brown (7.5YR 6/4) very gravelly loam, brown (7.5YR 4/4) moist; 23 percent clay; moderate fine and medium subangular blocky structure parting to moderate fine granular; moderately hard, friable, nonsticky, slightly plastic; common fine and medium roots; many very fine and fine and common medium vesicular and tubular pores; 90 percent continuous faint clay bridges between sand grains; 20 percent cobbles and 40 percent gravel; moderately acid, pH 6.0 by Hellige-Truog; NaF pH 9.2; abrupt smooth boundary.
R—12 inches (30 cm); indurated metavolcanic bedrock.

Type location: Butte County, California; about 2.85 miles east of Lomo, approximately 1,320 feet north and 900 feet west of the southeast corner of sec. 7, T. 25 N., R. 4 E.; 40 degrees, 2 minutes, 6 seconds north latitude and 121 degrees, 33 minutes, 51 seconds west longitude; NAD83; USGS Quad: Butte Meadows, California.

Range in Characteristics

The depth to lithic bedrock is 4 to 20 inches (10 to 51 cm). The mean annual soil temperature is 47 to 57 degrees F (8 to 14 degrees C). The particle-size control section averages 15 to 27 percent clay and 35 to 80 percent rock fragments, mostly gravel. Mineralogy is mixed. Rock fragments on the surface range from 15 to 75 percent gravel, 0 to 30 percent cobbles, 0 to 30 percent stones, and 0 to 30 percent boulders.

The A horizon has dry color of 10YR 6/2, 6/3, 6/4, or 7/3 or 7.5YR 5/4, 6/3, or 6/4. Moist color is 7.5YR 3/3, 4/2, 4/3, 4/4, or 4/6 or 10YR 4/2 or 4/3. Texture is gravelly loam, very gravelly loam, gravelly sandy loam, very gravelly sandy loam, extremely gravelly sandy loam, or very gravelly fine sandy loam. The content of clay ranges from 12 to 26 percent. The horizon has 20 to 60 percent gravel, 0 to 20 percent cobbles, 0 to 20 percent stones, and 0 to 20 percent boulders. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 7.5YR 5/4, 6/4, 6/6, or 7/4 or 10YR 7/2, 7/3, or 7/4. Moist color is 7.5YR 4/3, 4/4, 4/6, 5/4, or 5/6 or 10YR 4/2, 4/3, 4/4, or 5/4. Texture is very gravelly loam, extremely gravelly loam, very gravelly sandy loam, extremely gravelly sandy loam, extremely cobbly sandy loam, or very gravelly sandy clay loam. The content of clay ranges from 12 to 26 percent. The horizon has 25 to 70 percent gravel, 0 to 40 percent cobbles, 0 to 20 percent stones, and 0 to 20 percent boulders. Reaction ranges from moderately acid to neutral.

Whitecabin Series

The Whitecabin series consists of deep, poorly drained soils that formed in alluvium derived from mixed rock sources. These soils are in flood basins. Slopes are 0 to 1 percent. The mean annual precipitation is about 18 inches (457 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Fine, smectitic, thermic Aquic Haploxererts

Typical Pedon

Whitecabin silty clay, on a slope of 1 percent, under a cover of annual grasses, at an elevation of 101 feet (31 m). When described on 5/10/1995, the soil was slightly moist to a depth of 24 inches (61 cm) and moist from 24 to 53 inches (61 to 135 cm). (Colors are for dry soil unless otherwise noted.)

Ap—0 to 5 inches (0 to 13 cm); light brownish gray (10YR 6/2) silty clay, dark grayish brown (10YR 4/2) moist; 43 percent clay; moderate medium angular blocky structure parting to strong fine granular; extremely hard, firm, slightly sticky, very

plastic; common fine, few very fine, and few medium roots; few very fine tubular pores; common fine irregular brown (7.5YR 4/4) oxidized iron masses; noneffervescent; moderately acid, pH 5.9 by pH meter 1:1 water; abrupt smooth boundary.

- Bss1—5 to 13 inches (13 to 33 cm); light brownish gray (10YR 6/2) silty clay, dark grayish brown (10YR 4/2) moist; 48 percent clay; moderate coarse prismatic structure parting to moderate fine angular blocky; extremely hard, firm, moderately sticky, very plastic; few very fine roots; common very fine tubular pores; few slickensides; noneffervescent; neutral, pH 7.0 by pH meter 1:1 water; gradual smooth boundary.
- Bss2—13 to 26 inches (33 to 66 cm); brown (10YR 5/3) silty clay, dark grayish brown (10YR 4/2) moist; 49 percent clay; moderate coarse prismatic structure parting to moderate fine angular blocky; extremely hard, firm, moderately sticky, very plastic; few very fine roots; common very fine and few fine tubular pores; common slickensides; few fine and medium irregular worm nodules; noneffervescent; moderately alkaline pH 8.0 by pH meter 1:1 water; gradual smooth boundary.
- Bss3—26 to 35 inches (66 to 89 cm); brown (10YR 5/3) silty clay, brown (10YR 4/3) moist; 50 percent clay; moderate medium prismatic structure parting to moderate fine angular blocky; extremely hard, firm, moderately sticky, very plastic; few very fine roots; few very fine tubular pores; few slickensides; common fine dark gray (10YR 4/1) iron depletions and few fine spherical manganese masses; noneffervescent; strongly alkaline, pH 8.6 by pH meter 1:1 water; clear smooth boundary.
- Bkss—35 to 45 inches (89 to 114 cm); yellowish brown (10YR 5/4) silty clay, dark yellowish brown (10YR 4/4) moist; 49 percent clay; moderate medium angular blocky structure; extremely hard, firm, moderately sticky, very plastic; few very fine roots; few very fine tubular pores; few slickensides; common fine spherical black (N 2/0) manganese masses; common fine and medium carbonate threads; noneffervescent; strongly alkaline, pH 8.5 by pH meter 1:1 water; clear wavy boundary.
- Bk—45 to 53 inches (114 to 135 cm); brown (7.5YR 5/4) silty clay, brown (7.5YR 4/4) moist; 46 percent clay; moderate fine subangular blocky structure parting to moderate fine granular; extremely hard, firm, moderately sticky, very plastic; few very fine roots; few very fine tubular pores; common fine and medium carbonate threads; common fine spherical black (N 2/0) manganese masses; noneffervescent; strongly alkaline, pH 8.5 by pH meter 1:1 water; abrupt wavy boundary.
- 2Bkqm1—53 to 63 inches (135 to 160 cm); indurated duripan; very pale brown (10YR 7/4) silt loam, yellowish brown (10YR 5/4) moist; 9 percent clay; massive; common very fine and fine tubular pores; few prominent continuous yellowish red (5YR 4/6) clay films in root channels and/or pores; common fine irregular black (N 2/0) manganese masses; common carbonate threads; noneffervescent; strongly alkaline, pH 9.0 by pH meter 1:1 water; silica- and lime-cemented, indurated capping 0.125 inch thick; roots matted on top of the capping; carbonate pendants on the underside of duripan plates; gradual smooth boundary.
- 2Bkqm2—63 to 72 inches (160 to 183 cm); moderately cemented duripan; very pale brown (10YR 7/4) silt loam, yellowish brown (10YR 5/4) moist; 14 percent clay; massive; moderately cemented; common very fine tubular pores; few prominent continuous yellowish red (5YR 4/6) clay films in root channels and/or pores; common fine carbonate threads and common fine irregular carbonate threads; noneffervescent; strongly alkaline, pH 8.9 by pH meter 1:1 water; 2 percent rounded gravel.

Type location: Butte County, California; about 1.7 miles southeast of Rancho Llano Seco headquarters, approximately 8,500 feet west of the Mt. Diablo meridian and

14,500 feet south of the boundary between T. 20 N. and 21 N.; in an unsectionized area in the Llano Seco Land Grant; 39 degrees, 34 minutes, 57 seconds north latitude and 121 degrees, 56 minutes, 48 seconds west longitude; NAD27; USGS Quad: Llano Seco, California.

Range in Characteristics

Depth to the duripan generally ranges from 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry from about June to October 15 (120 to 125 days). The particle-size control section averages 45 to 55 percent clay. Mineralogy is dominantly smectitic. The depth to carbonates ranges from 6 to 39 inches (15 to 99 cm). The content of organic matter is 1 to 2 percent from a depth of 0 to 5 inches (0 to 13 cm) and 0.1 to 0.9 percent from 5 to 72 inches (13 to 183 cm). By ammonium acetate, base saturation ranges from 96 to 100 percent throughout the profile. Reversible, surface-initiated cracks 0.5 inch to 3 inches (1.27 to 8 cm) or more wide extend to a depth of 25 to 39 inches (64 to 99 cm) or more. They are open from May 15 to October 15 (about 150 days) when the soils are not irrigated and are closed the rest of the year. Slickensides occur in the Bss and Bkss horizons, at a depth of 5 to 45 inches (13 to 114 cm). A fluctuating water table can occur from the top of the duripan to 26 inches (66 cm) below the surface of the soil from December through April.

Some pedons have overwash of silt loam that ranges from 4 to 15 inches (10 to 38 cm) in thickness and has 18 to 27 percent clay or overwash of silty clay loam that ranges from 4 to 20 inches (10 to 51 cm) in thickness and has 27 to 40 percent clay. Depth to the duripan ranges from 40 to 81 inches (102 to 206 cm), depending on the thickness of the overwash.

The A horizon has dry color of 10YR 4/1, 4/2, 5/2, or 6/3. Moist color is 10YR 3/1, 3/2, 3/3, or 4/2. Texture is silty clay or clay. The content of clay ranges from 40 to 55 percent. The content of exchangeable sodium is 0 to 1 percent. SAR is 0 to 1. Redoximorphic features, such as oxidized iron masses with color of 7.5YR 4/4 or 4/6 and manganese masses with color of N 2/0, may occur in this horizon. Reaction ranges from moderately acid to neutral.

The Bss horizon has dry color of 10YR 5/2, 5/3, 5/4, 6/2, or 6/4. Moist color is 10YR 3/2, 3/3, 3/4, 4/2, 4/3, or 4/4 or 7.5YR 5/4. Texture is clay or silty clay. The content of clay ranges from 45 to 55 percent. The content of exchangeable sodium is 3 to 10 percent. SAR is 1 to 6. Redoximorphic features, such as manganese masses with color of N 2/0 and iron depletions with color of 10YR 4/1, occur in this horizon. Reaction ranges from slightly acid to strongly alkaline.

The Bkss horizon has dry color of 10YR 5/4, 6/3, or 7/4 or 7.5YR 5/4. Moist color is 10YR 3/3, 4/3, or 4/4 or 7.5YR 4/4 or 4/6. Texture is clay, silty clay, or clay loam. The content of clay ranges from 35 to 55 percent. The content of exchangeable sodium is 10 to 12 percent. SAR is 1 to 9. The horizon is noneffervescent to strongly effervescent. Calcium carbonate occurs as soft masses or concretions. The content of calcium carbonate is 0 to 1 percent. Redoximorphic features, such as manganese masses with color of N 2/0, occur in this horizon. Reaction ranges from slightly alkaline to strongly alkaline.

The Bk or 2Bk horizon has dry color of 10YR 6/4 or 7.5YR 5/4. Moist color is 10YR 4/4 or 7.5YR 4/4. Texture is clay, silty clay, or clay loam. The content of clay ranges from 35 to 55 percent. The content of exchangeable sodium is 10 to 12 percent. SAR is 1 to 8. The horizon is noneffervescent to strongly effervescent. Calcium carbonate occurs as soft masses or concretions. The content of calcium carbonate is 0 to 1 percent. The horizon has redoximorphic features, such as manganese masses with color of N 2/0. Reaction is moderately alkaline or strongly alkaline.

Wickscorner Series

The Wickscorner series consists of very deep, moderately well drained soils that formed in alluvium derived from basalt. These soils are on alluvial fans on Table Mountain. Slopes range from 2 to 10 percent. The mean annual precipitation is about 28 inches (711 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Ultic Palexeralfs

Typical Pedon

Wickscorner loam, on a west-facing slope of 5 percent, under a cover of annual grasses, at an elevation of 418 feet (127 m). When described on 4/17/2001, the soil was dry from 0 to 8 inches (0 to 20 cm) and slightly moist from 8 to 84 inches (20 to 213 cm). (Colors are for dry soil unless otherwise noted.)

- A—0 to 2 inches (0 to 5 cm); brown (7.5YR 4/3) loam, dark brown (7.5YR 3/3) moist; 20 percent clay; weak fine and medium subangular blocky structure parting to moderate fine granular; hard, firm, slightly sticky, slightly plastic; many very fine and fine and common medium roots; many very fine irregular pores; 10 percent rounded basalt gravel; moderately acid, pH 6.0 by Hellige-Truog; clear smooth boundary.
- Bt1—2 to 8 inches (5 to 20 cm); brown (7.5YR 4/3) loam, dark reddish brown (5YR 3/3) moist; 26 percent clay; moderate medium and coarse subangular blocky structure parting to moderate medium platy; very hard, very firm, slightly sticky, slightly plastic; many very fine and fine roots; few fine and medium tubular pores; 30 percent discontinuous distinct clay films on surfaces along pores; 2 percent rounded quartz gravel and 10 percent rounded basalt gravel; moderately acid, pH 5.8 by Hellige-Truog; gradual smooth boundary.
- Bt2—8 to 22 inches (20 to 56 cm); brown (7.5YR 4/3) gravelly clay loam, dark reddish brown (5YR 3/3) moist; 30 percent clay; moderate medium and coarse subangular blocky structure; hard, firm, moderately sticky, moderately plastic; common very fine and fine roots; common fine and medium tubular pores; 40 percent discontinuous distinct clay films on faces of peds; 32 percent rounded basalt gravel; moderately acid, pH 6.0 by Hellige-Truog; clear wavy boundary.
- 2Bt3—22 to 38 inches (56 to 97 cm); brown (7.5YR 4/3) very gravelly clay loam, dark reddish brown (5YR 3/3) moist; 36 percent clay; moderate fine and medium subangular blocky structure; hard, firm, very sticky, very plastic; common very fine and fine roots; common very fine and fine and few medium tubular pores; 50 percent continuous distinct clay films on faces of peds; 3 percent rounded quartz gravel and 35 percent rounded basalt gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt wavy boundary.
- 2Bt4—38 to 59 inches (97 to 150 cm); brown (7.5YR 5/4) very gravelly clay, dark reddish brown (5YR 3/3) moist; 42 percent clay; moderate coarse subangular blocky structure; hard, firm, very sticky, very plastic; few very fine and fine roots; few fine and medium tubular pores; 50 percent continuous distinct clay films on faces of peds; 5 percent rounded quartz gravel and 45 percent rounded basalt gravel; slightly acid, pH 6.3 by Hellige-Truog; abrupt wavy boundary.
- 3Bt5—59 to 72 inches (150 to 183 cm); brown (10YR 4/3) extremely gravelly sandy clay, dark brown (10YR 3/3) moist; 48 percent clay; moderate fine and medium subangular blocky structure; noncemented; very hard, firm, very sticky, very plastic; few very fine roots on top of the horizon; few fine tubular pores; 30 percent discontinuous distinct clay films on faces of peds; 30 percent fine and medium iron depletions and 20 percent very fine manganese masses; 3 percent rounded

quartz gravel and 60 percent rounded basalt gravel with soft, weathered rinds; slightly acid, pH 6.3 by Hellige-Truog; clear wavy boundary.

3Bt6—72 to 84 inches (183 to 213 cm); yellowish brown (10YR 5/4) extremely gravelly sandy clay, brown (10YR 4/3) moist; 40 percent clay; moderate fine and medium subangular blocky structure; noncemented; very hard, firm, very sticky, very plastic; few fine tubular pores; 35 percent discontinuous clay films on faces of peds; 10 percent very fine manganese masses and 30 percent fine and medium iron depletions; 3 percent rounded quartz gravel and 60 percent rounded basalt gravel with soft, weathered rinds; slightly acid, pH 6.3 by Hellige-Truog.

Type location: Butte County, California; about 7.4 miles northwest of Oroville, approximately 2,800 feet west and 1,100 feet north of the southeast corner of sec. 2, T. 20 N., R. 3 E.; 39 degrees, 36 minutes, 54 seconds north latitude and 121 degrees, 36 minutes, 25 seconds west longitude; NAD83; USGS Quad: Oroville, California.

Range in Characteristics

Depth to the duripan is 60 to 80 inches (152 to 203 cm) or more. The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry in all parts from June through October 15 (about 135 days). The particle-size control section averages 27 to 35 percent clay and 20 to 35 percent rock fragments, mostly gravel. Below the control section, the content of clay is 35 to 55 percent and the content of rock fragments is 35 to 80 percent. Mineralogy is mixed. By sum of cations, base saturation ranges from 50 to 75 percent to a depth of 72 inches (183 cm). A fluctuating water table can occur at a depth of 50 to 84 inches (127 to 213 cm) or more from December through April. Redoximorphic features, such as manganese masses with color of N 2/0, occur in the 2Bt and 3Bt horizons. Rock fragments on the surface range from 0 to 5 percent gravel and 0 to 5 percent cobbles.

The A horizon has dry color of 7.5YR 4/3 or 5/3 or 10YR 4/3. Moist color is 7.5YR 2/2, 3/2, 3/3, or 4/3 or 10YR 3/3. Texture is loam or fine sandy loam. The content of clay ranges from 15 to 20 percent. The horizon has 0 to 10 percent gravel, mostly basalt and chert in small amounts. The content of organic matter is 2 to 6 percent. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 7.5YR 4/3, 5/3, or 5/4 or 10YR 5/3. Moist color is 5YR 3/3, 3/4, or 4/3; 7.5YR 3/3, 3/4, or 4/3; or 10YR 3/4. Texture is loam, clay loam, gravelly loam, gravelly clay loam, gravelly sandy clay loam, or very gravelly loam. The content of clay ranges from 20 to 33 percent. The horizon has 5 to 35 percent gravel and 0 to 5 percent cobbles. The content of organic matter is 0.5 to 2 percent. Reaction ranges from very strongly acid to moderately acid.

The 2Bt horizon has dry color of 7.5YR 5/3 or 5/4, 5YR 4/4 or 5/4, or 10YR 5/3. Moist color is 5YR 3/3, 3/4, 4/3, or 4/4 or 7.5YR 3/3, 3/4, or 4/3. Texture is very gravelly clay loam, very gravelly clay, very gravelly sandy clay, gravelly clay, extremely gravelly clay loam, or very gravelly sandy clay loam. The content of clay ranges from 28 to 45 percent. The horizon has 2 to 60 percent gravel and 0 to 10 percent cobbles. The content of organic matter is 0.5 to 1 percent. Reaction ranges from strongly acid to neutral.

The 3Bt horizon has dry color of 10YR 4/3 or 5/4, 7.5YR 5/3 or 5/4, or 5YR 4/3, 4/4, 5/4, or 5/6. Moist color is 10YR 3/3, 3/4, or 4/3; 7.5YR 3/4, 4/4, or 4/3; or 5YR 3/3, 3/4, 4/3, or 4/4. Texture is extremely gravelly sandy clay, extremely gravelly clay, extremely gravelly clay loam, very gravelly sandy clay, or very gravelly clay. The content of clay ranges from 35 to 55 percent. The horizon has 35 to 65 percent gravel, 0 to 45 percent cobbles, and 0 to 2 percent stones. The content of organic matter is 0.2 to 0.8 percent. Reaction ranges from strongly acid to neutral. The horizon is noncemented or extremely weakly cemented.

Wilsoncreek Series

The Wilsoncreek series consists of very deep, moderately well drained soils that formed in alluvium derived from mixed rock sources. These soils are on bars on flood plains. Slopes range from 0 to 2 percent. The mean annual precipitation is about 22 inches (559 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine-silty, mixed, superactive, thermic Cumulic Haploxerolls

Typical Pedon

Wilsoncreek loam, on a west-facing slope of less than 1 percent, under a cover of annual grasses and valley oak, at an elevation of 85 feet (26 m). When described on 5/16/1992, the soil was dry to a depth of 7 inches (18 cm) and moist from 7 to 60 inches (18 to 152 cm). (Colors are for dry soil unless otherwise noted.)

- Ap—0 to 7 inches (0 to 18 cm); yellowish brown (10YR 5/4) loam, very dark grayish brown (10YR 3/2) moist; 22 percent clay; strong fine subangular blocky structure parting to strong fine granular; loose, very friable, slightly sticky, slightly plastic; few fine and many very fine roots; common fine irregular pores; 5 percent fine distinct and prominent dark brown (7.5YR 3/4 moist) and strong brown (7.5YR 4/6 moist) oxidized iron masses; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.
- A1—7 to 14 inches (18 to 36 cm); yellowish brown (10YR 5/4) loam, dark brown (10YR 3/3) moist; 13 percent clay; moderate fine and medium prismatic structure parting to medium and coarse subangular blocky; slightly hard, very friable, slightly sticky, slightly plastic; few fine and common very fine roots; few very fine tubular pores; 5 percent fine prominent strong brown (7.5YR 5/6 moist) and reddish brown (5YR 4/4 moist) oxidized iron masses; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.
- A2—14 to 25 inches (36 to 64 cm); yellowish brown (10YR 5/4) loam, dark brown (10YR 3/3) moist; 17 percent clay; moderate fine and medium prismatic structure parting to medium and coarse subangular blocky; slightly hard, very friable, slightly sticky, slightly plastic; few fine and common very fine roots; few very fine tubular pores; 1 percent fine faint strong brown and 5 percent fine distinct strong brown (7.5YR 5/6 moist) and brown (7.5YR 4/4 moist) oxidized iron masses; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.
- A3—25 to 34 inches (64 to 86 cm); dark yellowish brown (10YR 4/4) loam, dark brown (7.5YR 3/3) and brown (7.5YR 4/3) moist; 20 percent clay; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; few very fine and fine roots; few very fine tubular pores; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.
- Bw1—34 to 44 inches (86 to 112 cm); brown (7.5YR 4/4) loam, brown (7.5YR 4/3) and dark brown (7.5YR 3/3) moist; 20 percent clay; moderate medium and coarse prismatic structure parting to fine and medium subangular blocky; slightly hard, very friable, slightly sticky, slightly plastic; few very fine roots; few very fine tubular pores; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.
- Bw2—44 to 60 inches (112 to 152 cm); brown (7.5YR 4/4) loam, dark brown (7.5YR 3/3) moist; 18 percent clay; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; few very fine roots; few very fine tubular pores; 1 percent fine faint and distinct yellowish brown (10YR 5/4 moist) and dark yellowish brown (10YR 3/4 moist) oxidized iron masses; slightly alkaline, pH 7.5 by Hellige-Truog.

Type location: Butte County, California; about 2.0 miles southwest of Honcut, approximately 2,800 feet south and 300 feet west of the northeast corner of sec. 19,

T. 17 N., R. 4 E.; 39 degrees, 18 minutes, 49 seconds north latitude and 121 degrees, 33 minutes, 28 seconds west longitude; NAD27; USGS Quad: Honcut, California.

Range in Characteristics

The thickness of the solum is more than 60 inches (152 cm). The mean annual soil temperature is 61 to 65 degrees F (16 to 18 degrees C). The soil moisture control section is dry in all parts from about May 15 to October 31 (about 165 days) The particle-size control section averages 18 to 27 percent clay. Mineralogy is mixed. A fluctuating water table can occur at a depth of 36 to 60 inches (91 to 152 cm) or more from December through April. Some pedons have a C horizon.

The Ap horizon has dry color of 10YR 4/2, 4/3, 5/3, or 5/4 or 7.5YR 3/3. Moist color is 10YR 3/2 or 3/3 or 7.5YR 3/3. Texture is loam or silt loam. The content of clay ranges from 13 to 18 percent. The content of organic matter is 2 to 3 percent. By sum of cations, base saturation ranges from 75 to 85 percent. Redoximorphic features, such as oxidized iron masses with moist color of 10YR 4/6 or 5/6 or 7.5YR 3/4, 4/4, or 4/6, occur in this horizon. Reaction is slightly acid or neutral.

The A horizon has dry color of 10YR 4/3, 4/4, 5/3, or 5/4. Moist color is 10YR 3/2 or 3/3. Texture is loam or silt loam. The content of clay ranges from 13 to 27 percent. The content of organic matter is 1 to 3 percent. By sum of cations, base saturation ranges from 80 to 90 percent. Redoximorphic features, such as oxidized iron masses with moist color of 10YR 4/2, 5/2, or 5/3 or 7.5YR 3/2, 4/3, or 4/4, occur in this horizon. Reaction ranges from slightly acid to slightly alkaline.

The Bw horizon has dry color of 10YR 4/3 or 4/4 or 7.5YR 4/4. Moist color is 10YR 4/3 or 4/4 or 7.5YR 3/3 or 3/4. Texture is loam or silt loam. The content of clay ranges from 15 to 27 percent. The content of organic matter is 0.5 to 1 percent. By sum of cations, base saturation ranges from 85 to 95 percent. Redoximorphic features, such as oxidized iron masses with moist color of 10YR 4/6 or 5/6 or 7.5YR 3/4, 4/4, or 4/6, occur in this horizon. Reaction is neutral or slightly alkaline.

Woodleaf Series

The Woodleaf series consists of moderately deep, well drained soils that formed in material weathered from ultramafic rocks with a large amount of serpentine minerals. These soils are on ridgetops and side slopes on ultramafic Sierra Nevada mountains. Slopes range from 3 to 30 percent. The mean annual precipitation is about 65 inches (1,651 mm), and the mean annual air temperature is about 54 degrees F (12 degrees C).

Taxonomic class: Clayey-skeletal, magnesian, mesic Ultic Haploxeralfs

Typical Pedon

Woodleaf gravelly loam, at an elevation of 3,200 feet (975 m). (Colors are for dry soil unless otherwise noted.)

Oi—0.5 inch to 0 (1 cm 0); partially decomposed twigs and needles.

A1—0 to 4 inches (0 to 10 cm); dark yellowish brown (10YR 4/4) gravelly loam, dark yellowish brown (10YR 3/4) moist; moderate fine granular structure; slightly hard, very friable, slightly sticky, slightly plastic; common very fine to medium roots; many very fine and fine irregular and common very fine tubular pores; 20 percent gravel, 5 percent cobbles, and 1 percent stones; moderately acid; clear smooth boundary.

A2—4 to 9 inches (10 to 23 cm); strong brown (7.5YR 4/6) gravelly loam, dark reddish brown (5YR 3/4) moist; moderate fine granular structure; slightly hard, very friable, sticky, slightly plastic; common very fine to coarse roots; many very fine and fine irregular and common very fine and fine tubular pores; 25 percent

gravel, 5 percent cobbles, and 1 percent stones; moderately acid; clear wavy boundary.

2Bt1—9 to 17 inches (23 to 43 cm); yellowish red (5YR 4/6) very gravelly clay loam, dark reddish brown (5YR 3/3) moist; weak medium subangular blocky structure; hard, friable, sticky, plastic; many fine and medium and common very fine and coarse roots; many very fine to medium tubular pores; common thin clay films on faces of peds and in pores; 30 percent gravel, 15 percent cobbles, and 2 percent stones; moderately acid; clear wavy boundary.

2Bt2—17 to 28 inches (43 to 71 cm); brown (7.5YR 4/4) very gravelly clay, dark brown (7.5YR 3/4) moist; strong medium subangular blocky structure; very hard, firm, sticky, plastic; common medium and coarse roots; few very fine and fine tubular pores; many thick clay films on faces of peds; 30 percent gravel, 15 percent cobbles, and 2 percent stones; slightly acid; abrupt wavy boundary.

R—28 inches (71 cm); serpentine bedrock.

Type location: Yuba County, California; about 1 mile south of Woodleaf, approximately 3,000 feet south and 1,300 feet west of the northeast corner of sec. 16, T. 19 N., R. 7 E.; 39 degrees, 30 minutes, 15 seconds north latitude and 121 degrees, 11 minutes, 18 seconds west longitude; NAD27; USGS Quad: Clipper Mills, California.

Range in Characteristics

The depth to lithic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 47 to 54 degrees F (8 to 12 degrees C). The soil moisture control section is dry in all parts from about July 15 to September 15 (about 65 days). Mineralogy is magnesian. The content of organic matter is 2 to 3 percent to a depth of 9 inches (23 cm). Base saturation is 50 to 75 percent.

The A horizon has dry color of 10YR 5/4, 4/4, or 4/3 or 7.5YR 4/6. Moist color is 10YR 3/3 or 3/4, 7.5YR 3/4, or 5YR 3/4. Texture is gravelly loam. The content of clay ranges from 18 to 27 percent. The content of rock fragments ranges from 15 to 35 percent, including 10 to 30 percent gravel, 5 to 15 percent cobbles, and 0 to 3 percent stones. Reaction is moderately acid or slightly acid.

The 2Bt horizon has dry color of 10YR 6/4 or 6/6; 7.5YR 4/3, 4/4, or 4/6; or 5YR 4/6. Moist color is 10YR 4/4, 7.5YR 3/4, or 5YR 3/3 or 3/4. Texture is very gravelly clay loam or very gravelly clay. The content of clay ranges from 35 to 60 percent. The content of rock fragments ranges from 35 to 55 percent, including 25 to 40 percent gravel, 10 to 25 percent cobbles, and 0 to 3 percent stones. Reaction ranges from moderately acid to neutral. The ratio of calcium to magnesium is 1.5 or more. It generally increases with increasing depth.

Xerofluvents

Xerofluvents consist of very deep, somewhat poorly drained or moderately well drained soils that formed in alluvium derived from mixed rock sources. These soils are on bars and in channels on flood plains along tributaries of the Sacramento River. Slopes range from 0 to 4 percent. The mean annual precipitation is about 29 inches (737 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Typic Xerofluvents

Typical Pedon

Xerofluvents sandy loam, on a north-facing slope of 4 percent, under a cover of foothill pine, California sycamore, redbud, Pacific poison oak, ripgut brome, vetch, yellow starthistle, and mugwort, at an elevation of 300 feet (91 m). When described

on 4/13/1999, the soil was moist throughout. (Colors are for dry soil unless otherwise noted.)

- A—0 to 6 inches (0 to 15 cm); brown (10YR 5/3) sandy loam, brown (10YR 4/3) moist; 6 percent clay; single grain; loose, nonsticky, nonplastic; many very fine and fine and common medium roots; many very fine and fine interstitial and tubular pores; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.
- C1—6 to 14 inches (15 to 36 cm); brown (10YR 5/3) sandy loam, brown (10YR 4/3) moist; 4 percent clay; single grain; loose, nonsticky, nonplastic; many very fine to medium roots; many very fine interstitial pores; neutral, pH 7.2 by Hellige-Truog; gradual smooth boundary.
- C2—14 to 26 inches (36 to 66 cm); pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; 2 percent clay; single grain; loose, nonsticky, nonplastic; common very fine to medium roots; many very fine interstitial pores; neutral, pH 7.2 by Hellige-Truog; gradual smooth boundary.
- C3—26 to 37 inches (66 to 94 cm); pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; 5 percent clay; single grain; loose, nonsticky, nonplastic; common very fine to medium and few coarse roots; many very fine interstitial pores; slightly alkaline, pH 7.5 by Hellige-Truog; clear smooth boundary.
- Ab—37 to 43 inches (94 to 109 cm); brown (10YR 5/3) sandy loam, very dark grayish brown (10YR 3/2) moist; 10 percent clay; weak medium subangular blocky structure; loose, nonsticky, nonplastic; common very fine to coarse roots; many very fine interstitial pores; slightly alkaline, pH 7.5 by Hellige-Truog; clear smooth boundary.
- C4—43 to 47 inches (109 to 119 cm); pale brown (10YR 6/3) loamy sand, brown (10YR 4/3) moist; 1 percent clay; single grain; loose, nonsticky, nonplastic; common very fine to medium roots; many very fine interstitial pores; moderately alkaline, pH 8.0 by Hellige-Truog; clear smooth boundary.
- C5—47 to 54 inches (119 to 137 cm); pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; 3 percent clay; single grain; loose, nonsticky, nonplastic; common very fine to medium roots; many very fine interstitial pores; moderately alkaline, pH 8.0 by Hellige-Truog; gradual smooth boundary.
- C6—54 to 72 inches (137 to 183 cm); pale brown (10YR 6/3) loamy sand, brown (10YR 4/3) moist; 2 percent clay; single grain; loose, nonsticky, nonplastic; common very fine to medium roots; many very fine interstitial pores; moderately alkaline, pH 8.0 by Hellige-Truog; gradual smooth boundary.
- C7—72 to 80 inches (183 to 203 cm); pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; 4 percent clay; single grain; loose, nonsticky, nonplastic; common very fine to medium roots; many very fine interstitial pores; moderately alkaline, pH 8.0 by Hellige-Truog.

Type location: Butte County, California; about 1.1 miles east of Horseshoe Lake, approximately 900 feet north and 2,450 feet east of the northwest corner of sec. 16, T. 22 N., R. 2 E.; in an unsectionized area in the Arroyo Chico Land Grant; 39 degrees, 46 minutes, 21 seconds north latitude and 121 degrees, 45 minutes, 35 seconds west longitude; NAD83; USGS Quad: Richardson Springs, California.

Range in Characteristics

The depth to bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 48 to 64 degrees F (9 to 18 degrees C). The soil moisture control section is dry in all parts from about May to October (about 180 days). The particle-size control section averages 2 to 8 percent clay and 0 to 65 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. A fluctuating water table can occur at a depth of 28 to 80 inches (71 to 203 cm) throughout the year. Redoximorphic features, such as oxidized iron masses with color of 7.5YR 5/6, occur in the C

horizon. Rock fragments on the surface range from 0 to 75 percent gravel, 0 to 40 percent cobbles, and 0 to 5 percent stones.

The A horizon has dry color of 7.5YR 6/2 or 6/3 or 10YR 5/3. Moist color is 7.5YR 4/2 or 4/3 or 10YR 4/3. Texture is sandy loam, gravelly sandy loam, very gravelly sandy loam, extremely gravelly sandy loam, cobbly sandy loam, or very cobbly sandy loam. The content of clay ranges from 2 to 10 percent. The horizon has 0 to 70 percent gravel and 0 to 40 percent cobbles. Reaction is slightly acid or neutral.

The C horizon has dry color of 10YR 5/3 or 6/3 or 7.5YR 5/3, 6/2, or 6/3. Moist color is 10YR 4/2 or 4/3 or 7.5YR 4/2 or 4/3. Texture is sandy loam, loamy sand, sand, coarse sand, or the gravelly, very gravelly, extremely gravelly, or cobbly analogs of those textures. The content of clay ranges from 1 to 8 percent. The horizon has 0 to 80 percent gravel and 0 to 35 percent cobbles. Reaction ranges from neutral to moderately alkaline.

The Ab horizon has dry color of 10YR 5/3 or 6/3. Moist color is 10YR 4/2 or 3/2. Texture is fine sandy loam or sandy loam. The content of clay ranges from 4 to 12 percent. The horizon has 0 to 15 percent gravel and 0 to 15 percent cobbles. Reaction is neutral or slightly alkaline.

Xerorthents, Shallow

Xerorthents, shallow, consist of very shallow or shallow, moderately well drained soils that formed in colluvium, residuum, and alluvium derived from volcanic rocks. These soils are on side slopes in canyons on Cascade foothills. Slopes range from 15 to 50 percent. The mean annual precipitation is about 28 inches (711 cm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Thermic Xerorthents

Typical Pedon

Xerorthents, shallow, gravelly clay loam, on a south-southwest-facing slope of 28 percent, under a cover of yellow starthistle and wild oat, at an elevation of 460 feet (140 m). When described on 11/09/1998, the soil was moist throughout. (Colors are for dry soil unless otherwise noted.)

- A—0 to 2 inches (0 to 5 cm); grayish brown (10YR 5/2) gravelly clay loam, dark grayish brown (10YR 4/2) moist; 31 percent clay; moderate medium subangular blocky structure parting to moderate fine granular; hard, friable, moderately sticky, moderately plastic; common fine and many very fine roots; many very fine to medium irregular and tubular pores; 20 percent gravel; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.
- Bt1—2 to 5 inches (5 to 13 cm); grayish brown (10YR 5/2) gravelly clay loam, dark grayish brown (10YR 4/2) moist; 34 percent clay; moderate medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; common very fine roots; common very fine and fine tubular pores; 40 percent discontinuous faint clay films; 20 percent gravel and 25 percent cobbles; neutral, pH 7.2 by Hellige-Truog; gradual smooth boundary.
- Bt2—5 to 8 inches (13 to 20 cm); grayish brown (10YR 5/2) very cobbly clay loam, dark grayish brown (10YR 4/2) moist; 37 percent clay; moderate medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; common very fine roots; common very fine and fine tubular pores; 60 percent discontinuous faint clay films; 20 percent gravel and 25 percent cobbles; neutral, pH 7.2 by Hellige-Truog; abrupt smooth boundary.
- 2R—8 inches (20 cm); white (10YR 8/1), strongly cemented volcanic sandstone, grayish brown (10YR 5/2) moist; slightly alkaline, pH 7.5 by Hellige-Truog.

Type location: Butte County, California; about 0.25 mile northeast of Horseshoe Lake, approximately 6,900 feet north and 2,200 feet west of the southeast corner of sec. 17, T. 22 N., R. 2 E.; in an unsectionized area in the Arroyo Chico Land Grant; 39 degrees, 46 minutes, 28 seconds north latitude and 121 degrees, 46 minutes, 35 seconds west longitude; NAD83; USGS Quad: Richardson Springs, California.

Range in Characteristics

The depth to lithic or paralithic bedrock is 2 to 20 inches (5 to 51 cm). The mean annual soil temperature is 59 to 67 degrees F (15 to 19 degrees C). The soil moisture control section is dry in all parts from about May to October (about 120 days). The particle-size control section averages 22 to 39 percent clay and 5 to 60 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. Rock fragments on the surface range from 0 to 25 percent gravel, 0 to 20 percent cobbles, 0 to 40 percent stones, and 0 to 40 percent boulders.

The A horizon has dry color of 10YR 5/2, 6/2, 6/3, or 7/2 or 7.5YR 5/4, 6/3, or 6/4. Moist color is 10YR 3/2 or 4/2 or 7.5YR 3/2, 4/2, or 4/3. Texture is loam, gravelly loam, clay loam, gravelly clay loam, very stony clay loam, gravelly sandy clay loam, or sandy loam. The content of clay ranges from 18 to 35 percent. The horizon has 3 to 25 percent gravel, 0 to 10 percent cobbles, and 0 to 20 percent stones. Reaction is neutral or slightly alkaline.

The Bt horizon has dry color of 10YR 4/3, 5/2, 5/3, 6/2, 6/3, or 7/2; 7.5YR 5/3, 6/2, 6/3, or 6/4; or 5YR 5/4. Moist color is 10YR 4/2 or 4/3; 7.5YR 4/2, 4/3, or 4/4; or 5YR 4/2 or 4/3. Texture is gravelly loam, very gravelly loam, clay loam, gravelly clay loam, very gravelly clay loam, very cobbly clay loam, sandy clay loam, gravelly sandy clay loam, very gravelly sandy clay loam, or very gravelly clay. The content of clay ranges from 23 to 42 percent. The horizon has 1 to 40 percent gravel, 0 to 25 percent cobbles, and 0 to 10 percent stones. Reaction ranges from slightly acid to slightly alkaline.

Xerorthents, Tailings

Xerorthents, tailings, consist of very deep, moderately well drained to somewhat excessively drained, anthropogenic (altered) soils that formed in human-transported material deposited by dredges as tailing piles after most of the fine-earth material was washed and removed during gold-dredging operations. These soils are on flood plains and stream terraces. Slopes range from 0 to 50 percent. The mean annual precipitation is about 23 inches (584 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Thermic Xerorthents

Reference Pedon

Xerorthents, tailings, very gravelly sandy loam, on a slope of 3 percent, under a cover of cottonwood, valley oak, blackberry, and annual grasses, at an elevation of 110 feet (33 m). When described 6/28/2001, the soil was dry to a depth of 35 inches (89 cm) and slightly moist below that depth. (Colors are for dry soil unless otherwise noted.)

A—0 to 3 inches (0 to 8 cm); brown (10YR 5/3) very gravelly sandy loam, dark yellowish brown (10YR 3/4) moist; 16 percent clay; weak very fine and fine granular structure; soft, very friable, slightly sticky, slightly plastic; many very fine roots; many very fine irregular pores; 10 percent well rounded cobbles and 45 percent well rounded gravel; strongly acid, pH 5.5 by Hellige-Truog; abrupt smooth boundary.

AC—3 to 8 inches (8 to 20 cm); brown (10YR 5/3) extremely gravelly sandy loam, dark yellowish brown (10YR 3/4) moist; 15 percent clay; moderate thick platy

structure; soft, very friable, slightly sticky, slightly plastic; many very fine roots; many very fine irregular pores; 5 percent well rounded cobbles and 60 percent well rounded gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

- C1—8 to 21 inches (20 to 53 cm); brown (10YR 4/3) loamy sand, dark grayish brown (10YR 4/2) moist; 7 percent clay; moderate thick and medium platy structure; soft, very friable, nonsticky, nonplastic; many very fine roots; many very fine irregular pores; 10 percent well rounded gravel; neutral, pH 6.8 by Hellige-Truog; abrupt smooth boundary.
- C2—21 to 26 inches (53 to 66 cm); brown (10YR 5/3) loamy sand, dark grayish brown (10YR 4/2) moist; 6 percent clay; moderate thick and medium platy structure; soft, very friable, nonsticky, nonplastic; many very fine roots; many very fine irregular pores; 5 percent well rounded gravel; neutral, pH 7.0 by Hellige-Truog; abrupt smooth boundary.
- C3—26 to 35 inches (66 to 89 cm); yellowish brown (10YR 5/4) loamy sand, brown (10YR 4/3) moist; 6 percent clay; moderate thick and medium platy structure; soft, very friable, nonsticky, nonplastic; few very fine roots; many very fine irregular pores; neutral, pH 7.0 by Hellige-Truog; abrupt smooth boundary.
- C4—35 to 48 inches (89 to 122 cm); brown (10YR 4/3) loamy coarse sand, dark grayish brown (10YR 4/2) moist; 5 percent clay; moderate thick and medium platy structure; soft, very friable, nonsticky, nonplastic; common very fine roots; many very fine irregular pores; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.
- C5—48 to 59 inches (122 to 150 cm); brown (10YR 4/3) loamy sand, dark grayish brown (10YR 4/2) moist; 6 percent clay; massive; soft, very friable, nonsticky, nonplastic; few very fine roots; many very fine irregular pores; 1 percent well rounded gravel; neutral, pH 7.0 by Hellige-Truog; abrupt smooth boundary.
- C6—59 to 81 inches (150 to 206 cm); brown (10YR 4/3) loamy sand, dark grayish brown (10YR 4/2) moist; 6 percent clay; massive; soft, very friable, nonsticky, nonplastic; common very fine roots; many very fine irregular pores; 1 percent well rounded gravel; neutral, pH 7.0 by Hellige-Truog.

The reference pedon is an example of the soils within this category. It is not necessarily representative of the soils throughout the survey area. The texture, color, rock fragments, and thickness of layers vary considerably from one area to another.

Type location: Butte County, California; about 1.25 miles northwest of Oak Grove in the Oroville Wildlife Area, approximately 1,900 feet east and 1,500 feet south of the northwest corner of sec. 2, T. 18 N., R. 3 E.; 39 degrees, 26 minutes, 49 seconds north latitude and 121 degrees, 36 minutes, 26 seconds west longitude; NAD83; USGS Quad: Palermo, California.

Range in Characteristics

The depth of the soils is more than 80 inches (203 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The particle-size control section ranges from 3 to 7 percent clay, 70 to 90 percent sand, and 0 to 90 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. A fluctuating water table can occur at a depth of 60 to more than 80 inches (152 to more than 203 cm) from December through July. Rock fragments on the surface range from 5 to 100 percent gravel, 10 to 100 percent cobbles, and 0 to 50 percent stones.

The A horizon has dry color of 10YR 4/2, 5/2, 5/3, or 6/3. Moist color is 10YR 3/2, 3/3, or 3/4. Texture is very gravelly sandy loam, very cobbly sandy loam, extremely cobbly sandy loam, or gravelly very fine sandy loam. The content of clay ranges from 10 to 16 percent. The horizon has 20 to 45 percent gravel and 10 to 60 percent cobbles. Reaction ranges from strongly acid to neutral.

The AC horizon has dry color of 10YR 5/3 or 6/3 or 7.5YR 5/3. Moist color is 10YR 3/4 or 7.5YR 3/4. Texture is extremely gravelly or extremely cobbly sandy loam. The content of clay ranges from 15 to 18 percent. The horizon has 30 to 60 percent gravel and 5 to 60 percent cobbles. Reaction is slightly acid or neutral.

The C horizon has dry color of 10YR 4/3, 5/3, 5/4, 6/3, or 6/4 or 7.5YR 4/3 or 5/3. Moist color is 10YR 4/2 or 4/3 or 7.5YR 3/4. Texture is loamy sand, loamy coarse sand, coarse sand, sand, cobbly loamy sand, very cobbly loamy sand, gravelly loamy sand, extremely gravelly loamy coarse sand, very gravelly loamy sand, or fine sandy loam. The content of clay ranges from 3 to 7 percent. The horizon has 0 to 90 percent gravel and 0 to 35 percent cobbles. Reaction is slightly acid or neutral.

Formation of the Soils

Soil is defined as a natural body comprised of solids (minerals and organic matter), liquid, and gases that occurs on the land surface, occupies space, and is characterized by one or both of the following: Horizons, or layers, that are distinguishable from the initial material as a result of additions, losses, transfers, and transformations of energy and matter and the ability to support rooted plants in a natural environment (Soil Survey Staff, 1999).

Soil also is defined as the unconsolidated mineral or organic material on the immediate surface of the earth that serves as a natural medium for the growth of land plants. This natural medium is subject to and shows the effects of the genetic and environmental factors of climate (including the effects of water and temperature) and of macro- and micro-organisms, as conditioned by relief. These factors act on the parent material over a period of time (Soil Science Society of America, 1997).

Soil genesis is defined as the mode of origin of the soil with special reference to the soil-forming processes or factors responsible for development of the solum, or true soil, from unconsolidated parent material (Soil Science Society of America, 1997).

Factors of Soil Formation

By Dean W. Burkett, Soil Survey Project Leader, Natural Resources Conservation Service.

The five major factors of soil formation are parent material, climate, time, topography, and living organisms. Soils vary across the landscape. The interaction among the five factors influences soil formation and determines the properties of an individual soil at any given place. Each factor influences and modifies the effects of the other four factors. The importance of individual factors differs from place to place, and the interactions are more complex for some soils than for others.

Parent material refers to the rock type, its mineralogical properties, and the mode of material deposition. Climate is essentially temperature and precipitation (amount and type). The influence of time on soil formation extends from the present to hundreds of thousands of years ago. Topography encompasses the steepness, aspect, and complexity of slopes, which play an important role in landscape stability and determine whether soils form in place or are transported by geologic erosion. Living organisms, both macro-organisms, such as animals, humans, birds, reptiles, earthworms, and insects, and micro-organisms, such as bacteria, fungi, nematodes, and protozoa, play an important role in soil formation. Their activities result in physical disturbance and the transformation of energy and matter.

Commonly, one factor dominates the soil-forming process. For example, material weathered from quartz diorite, which is uniform in composition, occurring over a large area will dominate the effects of climate, time, topography, and living organisms during the process of soil formation. No matter how variable the precipitation or slope gradient, the mineralogical properties of the parent material will determine soil properties.

In another example, climatic factors, such as high rainfall and warm temperatures, can dominate soil formation across a range of parent materials on complex slopes and

aspects with different plant communities. These factors form uniform soil properties despite the other soil-forming factors.

Parent Material

Parent material provides a physical foundation and is described according to the mode of deposition and the type and origin of rock or material that forms into soil. Parent material is grouped on the basis of the mode of deposition. The groups include residuum, which is material or bedrock that has weathered in place; alluvium, which has been transported and deposited by water; colluvium, which has been moved downslope by the force of gravity; eolian material, which has been transported and deposited by wind; and glacial drift, which has been transported by glaciers.

Parent materials may be grouped according to their point of origin. This survey area has three geomorphic provinces—the Great Valley, the Cascade Range, and the Sierra Nevada. These provinces are divided into 15 major geologic formations, which are subdivided into 32 geologic map units (Saucedo and Wagner, 1992). Rocks and sediments in the 32 geologic map units range in age from recent to approximately 415 million years old. Geologic map units help soil scientists to better understand relationships between the type and source of various parent materials.

In the Great Valley geomorphic province, the soils formed primarily in alluvium. This alluvium consists of both mixed rocks and sediments carried and deposited by creeks and rivers originating in the foothills and mountains of the Coast, Cascade, and Sierra Nevada Ranges.

In the Cascade Range, the soils formed in colluvium, eolian material, volcanic ash, and residuum weathered from rocks. The types of rocks include lava flows of extrusive igneous rocks, such as basalt and andesite; mixtures of volcanic ash and rocks that became cemented to form mudflow breccia; and tephra, a mixture of volcanic ash and rocks ejected during volcanic eruptions.

In the Sierra Nevada, the soils formed in colluvium, residuum, some alluvium, and some lava flows and tephra from volcanic materials. The rock types are quite variable, having originated from intrusive igneous rocks, such as quartz diorite, diorite, gabbro, or trondhjemite; both marine and nonmarine sedimentary rocks, such as sandstone, conglomerate, claystone, and glacial till; metamorphic rocks, including metasediments, metavolcanic rocks, metadiorite, green schist, and ultramafic rocks, such as serpentine; and extrusive igneous rocks, such as basalt, andesite, and pyroclastic mudflows.

At high elevations in both the Cascade and Sierra Nevada Ranges, the soils formed in glacial drift composed of quartz diorite, andesite, and basalt.

The pedogenic transformation of parent material into soil often begins as exposed rock is subject to various mechanical forces, such as heating and cooling, especially freezing and thawing, the growth of plant roots, precipitation, wind, and ice. These mechanical forces cause the disintegration of rocks, which are broken down into smaller and smaller sizes, eventually becoming sediment. With each decrease in particle size, surface area increases, allowing chemical transformations to break down the rocks concurrently with the mechanical forces.

The rate of physical and chemical breakdown varies by rock type because of differences in hardness, mineralogy, grain size, and porosity. Generally, soft bedrock, such as sandstone, weathers more quickly than hard bedrock, such as gabbro, under similar climatic conditions. Climatic factors also influence the rate of weathering. Generally, warm (not hot) temperatures along with high amounts of rainfall, which increase the activity of living organisms, weather rock and soil material much more quickly than cold temperatures and precipitation that falls mainly as snow.

The products of weathering may take many paths before becoming soil. They may be carried away by water and deposited many miles from their point of origin, or they may remain in place for thousands to millions of years.

Climate

Temperature and precipitation greatly influence weathering rates and the development of soil properties.

Temperature plays an important role in biologic activity and chemical transformations. Soil temperature influences organism growth and function, which drive the transformations and translocations of weathered products and overall development. During seasonal periods with either very warm or cold temperatures, soil-forming processes slow down. A soil temperature of 41 degrees F (5 degrees C) is considered biologic zero (the temperature of negligible growth and function for locally adapted plants). Growth and function cease at 32 degrees F (0 degrees C).

Soil temperature monitoring at a depth of 20 inches (50 centimeters) was completed during the survey to establish soil temperature regime boundaries. Three soil temperature regimes were observed within the survey area—thermic, mesic, and frigid. A thermic soil temperature regime has a mean annual soil temperature (MAST) between 59 and 71 degrees F (15 and 22 degrees C) and generally occurs at elevations between 55 and 2,000 feet (16 and 610 meters). A mesic soil temperature regime has a MAST between 47 and 59 degrees F (8 and 15 degrees C) and generally occurs at elevations between 2,000 and 4,800 feet (610 and 1,463 meters). Mesic conditions extend down to an elevation of 500 feet (152 meters) in canyons and on northeast-facing slopes. A frigid soil temperature regime has a MAST of less than 47 degrees F (8 degrees C) and generally occurs at elevations between 4,800 and 6,115 feet (1,463 and 1,864 meters). Frigid conditions extend down to an elevation of 3,320 feet (1,012 meters) in canyons and on northeast-facing slopes.

The quantity and form of precipitation influence soil formation physically through the translocation of clay and salts through the soil profile and biologically through organism function and the transformation of energy and matter. Rainfall infiltrates the soil surface and percolates downward through pores, cracks, and voids in the profile, commonly moving clay, nutrients (cations), and humic acids. In this survey area, the amount of precipitation generally ranges from 18 inches (457 millimeters) in the Sacramento Valley to more than 80 inches (2,032 millimeters) in the mountains (fig. 2). This variability occurs over a distance of only 50 miles (80 kilometers). It illustrates a strong “orographic effect” produced by the prevailing weather pattern across the survey area. With increasing elevation from west to east, the air becomes cooler as it rises up foothill and mountain slopes, resulting in increased precipitation.

Snowfall is common at an elevation of about 3,000 feet (914 meters) and occasionally occurs down to an elevation of about 1,000 feet (305 meters). At an elevation of about 4,000 feet (1,219 meters), snow becomes the dominant form of precipitation during the winter months.

Areas primarily receiving high amounts of rainfall tend to develop strongly expressed soil profiles with distinct horizons, if given enough time, compared to areas primarily receiving snow.

Two soil moisture regimes, xeric and aquic, occur in this survey area. The most prevalent one is the xeric moisture regime, which is characterized by cool, moist winters and warm, dry summers. In normal years, the soil moisture control section is dry for 45 or more consecutive days in the 4 months following the summer solstice and moist in all parts for 45 or more consecutive days following the winter solstice.

Soils with an aquic moisture regime are saturated by water for at least enough time to develop anaerobic or reducing conditions. As the soils become saturated, pore

space is displaced by water and dissolved oxygen is depleted. In the absence of oxygen, anaerobic micro-organisms first utilize manganese and then iron as an energy source and manganese and iron are reduced. Reduced manganese and iron are soluble and are carried downward through the soils by water. Water tables rise and move downward in response to the amount and timing of precipitation. When the water table moves downward, air reenters pores and manganese and iron become oxidized and precipitate in the form of concentrations. This seasonal flux is called oxidation-reduction. Redoximorphic features left in the soil are evidence of this process.

Time

Time is needed for the interaction of the other soil-forming factors to develop soils. The parent materials in this survey area range in age from recent to more than 400 million years old. Long periods of time are required for the development of soil horizons and the formation of soils from the parent material. Some soil horizons can form in a matter of several hundred years or less, but changing the parent material into a fully developed soil can take thousands or hundreds of thousands of years.

Estimating the age of a soil is difficult and is not absolute. Present-day soils provide clues to changing environmental conditions, such as climate change, volcanic activity, and geologic uplift. Even after a soil has formed, it is subject to the influence of the other factors of soil formation. For example, soils in valleys may have undergone cyclic periods of deposition, development, and erosion over long periods of time. Some landscapes are forming, others are degrading, and many are forming and degrading simultaneously.

The importance of time to the process of soil formation is related to periods of stability and instability. Soils on young landscapes, such as flood plains where deposition is active, have not had sufficient time to develop surface horizons with an accumulation of organic matter or to develop horizons that have been altered because of instability. Soils on fan terraces, foothills, and mountains have been stable for long enough periods for the formation of well expressed horizons of illuviated clay. Soils that formed on alluvial fans have developed surface horizons with an accumulation of organic matter because of the associated grass-dominated vegetation. Subsurface layers have been only minimally altered because of the young age of the sediments.

Topography

Topography, or the shape of the landscape, affects soil formation through its influence on climate, precipitation, temperature, and living organisms, specifically, the vegetative cover. Topography includes elevation, slope, aspect, and landscape position.

Elevation influences soil formation through its effect on precipitation and temperature. As elevation increases, air and soil temperatures decrease and the amount of precipitation increases. The elevation in this survey area ranges from 55 to 6,115 feet (17 to 1,864 meters). Landscape position and slope influence soil formation by affecting the movement and retention of water in the soil. The aspect of a slope influences soil formation by modifying soil climate.

Slope influences drainage, runoff, and erosion. The slope of valley landscapes is generally level or nearly level. Precipitation that falls on flood plains, in flood basins, and on alluvial fans is retained in the soils because there is relatively little runoff. Fan terraces, foothills, and mountain slopes range from gently sloping to very steep. Generally, the soils that formed on ridgetops have more strongly expressed horizons than the soils on steep canyon side slopes. Slope stability allows parent material to develop in place. With little runoff, more water is available to percolate through the soil, promoting soil formation. Active, steep slopes are unstable, and parent material on

these slopes may move downhill as colluvium or dry ravel. Runoff can be high, slowing the development processes because there is less water available. Complex slopes are both convex and concave. Generally, concave slopes are more stable than convex slopes and tend to have soils with more strongly expressed horizons because of a greater amount of available water and, in response, more luxuriant vegetative growth and increased development.

Aspect is the compass direction that a slope faces. Generally, south- and west-facing slopes are hotter and drier than north- and east-facing slopes. In some areas soils are more strongly developed on north- and east-facing slopes because cooler temperatures allow more effective moisture to aid in translocating clays through the profile. In the southeast part of the survey area, for example, the soils on south-facing mountain slopes at high elevations have developed an ochric epipedon and a cambic horizon, whereas the soils on north-facing slopes have developed an umbric epipedon and an argillic horizon. Vegetative communities adapt to differences in climatic conditions influenced by aspect. Because of differences in effective moisture and temperature, for example, ponderosa pine grows on north- and east-facing slopes at the lower elevations and on south- and west-facing slopes at the higher elevations.

Living Organisms

Living organisms play an important role in soil formation. They are responsible for physical disturbances, additions and incorporation of organic matter, nutrient cycling, chemical transformations, removal of water and nutrients, and changes in structure and porosity.

Animals, including humans, birds, and reptiles, influence soil formation by causing physical disturbances, such as digging or burrowing, creating pathways for water entry, and mixing horizons. As birds disperse seeds, they affect the distribution of plant communities. Also, they use insects and earthworms as food.

Soil organisms, such as arthropods, bacteria, earthworms, fungi, nematodes, and protozoa, are extremely important in driving the soil-forming process by incorporating and decomposing organic matter and transforming chemical compounds in the soil. They are primarily responsible for the carbon-nitrogen cycle and nutrient cycling.

Arthropods, such as ants, beetles, centipedes, millipedes, mites, scorpions, spiders, and springtails, are invertebrates that live in the soil. They shred plant materials as they eat bacteria and fungi, enhancing the decomposition of litter into organic matter in the soil. Also, they improve soil structure by burrowing and releasing enzymes, aggregating soil particles, controlling the number of soil organisms by predation, mineralizing nutrients and making them available to plants by consuming fungi, feeding on plant roots, and physically improving porosity and water infiltration as they burrow.

Bacteria play a role in the decomposition of carbon. They immobilize nutrients, such as nitrogen and carbon; impact the nitrogen and carbon cycles; fix nitrogen in a symbiotic relationship with plant roots; use compounds, such as nitrogen, sulfur, hydrogen, manganese, and iron; and influence porosity and soil structure.

Earthworms live throughout the soil and perform many functions. They decompose organic matter and incorporate it into the soil by shredding and burying plant residue. Earthworm channels provide conduits for roots and allow water to infiltrate the soil. The earthworms also mix soil and exude compounds that aggregate soil particles, forming structure.

Fungi decompose dead organic matter, release carbon dioxide and organic acids, immobilize nutrients, and cause or control plant diseases. Mycorrhizal fungi live in or on the roots of grasses, shrubs, and trees and have a symbiotic relationship with roots. By utilizing plant carbon, they improve the availability of nutrients, making them more soluble. They also effectively increase the surface area of the plant roots.

Nematodes are worm-shaped organisms that perform mostly beneficial functions in the soil. They mineralize nutrients, especially ammonium, after consuming fungi or bacteria and help to distribute bacteria and fungi throughout the soil by transporting them on their surfaces. Certain nematodes that attach to plant roots cause disease in agricultural crops and are considered pests.

Protozoa require soil water for movement. Their main function in the soil is to consume nutrient-rich bacteria, mineralizing excess nutrients and making them available for uptake by plant roots (USDA, 1999).

Vegetation significantly affects soil formation by providing a source of organic matter. It influences the cycling of nutrients and their release during decomposition, uses nutrients and water, and causes physical alteration as roots grow through the soil, forming channels, which provide a conduit for air and water. Plant communities have adapted to climate, aspect, elevation, and associated soils.

This survey area has many plant communities because of the diversity of soils, parent material, elevation, and associated climatic factors. A generalized vegetative transect beginning at the Sacramento River and ending in the high mountains includes the many plant communities. These are riparian forest on flood plains, emergent wetland (now rice crops) in basins, valley oak-savanna (now cropland) on alluvial fans, annual grassland on terraces, blue oak-savanna in the low foothills, shrub-hardwood in the high foothills, conifer-hardwood in the low mountains, mixed conifer at the next level of the mountains, and conifer communities dominated by white fir and red fir in the high mountains.

Human activities that manipulate vegetation include brush clearing, crop production, natural species restoration, and forest management. These activities influence organic matter additions and decomposition rates, soil temperature, and moisture levels. When water and/or fertilizer are added to the soil, the soil-forming process is accelerated.

Such human activities as digging, tilling, leveling, and filling disturb soil horizons through mixing and removal. The natural hydrology associated with soil formation has been altered by the construction of dams and levees for flood protection, by the construction of ditches and canals for water conveyance, and by irrigation or drainage systems for agricultural production. This alteration changes the amount of water that is available to enter the soil and the period when the water is available. For example, the application of irrigation water to produce an annual crop of rice is equal to approximately 2.5 years of present annual rainfall. In this survey area, rice has been irrigated since about 1915. The irrigation water added to the soil amounts to about 327 acre-feet of water, as compared to 136 acre-feet added naturally as rain. By far, the greatest human impact on soil formation occurs when roads and buildings are constructed. This construction can essentially stop the soil-forming process by sealing off the surface of the soil, thereby eliminating any further addition of water, organic matter, air, and nutrients.

Diagnostic Horizons and Characteristics

By Dean W. Burkett, Soil Survey Project Leader, Natural Resources Conservation Service.

The five soil-forming factors produce diagnostic horizons with a natural arrangement, which collectively form a soil profile. Horizon development is regulated by four processes—additions, removals, transformations, and translocations. The characteristics of a given soil are the result of unique combinations of diagnostic horizons or the lack of diagnostic horizons. Soils are classified, mapped, and interpreted on the basis of the development and arrangement of horizons. A formal soil classification system, or soil taxonomy, is based on the identification of diagnostic horizons described in the section “Classification of the Soils.” Complete descriptions of surface and subsurface diagnostic horizons are given in “Soil Taxonomy” (Soil Survey Staff, 1999). Abbreviated descriptions of the diagnostic horizons in this survey area

are given in the paragraphs that follow. Also, three diagnostic characteristics (densic material, lithic contact, and paralithic contact) are described.

An **ochric epipedon** is a light colored surface horizon or a dark but thin surface horizon with or without a relatively high content of organic matter. Base saturation (by ammonium acetate) may be less than or more than 50 percent. Generally, the ochric epipedon fails to meet the definition of the other seven epipedons described in "Soil Taxonomy" because it is too thin, has too high a color value or chroma, contains too little organic matter, or is hard or massive. Soils that are very young or lack development, soils that are fairly old and moderately weathered, soils that are unstable, and soils that are too moist or too cold to meet the definition of the other seven epipedons commonly have an ochric epipedon. Generally, organic matter does not accumulate because there is little vegetation to supply organic matter or the organic matter has been oxidized.

A **mollic epipedon** is a thick, dark surface horizon that contains a minimum of 0.6 percent organic carbon (1 percent organic matter) and has base saturation (by ammonium acetate) of 50 percent or more. Mollic epipedons form in areas where landforms are old and stable, precipitation is adequate for the production of fair to luxuriant plant growth in normal years, and air and soil temperatures are sufficient to aid organisms in the decomposition of significant amounts of organic matter and in the incorporation of organic matter into the soil.

An **umbric epipedon** is a dark surface horizon that has all of the characteristics of a mollic epipedon, except that its base saturation (by ammonium acetate) is less than 50 percent in some or all parts. Umbric epipedons form in areas with relatively high precipitation that removes or leaches base cations from the soil profile. They generally are in areas of coniferous forests.

An **argillic horizon** is a subsurface horizon with a significantly higher percentage of clay than the overlying soil material. Parent material must undergo long periods of landscape stability, significant amounts of precipitation, and relatively warm temperature for clay formation and movement of clay from an upper horizon to a lower horizon. Alternating seasonal periods of rainfall and the subsequent dry periods promote the formation of an argillic horizon. The part of the soil that has undergone a loss of clay is referred to as an eluvial horizon. The part that gains clay is referred to as an illuvial horizon. A few thousand years or more are needed for the formation of an argillic horizon.

A **calcic horizon** is an illuvial horizon with a significant accumulation of calcium carbonates. Calcium carbonates are fairly mobile and move up and down through the profile seasonally. During winter, they move downward in percolating soil water. During spring and summer, as the soil dries or water tables drop, carbonates move upward because of capillary rise, evaporation, and transpiration. Eventually, the calcium carbonates accumulate to form a calcic horizon.

A **cambic horizon** is a subsurface horizon resulting from physical alterations, chemical transformations or removals, or a combination of two or more of these processes. The physical alteration that accompanies shrinking and swelling causes cracks to open and close. The physical forces associated with expansion wedge up blocks of clay, resulting in the formation of slickensides. Iron in the soil is reduced during seasonal periods of saturation and is oxidized during dry periods, producing redoximorphic features, which are considered evidence of the chemical transformation of iron.

A **duripan** is a subsurface horizon that is cemented by illuvial silica to the degree that water movement and the penetration of most roots are restricted. Although the degree of cementation varies, almost all duripans are most strongly cemented at the upper interface. The degree of cementation decreases with increasing depth. A stable environment, moderate, seasonally distributed rainfall, and an available source of silica are required for the formation of a duripan. Duripans occur on old landscapes, generally

between 100,000 and 2.6 million years old. The available silica commonly is from volcanic activity. Soluble silica moves through the soil profile, begins to accumulate, and plugs pores at a depth that corresponds to the amount of available precipitation. Silica continues to accumulate, eventually forming a laminar cap that thickens over time.

Densic material consists of tightly packed, noncemented, relatively unaltered soil material that is water and root restricting, causing seasonal saturation.

Lithic contact is the boundary between soil material and an underlying coherent material, commonly hard or unweathered bedrock. Generally, roots cannot penetrate into lithic materials, but water may move downward through cracks or laterally across the top of the lithic contact. A lithic contact is sufficiently hard to make hand digging impractical.

Paralithic contact is the boundary between soil material and the underlying partially weathered, weakly consolidated paralithic material or soft bedrock. Roots generally cannot penetrate into paralithic materials, though they can grow into the cracks.

Developmental Sequences

By Dean W. Burkett, Soil Survey Project Leader, Natural Resources Conservation Service.

The relationships between landform, parent material, climate, soil properties, and the resulting vegetation at any given place correlate directly to the five factors of soil formation, which determine the arrangement of horizons that form a specific soil. Knowledge of these zonal relationships or developmental sequences (O'Geen, A.T.) helps soil scientists and others to understand the properties and interpretations of the soils in the survey area.

Two developmental sequences are described in the following paragraphs. Figure 28 shows the location of block diagrams (figures 29 and 30) of the two developmental sequences.

The first developmental sequence is a climosequence of soils in which the parent material is derived from Cascade volcanic material. Refer to figure 29 for help in understanding the soil and landscape relationships in this sequence. The second development sequence includes soils and landscapes formed from a variety of parent materials primarily associated with the Sierra Nevada foothills and mountains. Refer to figure 30 for help in understanding the soil and landscape relationships in this sequence. The general soil map of this survey area can help to provide an understanding of the overall picture of the relationships of soils, landscapes, and parent materials in the area.

Cascade Developmental Sequence

This sequence includes soils on flood plains, in flood basins, on alluvial fans, on fan terraces, and on foothills and mountains.

Thermic Soils on Flood Plains

Refer to the light blue area in figure 29 and to general soil map unit 1.

The soils on large river flood plains in the Sacramento Valley are the result of sediment deposition during periods of flooding. Since 1900, there have been 11 major floods on the Feather River and 15 major floods on the Sacramento River. There have been 10 major floods on the Sacramento River since Shasta Dam was completed in 1945.

Prior to the construction of dams and levees, the rivers were free to meander within the natural flood plains. The particle size of the sediment deposited is dependent on the specific reach of the river and on the velocity of the water as it flows. The

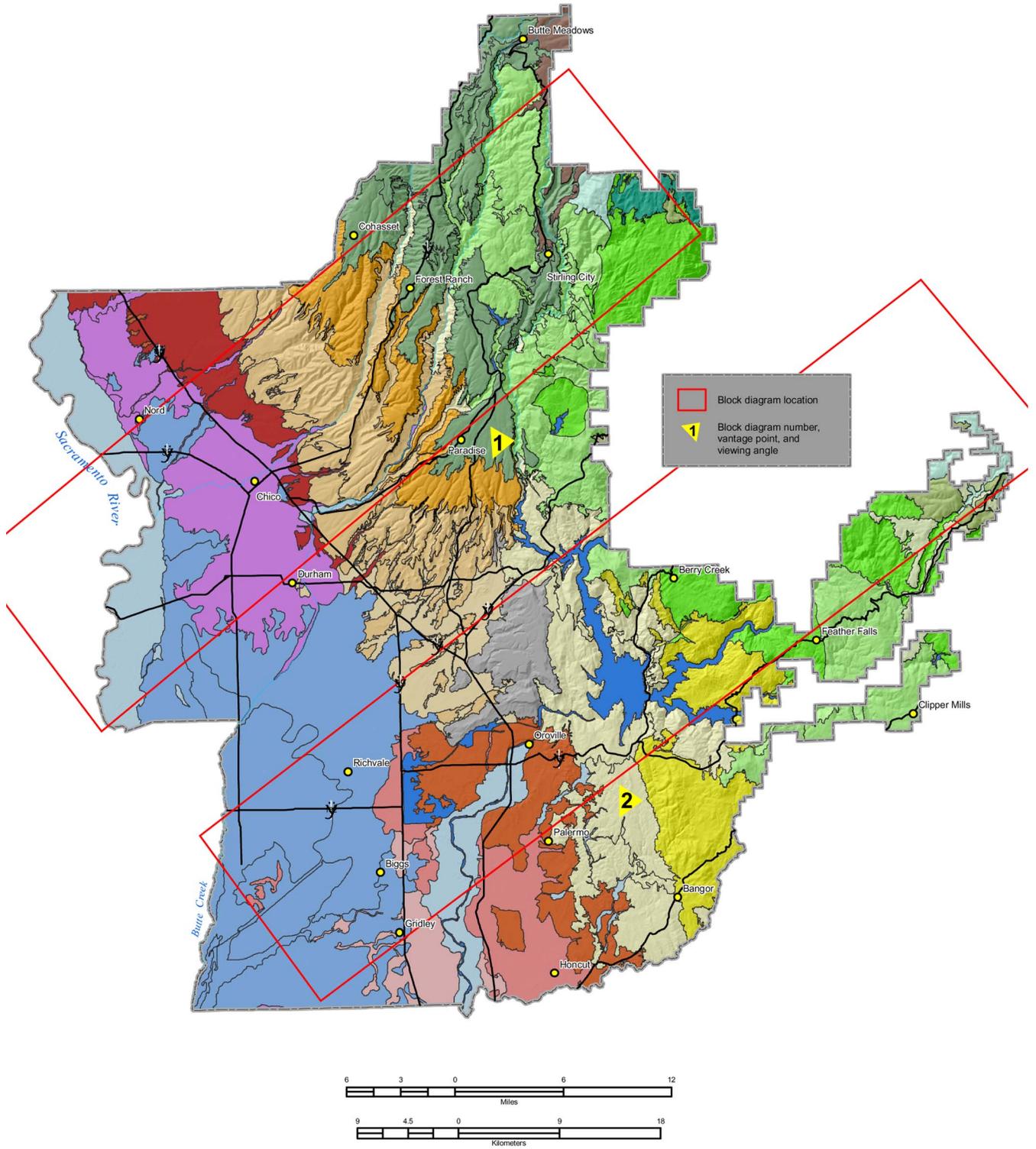
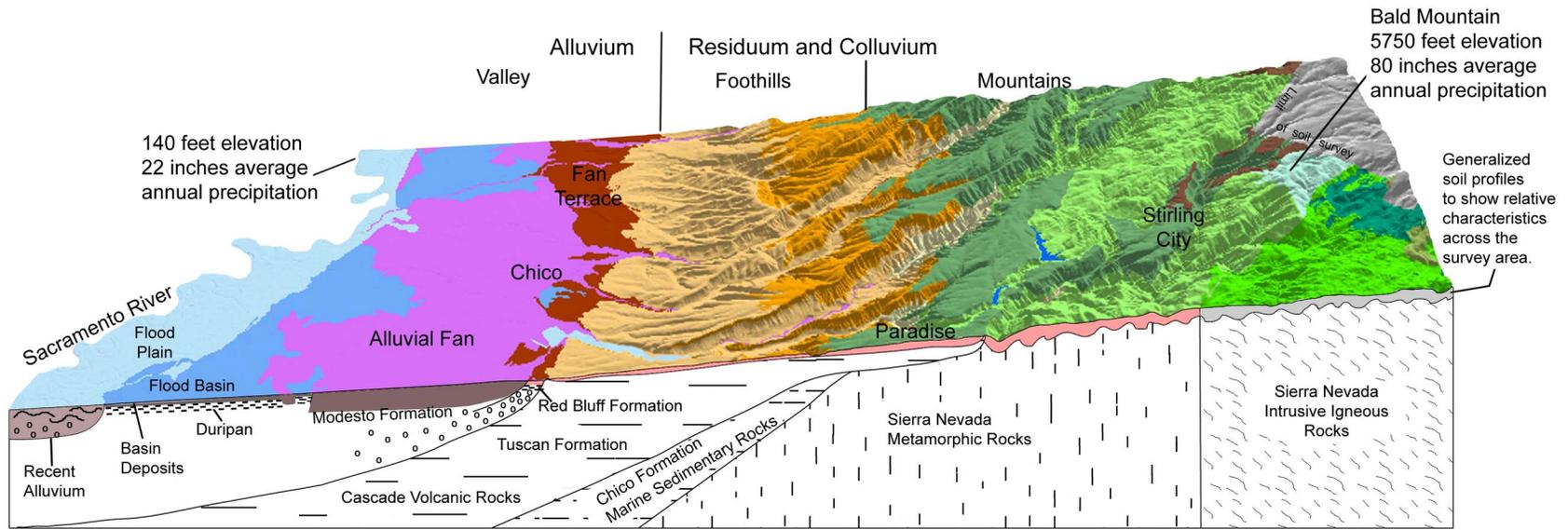


Figure 28.—Map showing the locations and viewing angles of the block diagrams of developmental sequences (figs. 29 and 30).

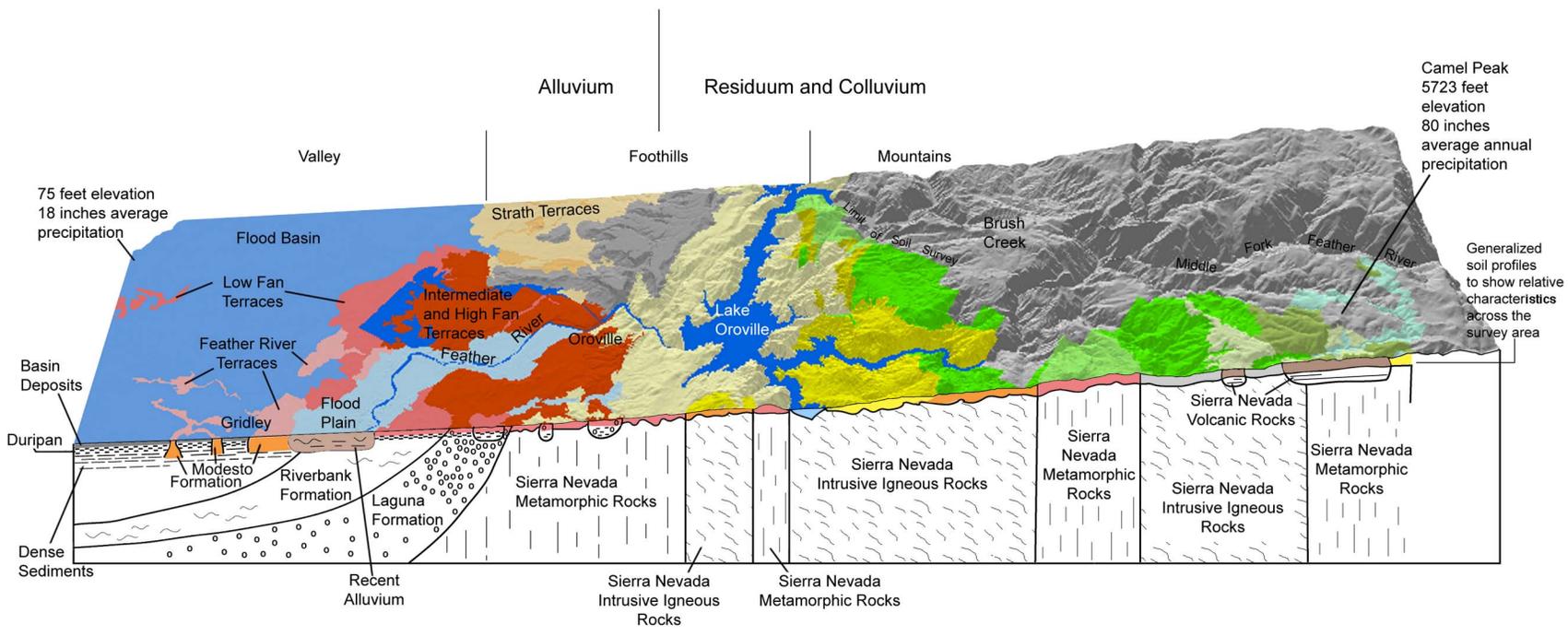


Legend

- Thermic Soils on Flood Plains in the Sacramento Valley
- Thermic Soils in Flood Basins in the Sacramento Valley
- Thermic Soils on Alluvial Fans in the Sacramento Valley
- Thermic Soils on Fan Terraces Formed from Cascade Alluvium in the Sacramento Valley
- Thermic Soils on Volcanic Cascade Foothills
- Thermic Soils on Metamorphic Sierra Nevada Foothills
- Mesic Soils on Volcanic Cascade Foothills
- Mesic Soils on Volcanic Cascade Mountains
- Mesic Soils on Metamorphic Sierra Nevada Mountains
- Mesic Soils on Plutons in Sierra Nevada Mountains
- Frigid Soils on Volcanic Cascade Mountains
- Frigid Soils on Volcanic Sierra Nevada Mountains
- Frigid Soils on Metamorphic Sierra Nevada Mountains
- Frigid Soils on Moraines in Sierra Nevada and Cascade Mountains
- Water

Geologic formations are conceptual, for illustrative purposes only, and are not to scale.

Figure 29.—Block diagram 1.



Geologic formations are conceptual, for illustrative purposes only, and are not to scale.

Legend

- Light Blue: Thermic Soils on Flood Plains in the Sacramento Valley
- Blue: Thermic Soils in Flood Basins in the Sacramento Valley
- Light Red: Thermic Soils on Feather River Terraces in the Sacramento Valley
- Red: Thermic Soils on Low Fan Terraces Formed from Sierra Nevada Alluvium in the Sacramento Valley
- Dark Red: Thermic Soils on Intermediate and High Fan Terraces Formed from Sierra Nevada Alluvium in the Sacramento Valley
- Grey: Thermic Soils on Lovejoy Basalt and Lone Sediments on Sierra Nevada Foothills
- Light Orange: Thermic Soils on Strath Terraces on Volcanic Cascade Foothills
- Orange: Thermic Soils on Volcanic Cascade Foothills
- Yellow: Thermic Soils on Metamorphic Sierra Nevada Foothills
- Light Green: Thermic Soils on Plutons in Sierra Nevada Foothills
- Green: Mesic Soils on Metamorphic Sierra Nevada Foothills
- Dark Green: Mesic Soils on Metamorphic Sierra Nevada Mountains
- Light Green: Mesic Soils on Plutons in Sierra Nevada Mountains
- Medium Green: Mesic Soils on Volcanic Sierra Nevada Mountains
- Dark Green: Frigid Soils on Volcanic Sierra Nevada Mountains
- Light Blue-Green: Frigid Soils on Metamorphic Sierra Nevada Mountains
- Blue: Water

Figure 30.—Block diagram 2.

sequence of deposition is dependent on the velocity and volume of water flowing through the main channel and the amount of material in suspension (the suspended load). During flood stage, the river carries sediment and moves previously deposited sand, gravel, and cobbles. The river also gains additional suspended load from tributaries. For example, Stony Creek carries gravel that enters the Sacramento River in the reach between Big Chico Creek and the Butte-Glenn county line. As the velocity of the water slows, the coarsest material (e.g., gravel) drops out of suspension. If the velocity slows further, the next largest size material (sand) drops out. Next to drop out of suspension is silt, and the last to drop out is clay, the smallest sized particles. The reach of the river determines the size of the particles carried in suspension as the water speeds up and slows down when it flows downstream. During periods of flooding, the water has exceeded the capacity of the main channel and begins to flow out of the banks of the main channel and to deposit sediment (overbank deposits).

In a perpendicular direction away from the main channel, a typical sequence of soils and landforms is created by the power of the river to either erode or deposit sediment. Directly adjacent to the main channel and commonly within the main channel, cobbles, gravel, and sand are deposited, forming point bars. The sand, gravel, and cobbles shift annually and are moved by flowing water until the active channel moves or the point bar becomes stabilized. This new sediment is not considered soil because it is too young (recent) and has yet to undergo any of the soil-forming processes. Riverwash is a miscellaneous area typically occurring in and adjacent to the main channel composed of sand and gravel.

The meander-belt portion of the flood plain occurs away from the river channel. It consists of light colored, very deep, coarse textured soils with some stratification, poorly defined horizonation, and no diagnostic horizons or discernible morphological features. These soils include Typic Xerofluvents, which are represented by the coarse-loamy Gianella soils. These soils are throughout the meander belt and have varying textures in the surface layer because of flooding and in places have gravel lenses within the profile. Oxyaquic Xerofluvents are represented by the coarse-loamy Columbia soils, which have a fluctuating water table below a depth of 20 inches (51 centimeters) and are in old channels that have been partially filled with sediment during channel migration. Aeris Fluvaquents are typified by the coarse-loamy Columbia taxadjunct in oxbows, which are crescent-shaped channels that have been partially filled with sediment and often remain wet throughout the year and, in early stages, occur as lakes. Because the meander belt is flooded, only riparian species, such as willow, cottonwood, boxelder, blue elderberry, and coyote brush, can become established on this landform.

A flood plain consisting of very deep, silty soils occurs outside of the meander belt and at a slightly higher elevation. The soils on this flood plain include Fluvaquentic Haploxerepts, which are represented by the fine-silty Parrott soils. These soils are on bars and have an ochric epipedon and a cambic horizon. Representing Aquic Haploxerepts are the fine-silty Vermet soils, which have an ochric epipedon, a cambic horizon, aquic conditions, and redoximorphic features and are in channels that make up a bar-and-channel topography that appears rolling. Many areas have been leveled for agriculture. Because flooding is less frequent on this flood plain than in the lower areas and floodwater moves at a lower velocity, valley oak became established. In areas used for orchard crops, most of the soils on the flood plain have a slightly darkened surface layer because of the accumulation of leaves and herbaceous growth.

A transitional zone occurs between flood plains and distal alluvial fans. The soils in this zone include Fluventic Haploxerepts, which are represented by the very deep Farwell soils. The soil profile provides evidence that these soils formed in alluvium derived from flood-plain sediments deposited over distal alluvial fan sediment. The soils have an ochric epipedon and a cambic horizon and have 27 to 35 percent clay in the particle-size control section. They are rarely flooded or occasionally flooded.

Thermic Soils in Flood Basins

Refer to the dark blue area in figure 29 and to general soil map units 3 through 6.

Flood basins are in the lowest position on the landscape. The sediment that fills the basin is less than 10,000 years old (State of California, Department of Water Resources, 1978). Clay-sized particles in suspension are the last of the sediment load carried by floodwater to settle. Very slowly moving or stagnant water is required for clay to fall out of suspension. The clay deposits are dominantly smectitic clay, range in thickness from 20 to more 60 inches, and have an average depth of 38 to 42 inches. The clay is underlain by unrelated sediments, which are cemented by silica in the upper part.

The soils in the basins include Xeric Epiaquerts, which are represented by the deep Lofgren soils, and Xeric Duraquerts, which are represented by the moderately deep Blavo soils. The Lofgren and Blavo soils are both very-fine, have as much as 70 percent clay, and are in the trench or lowest portion of the flood basin. The natural landscape had meandering channels and was hummocky because of the physical forces of the clay exhibited during seasonal periods of shrinking and swelling. The natural emergent marsh vegetation provided enough organic matter to produce a mollic epipedon. Cracks that formed during dry periods, slickensides that formed by shrinking and swelling, and redoximorphic features produced during the reduction and oxidation of iron under saturated conditions provide evidence of alteration. The soils have a cambic horizon. They also have a duripan with a very thin indurated cap over weakly cemented to strongly cemented sediments. A fluctuating water table is perched on top of the duripan. Refer to general soil map unit 3.

Much of the remainder of the flood basins is occupied by Xeric Epiaquerts, which are represented by the very deep Edjobe soils and the deep Esquon soils, and Xeric Duraquerts, which are typified by the moderately deep Neerdobe soils. The Edjobe, Esquon, and Neerdobe soils have 40 to 60 percent clay. They exhibit the same properties as those of the Lofgren and Blavo soils, but they also have an ochric epipedon, which is attributed to the oxidation of organic matter during long periods of dry conditions in summer. Refer to general soil map unit 4.

Clayey buried soils that formed in outwash resulting from hydraulic mining for gold are within the flood basins. Large pulses of sand and silty sediment were released into creeks, filling channels and causing overbank flooding and deposition of sediment on the surface of the Esquon and Neerdobe soils. Oxyaquic Xerofluvents along Butte Creek are represented by the very deep Govstanford soils, which have 20 to 36 inches of coarse-loamy hydraulic mine sediment over basin clay. Very deep Oxyaquic Xerofluvents are along Dry Creek, which becomes the Cherokee Canal and ends at Sanborn Slough. These soils have 24 to more than 72 inches of coarse-loamy mine sediment deposited over clay in the upper reach, fine-loamy mine sediment in the middle reach, and fine textured mine sediment in the lower reach. The mine sediments, locally named "slickens," were thick enough in areas near the town of Richvale for the production of vegetables. Refer to general soil map units 3 and 4.

Two interfan basins are between Rock Creek and an area south of Mud Creek. They are between alluvial fans and adjacent to fan terraces. The soils in these basins include Typic Haploxererts, which are represented by Bosquejo soils. These soils are very deep to volcanic sediments, have a fine particle-size class, have a mollic epipedon and a cambic horizon, form cracks when dry, have slickensides, and have a seasonally fluctuating water table. Also included are Aquic Durixererts, which are represented by Galt soils. These soils are moderately deep to a duripan, have 40 to 60 percent clay, have slickensides, are seasonally saturated, form cracks when dry, and are on remnant terraces of the Red Bluff Formation amongst the interfan basins. Refer to general soil map unit 5.

Aquic Durixererts, which are typified by the moderately deep Subaco taxadjunct, are in the southernmost part of the Butte Basin, adjacent to alluvial fans of the Sutter

Buttes. These soils are underlain by a thin duripan, which caps thick deposits of silt originating from ancestral Lake Mohawk and associated with the lower Modesto Formation (Busacca, 1982). The soils have a mollic epipedon, have surface-initiated polygonal cracks that open when the soils are dry, and have a calcic horizon resulting from an accumulation of calcium carbonate and some sodium. In the past, acidic cannery waste was applied to these soils in order to reduce high levels of calcium carbonate, the reaction (pH) of the soils, and the adverse effects of the soils on crop production. This management practice proved unsuccessful because of poor drainage and a fluctuating water table, which did not allow calcium carbonate to be eliminated from the soils. Because farming is not profitable, most areas of these soils are used as wildlife refuges. Refer to general soil map unit 6.

The soils on distal alluvial fans and in transitional areas from distal alluvial fans to basins include Pachic Haploxerolls, which are represented by Busacca soils. These soils have a thick mollic epipedon and a cambic horizon and average 35 to 40 percent clay in the particle-size control section.

Thermic Soils on Alluvial Fans

Refer to the purple area in figure 29 and to general soil map units 8 and 9.

The alluvial fans in this survey area generally are gently sloping areas between flood plains to the west or flood basins to the south and terraces or foothills to the east. The sediment deposited by Pine, Rock, Mud, Big Chico, and Little Chico Creeks is dominantly of Cascade volcanic origin, whereas the sediment deposited by Butte Creek is of Sierra Nevada and Cascade origin. The sediments that make up the Modesto Formation probably are about 9,000 to 70,000 years old (Busacca, 1982). The Modesto Formation is divided into a younger, upper member (9,000 to 29,000 years BP) and an older, lower member (probably 29,000 to 70,000 years BP). The natural vegetation included valley oak and perennial and annual grasses and forbs, which contributed large amounts of organic matter and formed a thick mollic epipedon. Presently, almond and walnut orchards are grown on these highly productive soils. Alluvial fans can be subdivided on the basis of relative position away from the point where creeks debouch from the stream terraces or foothills. Pachic Haploxerolls are the dominant soils on alluvial fans and are represented by Conejo, Almendra, and Vina soils.

Conejo soils occur on the distal portion of the alluvial fans, which is adjacent to flood basins and in some areas flood plains and is the part of the fans farthest away from fan terraces and foothills. These highly productive soils have a thick mollic epipedon, a cambic horizon, 27 to 35 percent clay in the particle-size control section, and calcium carbonate in the subsoil. Refer to general soil map unit 8.

Almendra soils are in mid-fan positions, which are higher than distal fans. These soils have a thick mollic epipedon and a cambic horizon and differ from Conejo soils in that they do not have calcium carbonate in the subsoil and have 18 to 27 percent clay in the particle-size control section. Ignord soils are on beach ridges, which formed when water in the flood basin was at a high level and wind-pushed waves could lap up on the alluvial fan. These soils have moderate levels of calcium carbonate, a thick mollic epipedon, and a cambic horizon. Refer to general soil map unit 8.

Vina soils have a thick mollic epipedon, a cambic horizon, and 18 to 27 percent clay in the particle-size control section and formed throughout the alluvial fans, along channels. Refer to general soil map unit 8.

Representing Typic Haploxerolls are Charger soils, which are on the uppermost portion of the proximal alluvial fans. These soils have a mollic epipedon, have a cambic horizon, and have gravel deposits at a depth of 40 to 80 inches (102 to 203 centimeters). Refer to general soil map unit 8.

Haploxerolls that are very deep or deep to an unrelated indurated duripan formed in alluvium weathered from volcanic rocks deposited over the fan terraces in areas north

of Mud Creek. These soils have a mollic epipedon and a cambic horizon. Refer to general soil map unit 9.

Thermic Soils on Fan Terraces

Refer to the reddish brown area in figure 29 and to general soil map unit 10.

Low fan terraces are slightly higher than and subtly grade uphill from mid and proximal alluvial fans. The soils on these fan terraces include Pachic Argixerolls, which are represented by Chico soils. These soils have older alluvial deposits and profile development than the soils on alluvial fans, indicating a longer period of stability. They have a thick mollic epipedon, a weak argillic horizon with an average of 25 to 35 percent clay, and base saturation of 95 to 100 percent. On the ground, it is difficult to distinguish the low fan terraces from the alluvial fans. A slight rise in topography is about the only observable feature that indicates the boundary.

Alluvial fan deposits eroded from the Tuscan Formation make up the Redbluff Formation, which is 0.45 to 1.1 million years old (Harwood, Helly, and Doukas, 1981). The soils currently on this landscape are remnants of perhaps much thicker and older soils that were removed or stripped away by catastrophic erosional events, or "blowouts." These fan terraces have been subject to various periods of deposition and erosion, evidenced by patterns of soils with depths ranging from very shallow to very deep and soils that are underlain by a thick, indurated, cobbly duripan. The duripan has been stripped away in many areas, exposing the underlying volcanic sediments.

At a higher elevation than the Chico soils are Mollic Haploxeralfs, which are represented by the very deep Redsluff soils. These soils formed in overbank alluvium deposited over channel alluvium on low fan terraces. They have an ochric epipedon, an argillic horizon with an average of 25 to 35 percent clay, and 2 to 25 percent rock fragments. The depth to extremely gravelly channel deposits ranges from 35 to 65 inches. Refer to general soil map unit 10.

Various periods of erosion and deposition are exhibited by Munjar soils, which are moderately deep to an extremely gravelly duripan and have a loamy-skeletal argillic horizon with 27 to 35 percent clay; the Tuscan taxadjunct, which is moderately deep to an extremely cobbly duripan and has an argillic horizon with 35 to 40 percent clay; and Anita soils, which are shallow to an indurated duripan, do not have rock fragments, and are clayey throughout.

Typic Durixeralfs occur on high fan terraces with a mound-swale microrelief in areas of the Redbluff Formation. These Durixeralfs include Redtough soils, which are shallow to an indurated duripan (fig. 25), have an ochric epipedon, have an argillic horizon with 18 to 27 percent clay, have redoximorphic features, have a fluctuating water table that is perched on the duripan, and are on mounds. Also included are Redswale soils, which are very shallow to an indurated duripan; have an ochric epipedon; have an argillic horizon with 18 to 25 percent clay; have redoximorphic features, such as manganese coatings on the duripan; have a fluctuating water table; and are in swales. Annual grasses and forbs make up the plant community because of saturation and a limited rooting depth. Refer to general soil map unit 10.

Thermic Soils on Cascade Foothills

Refer to the tan areas in figure 29 and to general soil map units 17 and 18.

The soils on the Cascade foothills formed directly over bedrock, mainly mudflow breccia (lahar) and volcanic sandstone, which make up the Tuscan Formation, about 1.3 to 3.3 million years old (Lydon, 1968). This landscape consists of long, nearly level to moderately sloping ridges and canyons with strongly sloping to very steep slopes and some areas of gently sloping canyon bottoms. Cliffs with nearly vertical slopes are common. The Tuscan Formation consists of four units (Helley and Harwood, 1985). Unit A, the oldest, consists of interbedded lahars, volcanic conglomerate, volcanic sandstone, and siltstone containing metamorphic rock fragments. Unit B consists of

interbedded lahars, volcanic conglomerate, and volcanic sandstone. Unit C consists of lahars with some interbedded volcanic conglomerate and sandstone. Unit D consists of fragmental deposits of andesite, basaltic andesite, pumice, and obsidian. Unit D is not exposed in this survey area.

Lithic Haploxeralfs occur on the lowest part of the foothills. They are represented by Doemill and Jokerst soils. Doemill soils are on mounds on ridgetops and on the side slopes of ridges. They are shallow to lithic mudflow breccia and have an ochric epipedon, an argillic horizon with 18 to 27 percent clay, 2 to 35 percent rock fragments, and a fluctuating water table that is perched on the hard bedrock. Redoximorphic features occur in the argillic horizon and coat the upper surface of the bedrock. Jokerst soils are in swales on ridgetops and on the side slopes of ridges. They are very shallow to lithic mudflow breccia. They have an ochric epipedon; an argillic horizon with 18 to 24 percent clay; 10 to 35 percent rock fragments; redoximorphic features, such as iron-manganese masses and concretions throughout and manganese coatings on the uppermost surface of the bedrock; and a fluctuating water table that extends from the bedrock to the surface of the soils. Base saturation ranges from 60 to 75 percent in the argillic horizon of both soils. The plant community consists of annual grasses and forbs because of saturation and a limited rooting depth. Refer to general soil map unit 17.

The soils on the mid-level foothills at elevations of about 200 to 1,700 feet (61 to 518 meters) include shallow Xerorthents, which have a paralithic contact of mudflow or a lithic contact of volcanic sandstone, and moderately deep or deep Typic Haploxeralfs, which are on side slopes and have an ochric epipedon, an argillic horizon with 27 to 45 percent clay, 15 to 65 percent rock fragments, base saturation of more than 75 percent, and a paralithic or lithic contact of mudflow or volcanic sandstone. Annual grasses and forbs, shrubs, blue oak, and foothill pine are characteristic of the vegetation in this zone. Refer to general soil map unit 18.

Mesic Soils on Cascade Foothills

Refer to the orange area in figure 29 and to general soil map unit 25.

The soil temperature regime changes from thermic to mesic at an elevation of about 1,220 feet (372 meters) on ridgetops and about 500 feet (152 meters) on north- and east-facing slopes in canyons. The soils on ridgetops include Lithic Xerorthents, which are represented by the very shallow Rockstripe soils. These soils have an ochric epipedon, a cambic horizon, base saturation of 50 to 75 percent, and a lithic contact of mudflow breccia. Other soils on these foothills include Ultic Haploxeralfs, mesic, which are moderately deep or deep to either a paralithic or lithic contact of mudflow breccia and have an ochric epipedon, an argillic horizon with 27 to 40 percent clay, and 5 to 80 percent rock fragments, and Ultic Haploxeralfs, which are moderately deep or deep to either a paralithic or lithic contact of volcanic conglomerate and have an ochric epipedon, an argillic horizon with 27 to 35 percent clay, and 10 to 50 percent rock fragments. These foothills are dominated by shrubs, annual grasses and forbs, foothill pine, and canyon live oak.

Mesic Soils on Cascade Mountains

Refer to the dark green area in figure 29 and to general soil map units 27, 28, and 29.

Upslope from the Cascade foothills is a zone with a mesic soil temperature regime and a plant community consisting mainly of ponderosa pine and California black oak. The soils in this zone include Andic Haploxeralfs, which are represented by the very deep Paradiso soils on ridgetops and the deep Schott soils on ridgetops and side slopes. Both of these soils have an ochric epipedon with andic material to a depth of

15 inches (38 centimeters) and have base saturation of 35 to 50 percent. Paradise soils have an argillic horizon with 35 to 50 percent clay, and Schott soils have an argillic horizon with 18 to 35 percent clay. Andic Palexeralfs are represented by the very deep Tuscoll soils on backslopes in canyons. These soils have an ochric epipedon with andic material to a depth of 14 inches (36 centimeters), an argillic horizon with 22 to 35 percent clay (the content of clay increasing with increasing depth), and base saturation of 35 to 50 percent. Refer to general soil map unit 27.

The zone of maximum soil formation occurs at elevations between 2,000 and 4,000 feet (610 and 1,219 meters). Annual precipitation is more than 60 inches (1,524 millimeters), and temperatures are optimum for pedologic processes to function. The soils in this area are in the mesic temperature regime. The area is referred to as the “banana belt” by the survey soil scientists, because of the ideal climate, high forest productivity, and well developed soils. Precipitation changes from rain to snow at an elevation of about 4,000 feet (1,219 meters). This point is referred to as the “effective snow line.” At elevations above this point, pedogenesis begins to slow down, mainly because of cooler temperatures.

Representing Andic Haplohumults in this area are the very deep Mountyana soils on ridgetops. These soils have an ochric epipedon with andic material to a depth of 9 inches (23 centimeters), a thick argillic horizon with 18 to 35 percent clay, and base saturation of less than 35 percent. Typic Haploxerands are represented by the very deep Beecee soils on the side slopes of ridges. These soils have andic soil properties from the surface to a depth of 22 inches (0 to 53 centimeters), an ochric epipedon, and a cambic horizon. Representing Andic Dystroxerepts are the moderately deep Lydon soils, which have an ochric epipedon with andic material at a depth of 1 to 6 inches (3 to 15 centimeters), a cambic horizon, and a lithic contact of mudflow breccia or andesite. A mixed conifer plant community occurs on these soils. Refer to general soil map unit 28.

Ultic Haploxerands are represented by the deep Redbone soils on ridgetops. These soils are in the mesic temperature regime bordering on the frigid temperature regime and have andic soil properties to a depth of 16 inches (41 centimeters), an ochric epipedon, an argillic horizon, and a paralithic contact of mudflow breccia. They support mixed conifers dominated by white fir. Refer to general soil map unit 29.

Frigid Soils on Cascade Mountains

Refer to the brown and turquoise areas in figure 29 and to general soil map units 36 and 39.

Representing Typic Haploxerands in these mountains are the deep Bonepile soils on ridgetops at elevations of 4,600 to 5,660 feet (1,402 to 1,725 meters) and extending down to 3,320 feet (1,012 meters) in canyons. These soils formed in tephra deposited over residuum and have andic soil properties throughout, an ochric epipedon, a cambic horizon, glassy mineralogy, base saturation of 10 to 15 percent, and a paralithic contact of andesite or mudflow breccia. They support mixed conifers dominated by white fir; hardwoods, such as California black oak; and shrubs. Refer to the brown area in figure 29 and to general soil map unit 36.

Haploxerands, volcanic till, and Haploxerands, granitic till, are on moraines at high elevations in both the Cascade and Sierra Nevada Mountains. These soils have andic soil properties from the surface to a depth of about 20 inches (51 centimeters), have an ochric epipedon and a cambic horizon, and are moderately deep to very deep to a densic horizon of glacial till. They support mixed conifers, dominantly white fir and red fir. Refer to the turquoise area on the far right side of figure 29 and to general soil map unit 39.

Sierra Nevada Developmental Sequence

This sequence includes soils on Feather River terraces, fan terraces, foothills, and mountains.

Thermic Soils on Feather River Terraces

Refer to the pink area in figure 30 and to general soil map unit 11.

The soils on Feather River terraces formed in sediments that make up the Modesto Formation, approximately 9,000 to probably 70,000 years BP (Busacca, 1982). This formation is divided into a younger, upper member (9,000 to 29,000 years BP) and an older, lower member (29,000 to probably 70,000 years BP).

Representing Typic Haploxerolls on these terraces are the very deep Liveoak soils in distributary channels. These soils have a mollic epipedon and have an argillic horizon with 18 to 25 percent clay. Typic Haploxeralfs, such as the very deep Boga soils, have an ochric epipedon, an argillic horizon with 25 to 35 percent clay, redoximorphic features, a densic horizon, and a fluctuating water table that is perched on top of the densic horizon. The deep Loemstone soils generally have the same characteristics as the Boga soils, with the exception of depth. The densic horizon consists of sediment and has a discontinuous silica-cemented cap. It is speculated that glacial Lake Mohawk was breached and its sediments (from the Tahoe glaciation) were eroded and transported down the Feather River. The silt and clay spread as a sheet of uniform thickness across several hundred square miles of the lower Modesto flood plain (Busacca, 1982). These soils support annual grasses, forbs, and valley oak.

Thermic Soils on Low Fan Terraces

Refer to the light red area in figure 30 and to general soil map unit 12.

Above the Feather River terraces are low fan terraces in areas of the Riverbank Formation, which dates back to 103,000 to 450,000 years BP (Busacca, 1982). This formation is divided into a younger, upper member and an older, lower member. The soils on these terraces formed in alluvial sediment deposited by the Feather River during glacial periods. During interglacial periods, landscape stability allowed soil formation to begin. The profile characteristics of the soils are believed to correspond to various interglacial periods. The loamy part of the profile, including the A1, A2, and BA_t horizons, represents the upper member. A discontinuity consisting of an abrupt texture change to clay in the 2B_t horizon and the next discontinuity, an indurated duripan (3B_{qm} horizon), represent the lower member.

Representing Abruptic Durixeralfs on these terraces are the moderately deep Eastbiggs soils, which have an ochric epipedon, an argillic horizon with 35 to 50 percent clay, an abrupt texture change to clay at a depth of 17 inches (43 centimeters), an indurated duripan, redoximorphic features, and a fluctuating water table that is perched on top of the duripan. Mollic Paleixeralfs are typified by the very deep Kimball soils on the tops of dissected terraces at elevations slightly higher than those of the Eastbiggs soils. Kimball soils have an ochric epipedon, an argillic horizon with 40 to 45 percent clay, and an abrupt texture change to red clay at a depth of 17 inches (43 centimeters). Both soils have relatively few rock fragments and support annual grasses and forbs. Kimball soils also support valley oak.

Thermic Soils on Intermediate Fan Terraces

Refer to the dark red area in figure 30 and to general soil map unit 13.

Above the low fan terraces are intermediate fan terraces in areas of the Laguna Formation, which dates back to 1.7 to 3.6 million years BP (Busacca, 1982). This formation is divided into a younger, upper member and an older, lower member. The upper member has a gravelly cap that is recognized as part of the formation. The lower member consists of coarse alluvium, including fragments the size of stones,

cobbles, and gravel that were deposited by the Feather River. These deposits are exposed near Sycamore Hill, and this area is thought to be the location of the main channel of the Feather River at the time when the lower unit was being deposited. Following a change in base level, the Feather River cut through metavolcanic rocks, defining its present channel and depositing upper member alluvium.

The topography of the Laguna Formation is characterized by low, rolling, dissected hills with isolated remnant knobs. Observation of the soils indicates that there were various periods of deposition, soil formation, erosion, more deposition, soil formation, more erosion that stripped away the duripan, and more deposition that filled in channels and areas where the duripan was removed. The soils have well developed profiles with very strongly expressed diagnostic horizons. They are very shallow to very deep to a duripan. This variability of soil depth commonly occurs within a very short distance. There are “windows” where the duripan has been stripped away.

Aquic Durixeralfs on these terraces are represented by the moderately deep Oroville soils in swales. These soils have an aquic moisture regime; an ochric epipedon; an argillic horizon with 35 to 50 percent clay and 2 to 35 percent gravel; an abrupt texture change to gravelly clay at a depth of 13 inches (33 centimeters); an indurated, extremely gravelly duripan; redoximorphic features; and a fluctuating water table that is perched on top of the duripan. Representing Abruptic Durixeralfs are the moderately deep Thermalito soils on mounds. These soils have an ochric epipedon; an argillic horizon with 24 to 35 percent clay and 2 to 30 percent gravel; an abrupt texture change to gravelly clay at a depth of 25 inches (64 centimeters); an indurated, gravelly duripan; redoximorphic features; and a fluctuating water table that is perched on top of the duripan. Typifying Ultic Palexeralfs are the very deep Fernandez soils on the top of dissected terraces. These soils have an ochric epipedon, an argillic horizon with 20 to 35 percent clay and 0 to 20 percent gravel, an abrupt texture change to red clay at a depth of 44 inches (112 centimeters), base saturation of less than 75 percent, and a weakly cemented, gravelly duripan. They are believed to represent channels that were refilled with sediment. Vegetation consists of annual grasses and forbs.

A high fan terrace is dominantly associated with the lower member of the Laguna Formation, though the upper member also occurs. Ultic Palexeralfs on this terrace are represented by the very deep Thompsonflat soils. These soils have an ochric epipedon and an argillic horizon with 23 to 34 percent clay and 4 to 34 percent rock fragments and are 22 to 75 inches (56 to 190 centimeters) deep to extremely gravelly layers that have secondary silica. Vegetation consists of annual grasses and blue oak.

Thermic Soils on Sierra Nevada Foothills

Refer to the light yellow, greenish yellow, and gray areas in figure 30 and to general soil map units 14, 19, 20, 21, 23, and 24.

Directly uphill and east of the high fan terraces are the Sierra Nevada foothills consisting of metamorphic rocks that are on the Smartville Complex. This complex, which dates back to 159 million to 164 million years BP (Schiffman and Wagner, 1992), consists mainly of greenschist, gabbro, gabbro diorite, diorite, and some quartz diorite.

Ultic Haploxeralfs, such as the shallow Dunstone and moderately deep Loafercreek soils, occur on the lower portion of the foothills, at elevations of 200 to 2,400 feet (61 to 732 meters). These soils have an ochric epipedon, an argillic horizon with 18 to 33 percent clay and as much as 50 percent silt, 3 to 33 percent rock fragments, base saturation of 60 to 85 percent, and a paralithic contact of greenschist. The soils support two plant communities, one consisting mainly of annual grasses, forbs, and blue oak and the other consisting mainly of shrubs, hardwoods, and foothill pine. Refer to general soil map units 19 and 20.

Above the low metamorphic foothills is a zonal sequence of metamorphic foothills at elevations of 1,200 to 2,000 feet (366 to 610 meters). Representing Ultic Haploxeralfs

in this zone are the deep Mounthope soils, which have an ochric epipedon, an argillic horizon with 20 to 27 percent clay and as much as 50 percent silt, 10 to 35 percent rock fragments, and a paralithic contact of green schist. Ultic Palexeralfs are typified by the very deep Hartsmill soils, which have the same diagnostic horizons as the Mounthope soils but have an argillic horizon with 35 to 50 percent rock fragments and a clay content that does not decrease in the lower part. The Hartsmill soils support dense shrub-hardwood plant communities with scattered ponderosa pine. Refer to the light yellow area in figure 30 and to general soil map unit 21.

The Smartville Complex includes the Swedesflat Pluton, which consists of gabbro, gabbro diorite, diorite, and some quartz diorite. Ultic Haploxeralfs are on this pluton. Examples are the moderately deep Flanly and shallow Swedesflat soils, which have an ochric epipedon, an argillic horizon with 15 to 30 percent clay, 4 to 25 percent rock fragments, base saturation of 40 to 74 percent, and a paralithic contact of quartz diorite. Representing Ultic Palexeralfs are the very deep Parkshill soils. These soils have diagnostic horizons similar to those of the Flanly and Swedesflat soils, but the content of clay does not decrease in the lower part of the argillic horizon. Parkshill soils support annual grass-shrub-hardwood plant communities with scattered foothill pine. Refer to the greenish yellow area in figure 30 and to general soil map unit 23.

Soils on the low portion of the Bald Rock Pluton formed in residuum and colluvium derived from trondhjemite. Examples are Typic Haploxerepts, such as the very deep Crystalhill and moderately deep Oregongulch soils, which have an ochric epipedon, a cambic horizon with 12 to 18 percent clay and 20 to 35 percent rock fragments, and a densic contact of trondhjemite. The densic contact has rock structure and, when observed in road cuts, appears to be a paralithic contact. It is a densic contact, however, because it slakes in water. Representing Ultic Haploxeralfs are the deep Craigsaddle soils, which have an ochric epipedon, an argillic horizon with 18 to 27 percent clay, and a densic contact. The soils on the low portion of the Bald Rock Pluton support dense shrubs, hardwoods, and conifers. Refer to the greenish yellow area in figure 30 and to general soil map unit 24.

Directly north of the fan terraces is Table Mountain, a prominent feature that formed by exposure of Lovejoy basalt (of Miocene age) and that rises like an island above the surrounding area. Table Mountain has unique soils and a landscape that is far different from that of the surrounding area. Water has worked this plateau, eroding hard basalt back from the edges and forming several canyons (hollows). Representing Oxyaquic Haplohumults on this landscape are the moderately deep Elsey soils on mounds. These soils have an umbric epipedon, an argillic horizon with base saturation of less than 7 percent, a lithic contact of basalt, redoximorphic features, and a fluctuating water table. Lithic Haplohumults are typified by the shallow Beatsonhollow soils in swales. These soils have an umbric epipedon, an argillic horizon with base saturation of less than 7 percent, a lithic contact of basalt, redoximorphic features, and a fluctuating water table. Ultic Argixerolls are represented by the deep Campbellhills soils in joint fractures on the top of basalt plateaus. These soils have a mollic epipedon, an argillic horizon, a lithic contact of basalt, and a fluctuating water table that is perched on the lithic contact. The soils on Table Mountain support a diverse plant community of annual grasses and forbs on top of the basalt plateau and annual grasses, forbs, shrubs, hardwoods, and some conifers in canyons. Refer to the gray area northwest of Lake Oroville in figure 30 and to general soil map unit 14.

Directly below the Lovejoy basalt on Table Mountain are sediments of the Lone Formation (of Eocene age). These sediments are associated with auriferous gravel that was hydraulically mined for gold. The lone sediments consist of sand and clay layers that have weathered to form soils represented by very deep Palexerults, which have an argillic horizon with an average of 26 to 40 percent kaolinitic clay and have a densic contact of claystone. Refer to the gray area northwest of Lake Oroville in figure 30 and to general soil map unit 14.

Mesic Soils on Sierra Nevada Mountains

Refer to the light green, dark green, and pale green areas in figure 30 and to general soil map units 31, 33, 34, and 35.

Soils that formed under optimum conditions favoring deeply developed profiles are at an elevation of 2,200 to 4,375 feet (671 to 1,334 meters). These soils formed in residuum and colluvium derived from metavolcanic rocks, metadiorite, diorite, and gabbro ranging in age from Jurassic to Permian. In this zone, high amounts of precipitation and relatively warm temperatures have developed fairly uniform soil properties despite the type of rock from which the parent material of the soils is derived. Andic Haplohumults, such as the fine textured Toadtown and fine-loamy Powellton soils, have an ochric epipedon, andic material extending to a depth of about 15 inches (38 centimeters), and an argillic horizon with base saturation of 10 to 35 percent. Representing Xeric Kanhaplohumults are the deep Rogerville soils, which formed in residuum and colluvium derived from ultramafic rocks, mainly talc schist. These soils have an ochric epipedon, an argillic horizon with 36 to 50 percent clay and base saturation of 20 to 35 percent, and a paralithic contact of talc schist. They support a highly productive mixed conifer forest. Refer to the light green area in figure 30 and to general soil map unit 31.

A variety of soils have formed in residuum and colluvium on the Bald Rock Cascade, Concow, and Grizzly Plutons, which are Cretaceous, dating back to 128 to 142 million years BP (Hietanen, 1976). Typic Dystroxerepts, such as the very deep Islandbar soils, the shallow, loamy Chawanakee soils, and the very deep Bonneyridge soils, are typical of the soils that formed in granitic parent materials. They have an ochric epipedon, a cambic horizon, and less than 18 percent clay (a coarse-loamy particle-size class). The very deep Featherfalls soils, which show evidence of differential weathering and represent Ultic Palexeralfs, have an ochric epipedon and have an argillic horizon with 20 to 27 percent clay. The content of clay does not decrease in the lower part of the argillic horizon. Andic Haploxerults are represented by the very deep Lewisflat soils, which have an ochric epipedon, an argillic horizon with 18 to 27 percent clay, and base saturation of 9 to 32 percent. Islandbar and Featherfalls soils occur at elevations of 900 to 3,175 feet (274 to 968 meters). Bonneyridge and Lewisflat soils occur at elevations of 3,100 to 4,600 feet (945 to 1,402 meters) and in some areas down to 1,680 feet (512 meters). Refer to the dark green area in figure 30 and to general soil map units 33 and 34.

The Cascade Pluton has Sierra Nevada volcanic lava flows of Lovejoy basalt, which are of Miocene age (22.2 million years BP) and are buried by tephra. The soils on this pluton include Humic Haploxerands, such as the very deep Shakeridge and deep Timberland soils on ridgetops and side slopes. These soils have a mollic epipedon, andic soil properties extending to a depth of more than 40 inches (102 centimeters), a cambic horizon, and ferrihydritic mineralogy. Base saturation is more than 50 percent because bases are released as basalt fragments weather. Representing Alfic Humic Haploxerands are the very deep Mudwash soils on ridgetops and side slopes. These soils have a thick umbric epipedon, andic soil properties extending to a depth of 26 inches, an argillic horizon, and a paralithic contact of basalt or mudflow. Refer to the pale green area in figure 30 and to general soil map unit 35.

Frigid Soils on Sierra Nevada Mountains

Refer to the olive green and blue green areas in the lower right part of figure 30 and to general soil map units 37 and 38.

Lovejoy basalt flows are underlain by Sierra Nevada volcanic pyroclastic mudflows, which are of Pliocene age, dating back to 2 to 6 million years BP (Hietanen, 1976), and are buried by tephra of unknown origin. The soils on these mountains include Humic Haploxerands, such as the moderately deep, medial-skeletal Powderhouse soils, the moderately deep, medial Greenwell soils, and the deep, medial-skeletal

McNair soils. These soils have an umbric epipedon, andic soil properties extending from the surface through most of the profile, a cambic horizon, and a paralithic contact of mudflow. Base saturation ranges from 10 to 35 percent. The content of organic matter ranges from 4 to 35 percent. It is highest in the A horizon. Refer to the olive green area in figure 30 and to general soil map unit 37.

At the highest elevation in this sequence, soils formed in material derived from Sierra Nevada metamorphic rocks, which are designated as the Franklin Canyon Formation and estimated to be of Devonian age, about 360 to 415 million years BP (Hietanen, 1976). Representing Andic Haplohumults on ridgetops and side slopes are the very deep Dejonah soils, which have an ochric epipedon with andic material to a depth of 10 inches (25 centimeters), an argillic horizon with 18 to 27 percent clay, 5 to 30 percent rock fragments, and base saturation of 10 to 25 percent. The very deep Stagpoint soils generally have the same properties as the Dejonah soils, but the content of rock fragments ranges from 41 to 58 percent. Both soils have 8 to 17 percent organic matter in the upper 10 inches (25 centimeters). This high-elevation area supports conifers dominated by white fir and red fir. Refer to the blue green area in figure 30 and to general soil map unit 38.

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Glossary

- AASHTO classification.** A system for classifying soils specifically for geotechnical engineering purposes that is related to highway and airfield construction. It is based on particle-size distribution and Atterberg limits.
- AASHTO group index (GI).** An empirical index number used to evaluate clayey and silty clay material.
- Aeration, soil.** The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.
- Aggregate, soil.** Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.
- Alkali (sodic) soil.** A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.
- Allophane.** An amorphous clay mineral; a hydrous alumino-silicate gel of highly variable composition.
- Alluvial fan.** A low, outspread mass of loose material and/or rock material washed down the sides of mountains and hills. It commonly has gentle slopes and is shaped like an open fan or a segment of a cone. It is deposited by a stream at the place where the stream issues from a narrow mountain valley or where a tributary stream is near or at its junction with the main stream. An alluvial fan is steepest near its apex that points upstream, and it slopes gently and convexly outward with a gradual decrease in gradient.
- Alluvium.** Material, such as sand, silt, or clay, deposited on land by streams.
- Alpha,alpha-dipyridyl.** A dye that when dissolved in 1N ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction indicates a type of redoximorphic feature.
- Aquic conditions.** Current soil wetness characterized by saturation, reduction, and redoximorphic features.
- Andesite.** A dark, fine grained extrusive rock that, when porphyritic, contains phenocrysts composed primarily of zoned sodic plagioclase (especially andesine) and one or more of the mafic minerals (e.g., biotite, hornblende, and pyroxene), with a ground mass composed generally of the same minerals as the phenocrysts; the extrusive equivalent of diorite.
- Andic materials.** Soil materials that have properties influenced by the weathering of tephra and volcanic glass but are not diagnostic andic soil properties. Commonly, layers of weathered volcanic ash that are too thin or are not weathered sufficiently to have formed allophane or imogolite.
- Andic soil properties.** Soil properties resulting from the presence of significant amounts of allophane, imogolite, ferrihydrate, or aluminum-humus complexes in soils. These materials, termed "amorphous," are commonly formed during the weathering of tephra and other parent materials with a significant content of volcanic glass.
- Anthropogenic soils.** Soils that have been altered by human activity. Examples are soils that formed in human-transported or human-manufactured materials, soils

that have had all diagnostic horizons destroyed in-situ by one-time or periodic human chemical or mechanical disturbance, soils in excavated areas, and paddy soils and other soils in which ongoing genesis is strongly influenced by nearly continuous human activity.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Ash, volcanic. Unconsolidated pyroclastic material less than 2 millimeters in all dimensions.

Aspect. The direction in which a slope faces.

ASTM standard D2487-00. Refers to a system of classifying mineral and organo-mineral soils for engineering purposes based on laboratory determination of particle-size characteristics, liquid limit, and plastic index. ASTM means American Society for Testing and Materials.

Available water capacity (available moisture capacity). The volume of water that should be available to plants if the soil, inclusive of rock fragments, were at field capacity. It is commonly estimated as the difference between the amount of water at field capacity and the amount at wilting point with adjustments for salinity, rock fragments, and rooting depth. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 2.5
Low	2.5 to 5.0
Moderate	5.0 to 7.5
High	7.5 to 10.0
Very high	more than 10.0

AWC. See Available water capacity.

Backslope. The hillslope profile position that forms the steepest and generally linear, middle portion of the slope. In profile, backslopes commonly are bounded by a convex shoulder above and a concave footslope below. They may or may not include cliff segments, or free faces. Backslopes are commonly erosional forms produced by mass movement, colluvial action, and running water.

Bar (microfeature). A small, sinuous or arcuate, ridgelike lineation separated from others similar to it by small channels. It is caused by fluvial processes and is common on flood plains and young alluvial terraces. It is a constituent of bar-and-channel topography.

Bar (streams). A general term for a ridgelike accumulation of sand, gravel, or other alluvial material in the channel, along the banks, or at the mouth of a stream where a decrease in velocity induces deposition. Examples are channel bars and meander bars.

Bar-and-channel topography. A local topography of recurring, small, sinuous or arcuate ridges separated by shallow troughs irregularly spaced across low-relief flood plains (slopes generally are 2 to 6 percent). The effect is a subdued, sinuously undulating surface that is common on active flood plains. Micro-elevational differences generally range from less than 1 meter to less than 2 meters. The elevational differences between the bars and channels are largely controlled by the competency of the stream. The ridgelike bars commonly consist of sediment that is coarser than the finer textured sediment of the low-lying areas.

Basal area. The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.

Basal till. Compact glacial till deposited beneath the ice.

Basalt. A dark igneous rock, commonly extrusive, composed primarily of calcic plagioclase and pyroxene; the fine grained equivalent of gabbro.

- Base saturation.** The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.
- Basin.** The nearly level or gently sloping bottom surface of a wide structural depression between mountain ranges.
- Batholith.** A large body of igneous intrusive (plutonic) rock, commonly regional in extent, such as the Sierra Nevada Batholith.
- Beach terrace.** A landform that consists of a wave-cut scarp and wave-built terrace of well sorted marine and lacustrine sand and gravel. Colloquially, in the western United States, the relict shoreline from pluvial lakes, generally restricted to the sides of valleys.
- Bedding planes.** Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.
- Bedrock.** A general term for the solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface. *Densic bedrock* is noncemented, extremely weathered, or soft because of the nature of the rock. *Lithic bedrock* is indurated, very strongly cemented, or strongly cemented. An example is hard bedrock, which impedes the downward movement of water and restricts root penetration. *Paralithic bedrock* is moderately cemented, weakly cemented, very weakly cemented, or extremely weakly cemented. An example is soft bedrock, such as sandstone, mudstone, or strongly weathered bedrock.
- Bedrock-controlled topography.** A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.
- Bench.** A platformlike, nearly level or gently sloping erosional surface developed on resistant strata where canyons are downcut by streams. Structural benches are bedrock controlled.
- Bisequum.** Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.
- Bottom land.** The normal flood plain of a stream, subject to flooding.
- Boulders.** Rock fragments larger than 24 inches (more than 600 millimeters) in diameter.
- Breast height.** An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.
- Breccia.** A coarse grained clastic rock composed of angular, broken rock fragments held together by a mineral cement or a fine grained matrix, e.g., volcanic breccia.
- Brush management.** Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.
- Bulk density.** A measurement of the oven-dry weight of the soil material that is less than 2 millimeters in diameter per unit volume. Common measurements are taken at $1/3$ -, $1/10$ -, or 15-bar moisture tension. Bulk density influences plant growth and engineering applications. It is used to convert measurements from a weight basis to a volume basis. Within a family particle-size class, bulk density is an indicator of how well plant roots are able to extend into the soil. Bulk density is used to calculate porosity.
- Butte.** An isolated, generally flat-topped hill or mountain with relatively steep slopes and talus or precipitous cliffs. It is characterized by a summit width that is less than the height of bounding escarpments, is commonly topped by a cap of resistant rock, and represents an erosional remnant carved from flat-lying rock.
- Cable yarding.** A method of moving felled trees to a nearby central area for transport to a processing facility. Most cable yarding systems involve use of a drum, a pole, and wire cables in an arrangement similar to that of a rod and reel used for fishing.

To reduce friction and soil disturbance, felled trees generally are reeled in while one end is lifted or the entire log is suspended.

- Calcareous soil.** A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.
- Calcic horizon.** A mineral soil horizon of secondary carbonate enrichment that is more than 15 centimeters thick, has a calcium carbonate equivalent of more than 15 percent, and has a calcium carbonate equivalent at least 5 percent higher than the underlying horizon.
- Calcium carbonate equivalent.** The amount of calcium carbonate in a soil measured by treating the soil sample with hydrochloric acid (HCL). The evolved carbon dioxide (CO₂) is measured, and the amount of carbonate is then calculated as calcium carbonate (CaCO₃).
- California bearing ratio (CBR).** The load-supporting capacity of a soil as compared to that of standard crushed limestone, expressed as a ratio. First standardized in California. A soil having a CBR of 16 supports 16 percent of the load that would be supported by standard crushed limestone, per unit area, with the same degree of distortion.
- Cambic horizon.** A mineral soil horizon that has the texture of loamy very fine sand or finer, has soil structure rather than rock structure, and contains some weatherable minerals. It is characterized by the alteration or removal of mineral material as indicated by mottling or gray color, stronger chroma or redder hue than the underlying horizons, or the removal of carbonates. The cambic horizon lacks cementation or induration and has too few evidences of illuviation to meet the requirements for an argillic horizon.
- Canopy.** The leafy crown of trees or shrubs. (See Crown.)
- Canyon.** A long, deep, narrow, very steep sided valley with high, precipitous walls in an area of high local relief.
- Capillary water.** Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.
- Catena.** A sequence of soils on a landscape that are about the same age and formed in similar kinds of parent material under similar climatic conditions but have different characteristics as a result of differences in relief and drainage.
- Cathodic protection.** Control of the electrolytic corrosion of an underground or underwater metallic structure, such as a pipeline, by the application of an electrical current in such a way that the structure acts as the cathode rather than the anode of an electrolytic cell. (See Coatings for pipelines.)
- Cation.** An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.
- Cation-exchange capacity (CEC).** The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.
- Caving potential.** The potential for cut banks in shallow excavations to cave in or collapse.
- CEC.** See Cation-exchange capacity.
- Chemical treatment.** Control of unwanted vegetation through the use of chemicals.
- Cirque.** A semicircular, concave, bowl-like area that has steep faces primarily resulting from the erosiveness of a mountain glacier.
- Clast.** An individual constituent, grain, or fragment of a detrital sediment or sedimentary rock produced by the physical disintegration of a larger rock mass.

- Clay.** As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.
- Clay depletions.** Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.
- Clay film.** A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.
- Clayey.** Includes the texture classes sandy clay, silty clay, and clay.
- Claypan.** A dense, compact, slowly permeable layer in the subsoil that has a much higher content of clay than the overlying material. A claypan commonly is hard when dry and plastic or sticky when wet.
- Climax plant community.** The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.
- Coarse fragments.** See Rock fragments.
- Coarse textured soil.** Sand or loamy sand.
- Coatings for pipelines.** Coatings used as a barrier to the flow of electricity and moisture, thereby preventing the formation of corrosion cells.
- Cobble (or cobblestone).** A rounded or partly rounded fragment of rock 3 to 10 inches (75 to 250 millimeters) in diameter.
- Cobbly soil material.** Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (75 to 250 millimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.
- COLE (coefficient of linear extensibility).** See Linear extensibility percent.
- Colluvium.** Unconsolidated, unsorted earth material transported or deposited on side slopes and/or at the base of slopes by mass movement, or direct gravitational action, and by local unconcentrated runoff.
- Compaction.** The process by which the soil grains are rearranged to decrease void space and bring them into closer contact with one another, thereby increasing bulk density.
- Complex slope.** Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.
- Complex, soil.** A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.
- Concretions.** Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.
- Conglomerate.** A coarse grained, clastic sedimentary rock composed of rounded or subangular rock fragments more than 2 millimeters in diameter, commonly with a matrix of sand and finer textured material. Cementing agents include silica, calcium carbonate, and iron oxide. Conglomerate is the consolidated equivalent of gravel.
- Consistence, soil.** Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."

- Control section.** The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.
- Corrosion.** Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.
- Crown.** The upper part of a tree or shrub, including the living branches and their foliage.
- Cryoturbation.** A collective term used to describe all soil movement as a result of frost action, including the folding, breaking, and dislocating of beds and lenses of unconsolidated material.
- Culmination of the mean annual increment (CMAI).** The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.
- Debris flow (mass movement).** The process, associated sediment (debris flow deposit), or resultant landform characterized by a very rapid type of flow dominated by sudden downslope movement of a mass of rock, soil, and mud (more than 50 percent particles that are more than 2 millimeters in size) that behaves much like viscous fluid whether it is saturated or relatively dry.
- Deep soil.** See Depth, soil.
- Densic contact.** The contact between soil and dense materials that are relatively unaltered and are not cemented. The dense materials are commonly volcanic mudflow, glacial till, or extremely weathered bedrock.
- Depth, soil.** Generally, the thickness of the soil over a restrictive layer. Very deep soils are more than 60 inches deep over a restrictive layer; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.
- Distal alluvial fan.** The portion of an alluvial fan where relatively fine textured alluvium is deposited farthest from the source area.
- Drainage class (natural).** Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained*. These classes are defined in the “Soil Survey Manual.”
- Drainage, surface.** Runoff, or surface flow of water, from an area.
- Drainageway.** A general term for a course or channel along which water moves in draining an area.
- Draw.** A small stream channel that generally is more open and has a broader floor than a ravine or gulch.
- Drift.** Pulverized and other rock material transported by glacial ice and then deposited. Also, the sorted and unsorted material deposited by streams flowing from glaciers.
- Duff.** A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.
- Duripan.** A subsurface soil horizon that is cemented with illuvial silica, commonly opal or microcrystalline forms, to the degree that less than 50 percent of the volume of air-dry fragments will slake in water or hydrochloric acid. The duripan impedes the downward movement of water and restricts root growth. Water perches or stacks on the pan, resulting in a high water table.

EC. See Electrical conductivity.

Ecological site. An area where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. An ecological site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other ecological sites in kind and/or proportion of species or in total production.

Electrical conductivity (EC). The electrolytic conductivity of an extract from saturated soil paste.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Eolian material. Material transported and deposited by wind, including earth material such as dune sand, sand sheets, loess, and clay.

Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Epiclastic. Refers to mechanically deposited sediments (gravel, sand, and mud) consisting of the weathered products of older rocks.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Erosion pavement. A concentration of gravel or coarser fragments that remains on the soil surface after finer particles have been removed by running water or wind.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. The term is most commonly applied to cliffs produced by differential erosion. Synonym: scarp.

Extremely stony soil material. Material that has more than 50 percent stones, by volume.

Extrusive. Pertaining to igneous rock and sediment derived from deep-seated molten matter (magma) deposited and cooled on the earth's surface, including lava flows and tephra deposits.

Facies. The aspect, appearance, and characteristics of a rock unit, generally reflecting the conditions of its origin.

Family, soil. The most specific hierarchical category in soil taxonomy.

Fan remnant. A general term for landforms that are the remaining parts of older fan landforms, such as alluvial fans, fan aprons, inset fans, and fan skirts, that either have been dissected (erosional fan remnants) or partially buried (nonburied fan remnants). An erosional fan remnant has a relatively flat summit that is a relict fan surface. A nonburied fan remnant is a relict surface in its entirety.

Fan terrace. See Fan remnant.

- Fertility, soil.** The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.
- Fibric soil material (peat).** The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.
- Field moisture capacity.** The moisture content of a soil, expressed as a percentage of the oven-dry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity*, *normal moisture capacity*, or *capillary capacity*.
- Fill slope.** A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.
- Fine textured soil.** Sandy clay, silty clay, or clay.
- Firebreak.** Area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.
- Flood basin.** A broad, flat area between a sloping plain and the natural levee of a river; occupied primarily by clayey soils.
- Flood plain.** The nearly level plain that borders a stream and is subject to inundation under flood-stage conditions unless protected artificially. It is commonly a constructional landform consisting of sediment deposited during overflow and lateral migration of a stream.
- Fluvial.** Of or pertaining to rivers; produced by river action.
- Foothill.** A steeply sloping upland that has relief of as much as 1,000 feet (300 meters) and fringes a mountain range or high-plateau escarpment.
- Footslope.** The position that forms the inner, gently inclined surface at the base of a hillslope. In profile, footslopes are commonly concave. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).
- Forb.** Any herbaceous plant not a grass or a sedge.
- Forest cover.** All trees and other woody plants (underbrush) covering the ground in a forest.
- Forest type.** A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.
- Formation (geologic).** A body of rock strata that consists dominantly of a certain lithologic type or combinations of types. Formations may be combined into groups or subdivided into members.
- Fragments.** Unattached cemented pieces of bedrock, bedrocklike material, durinodes, concretions, and nodules 2 millimeters in diameter or larger in mineral soils; woody material 20 millimeters in diameter or larger in organic soils.
- Frigid temperature regime.** See Temperature regime, soil.
- Frost action, potential..** The potential for frost action is the susceptibility of the soil to upward or lateral movement by the formation of segregated ice lenses. It includes the potential for frost heave and the subsequent loss of soil strength when the ground thaws.
- Genesis, soil.** The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.
- Gilgai.** The microrelief of soils produced by expansion and contraction with changes in moisture content. It is characteristic of soils containing large amounts of smectitic clay and that swell and shrink considerably with wetting and drying.

Glacial. Of or pertaining to the presence and activity of ice and glaciers, such as glacial erosion; pertaining to distinctive features and material produced by or derived from glaciers and ice sheets, such as glacial lakes; or pertaining to an ice age or region of glaciation.

Glacial drift. See Drift.

Glacial outwash. See Outwash.

Glacial till. See Till.

Glaciofluvial deposits. Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur as outwash plains, valley trains, deltas, kames, eskers, and kame terraces.

Glaciolacustrine deposits. Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial meltwater. Many deposits are interbedded or laminated with varves or rhythmites.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Granite. A felsic igneous intrusive rock containing quartz and orthoclase with smaller amounts of sodic plagioclase and commonly muscovite.

Granitic. A textural term commonly pertaining to an igneous intrusive rock of felsic to intermediate composition. Referring to granitelike rock, but not necessarily true granite. Commonly applied to granite, quartz monzonite, granodiorite, and diorite.

Granodiorite. An igneous intrusive rock that is intermediate between felsic and mafic in composition and contains quartz and somewhat more plagioclase than orthoclase.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 to 75 millimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (75 millimeters) in diameter.

Ground water. Water filling all the unblocked pores of the material below the water table.

Gully. A small channel with steep sides cut by the concentrated, but intermittent, flow of water commonly during and immediately following heavy rainfall or following icemelt or snowmelt. A gully generally is an obstacle to wheeled vehicles and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Gypsum content. The percent, by weight, of hydrated calcium sulfates in the fraction of the soil less than 20 millimeters in size.

Hard bedrock. Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Hardpan. A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

High terrace. The highest position of a steplike fan terrace. It is between an intermediate fan terrace and a foothill.

High water table. See Water table.

Hill. A generic term for an area of the land surface that rises as much as 1,000 feet (300 meters) above surrounding lowlands, commonly has restricted summit area relative to surrounding surfaces, and has a well defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and commonly is dependent on local usage.

Holocene. The epoch of the Quaternary period of geologic time that extends from the end of the Pleistocene (about 10 to 12 thousand years ago) to the present.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydric soils. Soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential.

The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Igneous rock. Rock formed by solidification from a molten or partially molten state. Major varieties include intrusive and extrusive rock. Examples are andesite and basalt.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Index surface runoff. A concept that indicates the relative potential loss of water from an area by flow over the land under specific conditions. It is assumed that the surface of the soil is bare, the steady ponded infiltration rate is the applicable infiltration stage, the soil moisture state is very moist or wet, bulk density is within the limits of the mapping concept, and the standard storm or amount of water addition from snowmelt is 50 millimeters in a 24-hour period with no more than 25 millimeters in any single 1-hour period.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Intermediate terrace. The middle position of a steplike fan terrace. It is between a low fan terrace and high fan terrace.

Intermittent stream. A stream, or reach of a stream, that does not flow year-round (commonly is dry for 3 months or more annually). Its channel generally is below the local water table. The stream flows only when it receives base flow during wet periods or when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Intrusive. Pertaining to igneous rock derived from molten matter (magma) that invaded pre-existing rock and cooled below the surface of the earth.

Iron depletions. Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

K factor. A measurement of potential soil erodibility caused by detachment of soil particles by water.

Kaolinitic. A mineralogy class term used to indicate that the dominant clay mineral is kaolinite. The mineral has a 1:1 layer structure composed of aluminum silicates.

Kf. See Soil erodibility factors.

Knoll. A small, low, rounded hill rising above adjacent landforms.

Ksat. See Saturated hydraulic conductivity.

Kw. See Soil erodibility factors.

Lahar. The process, associated sediments, or resultant landform characterized by a mudflow composed chiefly of volcanoclastic materials on or near the flank of a volcano. The debris carried in the flow includes pyroclastic material, blocks from primary lava flows, and epiclastic material.

Landslide. The rapid downhill movement of a mass of soil and loose rock, generally when wet or saturated. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

Lava flow. A solidified body of rock formed from the lateral, surficial outpouring of molten lava from a vent or fissure; commonly lobate in form.

Leaching. The removal of soluble material from soil or other material by percolating water.

LEP. See Linear extensibility percent.

Linear extensibility percent (LEP). The linear expression of the volume difference between the water content of the natural soil fabric at $1/3$ -bar or $1/10$ -bar and oven dryness. The volume change is reported as a percent for the whole soil. Soil composed of 2 to 1: clay, such as smectite, shrinks when dry, forming cracks, and swells when it becomes moist or wet, closing the cracks. Shrink-swell potential classes are *low*, LEP of less than 3 and COLE of less than 0.03; *moderate*, LEP of 3 to less than 6 and COLE of 0.03 to less than 0.06; *high*, LEP of 6 to less than 9 and COLE of 0.06 to less than 0.09; and *very high*, LEP of 9 or more and COLE of 0.09 or more.

Liquid limit (LL). The moisture content at which the soil passes from a plastic to a liquid state.

Lithic contact. The boundary between soil and coherent underlying material. When moist, this material is impractical to dig with a spade. It is indurated, very strongly cemented, or strongly cemented and commonly is hard or relatively unweathered bedrock.

Lithologic discontinuity. A significant change in particle-size distribution or mineralogy that indicates differences in lithology within a soil. The term can also denote an age difference. Evidence of lithologic discontinuity includes abrupt texture contacts, contrasting sand sizes, a bedrock lithology that differs from the lithology of rock fragments in the soil, stone lines, distribution of rock fragments, weathering rinds on rock fragments, shape of rocks, soil color, or the presence of micromorphological features.

LL. See Liquid limit.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loamy. Includes the texture classes coarse sandy loam, sandy loam, fine sandy loam, very fine sandy loam, loam, silt loam, silt, clay loam, sandy clay loam, and silty clay loam.

Low strength. The soil is not strong enough to support loads.

Low terrace. The lowest position of a steplike fan terrace. It is between a basin and an intermediate fan terrace.

Magma. Molten rock material that originates deep in the earth and solidifies to form igneous rock.

Masses. Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

Meander belt. The zone within which migration of a meandering channel occurs; the flood-plain area included between two imaginary lines drawn tangential to the outer bends of active channel loops. Landform components of the meander-belt surface are produced by a combination of gradual (lateral and down valley) migration of meander loops and avulsive channel shifts causing abrupt cutoffs of loop segments.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Mesic temperature regime. See Temperature regime, soil.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement in the earth's crust. Nearly all such rocks are crystalline. Examples are schist, gneiss, quartzite, slate, and marble.

- Metamorphism.** The mineralogical, chemical, and structural adjustment of solid rocks to physical and chemical conditions imposed at depth below the surface zones of weathering and cementation. These conditions differ from the conditions under which the rocks originated.
- Metasediment.** A sediment or sedimentary rock that shows evidence of having been subjected to metamorphism.
- Metavolcanic rock.** A volcanic rock that shows evidence of metamorphism but has not been fully metamorphosed into metamorphic rock.
- Mid fan.** The portion of an alluvial fan between the proximal and distal portions where relatively medium textured alluvium is deposited.
- Mineral soil.** Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.
- Miscellaneous area.** An area that has little or no natural soil and supports little or no vegetation.
- Moderately coarse textured soil.** Coarse sandy loam, sandy loam, or fine sandy loam.
- Moderately deep soil.** See Depth, soil.
- Moderately fine textured soil.** Clay loam, sandy clay loam, or silty clay loam.
- Mollic epipedon.** A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.
- Moraine (landform).** A general term for a landform composed mainly of till deposited by either an active or extinct glacier. Some types are disintegration, end, lateral, recessional, and terminal.
- Morphology, soil.** The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.
- Mound-swale microrelief.** Circular or oval domes, generally 0.2 foot to 2 feet in height and 1 to 10 feet in diameter, with intervening basin-shaped depressions that commonly do not have external drainage. Also referred to as hogwallow or mima mounds in the western United States.
- Mountain.** A natural elevation of the land surface that rises more than 1,000 feet (300 meters) above surrounding lowlands, commonly has limited summit area relative to surrounding surfaces, and generally has steep sides (slopes of more than 25 percent) with or without considerable bare-rock surface. A mountain can occur as a single, isolated mass or in a group forming a chain or range. Mountains are formed primarily by tectonic and/or volcanic activity and by differential erosion.
- Muck.** Unconsolidated soil material consisting primarily of highly decomposed organic material in which the original plants are not recognizable. It generally contains more mineral material and is darker than peat. (See Sapric soil material.)
- Mudflow.** The process, associated sediment (mudflow deposit), or resultant landform characterized by a very rapid type of earthflow dominated by a sudden, downslope movement of a saturated mass of rock, soil, and mud (in which more than 50 percent of the particles are less 2 millimeters in size) that behaves much as a viscous fluid.
- Mudstone.** A blocky or massive, fine grained sedimentary rock indurated by clay and silt in approximately equal amounts. Also, a general term for clay, silt, claystone, siltstone, shale, and argillite that is used only when the amounts of clay and silt are not known or cannot be precisely determined.
- Munsell notation.** A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.
- Natural drainage class.** See Drainage class.

- Neutral soil.** A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)
- Nodules.** Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up nodules. If formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.
- Nose slope.** A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent.
- Nutrient, plant.** Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.
- Ochric epipedon.** A dark, thin surface horizon or a light colored surface horizon that fails to meet the criteria for any of the other epipedons.
- OM.** See Organic matter.
- Organic matter.** Plant and animal residue in the soil in various stages of decomposition.
- Outwash.** Gravel, sand, and silt, commonly stratified, deposited by glacial meltwater.
- Outwash plain.** An extensive lowland area of coarse textured glaciofluvial material. An outwash plain commonly is smooth; where pitted as a result of the melting of incorporated ice masses, it generally has low relief.
- Oxbow.** A closely looping stream meander having a curvature so extreme that only a neck of land is left between the two parts of the stream.
- Paleosol.** A soil that formed in a particular area with distinctive morphological features resulting from a soil-forming environment that no longer exists in the area. The pedogenic process was either altered as a result of external environmental changes or interrupted by burial. A paleosol (or component horizon) is classified as relict if it has persisted without major alteration of morphology by the prevailing pedogenic environment. An exhumed paleosol is one that was buried and has been re-exposed by erosion of the mantle. Most paleosols have been affected by some subsequent modification of the morphology of diagnostic horizons and truncation of the profile.
- Pan.** A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan*, *fragipan*, *claypan*, *plowpan*, and *traffic pan*.
- Paralithic contact.** A contact between soil and relatively unaltered materials that are extremely weakly cemented to moderately cemented. Commonly, these materials are partially weathered or are soft bedrock.
- Parent material.** The unconsolidated and chemically weathered mineral and organic material in which the solum of a soil is formed as a result of pedogenic processes.
- Peat.** Unconsolidated soil material consisting largely of undecomposed or slightly decomposed organic matter that has accumulated under excessive moisture conditions. (See Fibric soil material.)
- Ped.** An individual natural soil aggregate, such as a granule, a prism, or a block.
- Pedogenic.** Pertaining to processes that add, transfer, transform, or remove soil constituents. Pedology is the scientific study of soils, including their origins, characteristics, and uses.
- Pedon.** The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 to 10 square meters), depending on the variability of the soil.
- Perched water table.** The upper surface of unconfined ground water separated from an underlying main body of ground water by an unsaturated zone.
- Percolation.** The downward movement of water through the soil.
- Permafrost.** Soil or rock that has remained at or below 0 degrees C for at least 2 years. It is defined on the basis of temperature and is not necessarily frozen.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as “saturated hydraulic conductivity,” which is defined in the “Soil Survey Manual.” In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as “permeability.” Terms describing permeability, measured in inches per hour, are as follows:

Impermeable	less than 0.0015 inch
Very slow	0.0015 to less than 0.06 inch
Slow	0.06 to less than 0.2 inch
Moderately slow	0.2 to less than 0.6 inch
Moderate	0.6 inch to less than 2.0 inches
Moderately rapid	2.0 to less than 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

In micrometers per second (um/sec), the measurements are as follows:

Impermeable	less than 0.01 um/sec
Very slow	0.01 to less than 0.42 um/sec
Slow	0.42 to less than 1.4 um/sec
Moderately slow	1.4 to less than 4.2 um/sec
Moderate	4.2 to less than 14.1 um/sec
Moderately rapid	14.1 to less than 42.3 um/sec
Rapid	42.3 to 141 um/sec
Very rapid	more than 141 um/sec

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

PI. See Plasticity index.

Piedmont (noun). An area, plain, slope, glacier, or other feature at the base of a mountain; for example, a foothill or bajada. In the United States, the Piedmont is a low plateau that extends from New Jersey to Alabama and lies east of the Appalachian Mountains.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plasticity index (PI). The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plateau. A comparatively flat area of great extent and elevation. Specifically, an extensive land region considerably elevated (more than 100 meters) above adjacent lower lying terrain that is commonly limited on at least one side by an abrupt descent and has a flat or nearly level surface. A relatively large part of a plateau surface is near summit level.

Pleistocene. The epoch of the Quaternary period of geologic time following the Pliocene and preceding the Holocene (approximately 2 million to 10 thousand years ago). Also refers to the corresponding (time-stratigraphic) “series” of earth material.

Pluton. A deep-seated igneous intrusion.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

- Poorly graded.** Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.
- Potential native plant community.** See Climax plant community.
- Potential rooting depth (effective rooting depth).** The depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.
- Prescribed burning.** Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.
- Productivity, soil.** The capability of a soil for producing a specified plant or sequence of plants under specific management.
- Profile, soil.** A vertical section of the soil extending through all its horizons and into the parent material.
- Proper grazing use.** Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.
- Proximal alluvial fan.** The portion of an alluvial fan where relatively coarse textured alluvium is deposited closest to the source area.
- Pyroclastic.** Pertaining to fragmental material produced by commonly explosive aerial ejection of clastic particles from a volcanic vent. Such material may accumulate on land or under water.
- Rangeland.** Land on which the potential natural vegetation is predominantly grasses, grasslike plants, forbs, or shrubs. It includes natural grasslands, savannas, many wetlands, some deserts, tundras, and areas that support certain forb and shrub communities.
- Reach (stream).** A length of a stream used as a unit of study. It has a specified feature that is fairly uniform throughout, such as hydraulic characteristics or flood damage. Reaches are physically defined at each end by cross sections that include the channel and the flood plain. The upstream end is called the head, and the downstream end is called the foot.
- Reaction, soil.** A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

- Redoximorphic concentrations.** Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

- Redoximorphic depletions.** Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation.
- Redoximorphic features.** Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.
- Reduced matrix.** A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.
- Regolith.** All unconsolidated earth material above the solid bedrock. It includes material weathered in place from all kinds of bedrock and alluvial, glacial, eolian, lacustrine, and pyroclastic deposits. Soil scientists regard as soil only that part of the regolith that has been modified by organisms and soil-forming processes. Most engineers describe the entire regolith, even to a great depth, as "soil."
- Relief.** The elevations or inequalities of a land surface, considered collectively.
- Remnant.** The remaining part of a larger landform or land surface that has been dissected or partially buried.
- Residuum (residual soil material).** Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.
- Restrictive feature.** A nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly restrict the movement of water and air through the soil or that otherwise provide an unfavorable root environment. Common forms include cemented layers, dense layers, abrupt or stratified layers, and strongly contrasting textures. Examples are a duripan, lithic bedrock, and paralithic bedrock.
- Rhyolite.** Extrusive igneous rock, generally porphyritic and exhibiting flow texture, with phenocrysts of quartz and alkali feldspar in a glassy cryptocrystalline ground mass. The extrusive equivalent of granite.
- Rill.** A small, steep-sided channel resulting from erosion. It is cut by a concentrated, but intermittent, flow of water, usually during and immediately following moderate rains or following icemelt or snowmelt. Generally, a rill is not an obstacle to wheeled vehicles and is shallow enough to be obliterated by ordinary tillage.
- Riverwash.** Barren alluvial areas of unstabilized sand, silt, clay, or gravel reworked frequently by stream activity.
- Road cut.** A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.
- Rock fragments.** Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.
- Rock outcrop.** Exposures of bedrock, excluding lava and rock-lined pits.
- Root zone.** The part of the soil that can be penetrated by plant roots.
- Runoff.** The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.
- Saline soil.** A soil containing soluble salts in an amount that impairs the growth of plants. A saline soil does not contain excess exchangeable sodium. Salinity is

expressed as the electrical conductivity of a saturation extract at 25 degrees C. Salinity classes, expressed in millimhos per centimeter, are as follows:

Nonsaline	0 to 2
Very slightly saline	2 to 4
Slightly saline	4 to 8
Moderately saline	8 to 16
Strongly saline	more than 16

Saline-sodic soil. A soil that contains sufficient exchangeable sodium to interfere with the growth of most crops and appreciable quantities of soluble salts. The exchangeable sodium ratio is greater than 0.15; the conductivity of the soil solution, when saturated, is greater than 4 decisiemens per meter (at 25 degrees C); and the pH is commonly 8.5 or less when the soil is saturated.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

Sandy. Includes the texture classes sand and loamy sand.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Saprolite. Soft, friable, isovolumetrically weathered bedrock that retains the fabric and structure of the parent rock and exhibits extensive intercrystal and intracrystal weathering. In pedology, the term "saprolite" has been used to refer to any unconsolidated residual material that underlies the soil and grades to hard bedrock below.

SAR. See Sodium adsorption ratio.

Saturated hydraulic conductivity (Ksat). The ease with which pores in a saturated soil transmit water. Ksat classes, expressed in terms of micrometers per second (um/sec), are as follows:

Very low	less than 0.01
Low	0.01 to less than 0.1
Moderately low	0.1 to less than 1
Moderately high	1 to less than 10
High	10 to 100
Very high	more than 100

In inches per hour, the measurements are as follows:

Very low	less than 0.001417
Low	0.001417 to less than 0.01417
Moderately low	0.01417 to less than 0.1417
Moderately high	0.1417 to less than 1.417
High	1.417 to 14.17
Very high	more than 14.17

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Scarification. The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

Sedimentary rock. A consolidated deposit of clastic particles, chemical precipitates, or organic matter accumulated at or near the surface of the earth under "normal"

low temperature and pressure conditions. Sedimentary rock includes the consolidated equivalents of alluvial, colluvial, drift, eolian, lacustrine, and marine deposits. Examples are sandstone, siltstone, mudstone, claystone, shale, conglomerate, limestone, dolomite, and coal.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock that formed as a result of the induration of a clay, silty clay, or silty clay loam deposit and has the tendency to split into thin layers (fissility).

Shallow soil. See Depth, soil.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shrink-swell potential. See Linear extensibility percent.

Shoulder. The position that forms the uppermost inclined surface near the top of a hillslope. It is a transition from backslope to summit. The surface is dominantly convex in profile and erosional in origin.

Side slope. A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silica-sesquioxide ratio. The ratio of the number of molecules of silica to the number of molecules of alumina and iron oxide. The more highly weathered soils or their clay fractions in warm-temperate, humid regions, and especially those in the tropics, generally have a low ratio.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slickensides. Polished and grooved surfaces produced by one mass sliding past another. In soils, slickensides may occur at the bases of slip surfaces on the steeper slopes; on faces of blocks, prisms, and columns; and in swelling clayey soils, where there is marked change in moisture content.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey, classes for simple slopes are as follows:

Level	0 to 1 percent
Nearly level	0 to 2 percent
Gently sloping	2 to 5 percent
Moderately sloping	5 to 8 percent
Strongly sloping	8 to 15 percent
Moderately steep	15 to 30 percent
Steep	30 to 50 percent
Very steep	more than 50 percent

Classes for complex slopes are as follows:

Level	0 to 1 percent
Nearly level	0 to 2 percent
Undulating	2 to 5 percent
Gently rolling	5 to 8 percent
Rolling	8 to 15 percent
Hilly	15 to 30 percent
Steep	30 to 50 percent
Very steep	more than 50 percent

Sodic (alkali) soil. A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Sodicity. The degree to which a soil is affected by exchangeable sodium. Sodicity is expressed as a sodium adsorption ratio (SAR) of a saturation extract, or the ratio of Na^+ to $\text{Ca}^{++} + \text{Mg}^{++}$. The degrees of sodicity and their respective ratios are:

Nonsodic	0-5:1
Very slightly sodic	5-13:1
Slightly sodic	13-30:1
Moderately sodic	30-45:1
Strongly sodic	45-90:1
Very strongly sodic	more than 90:1

Sodium adsorption ratio (SAR). A measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration.

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil erodibility factors. The K_w and K_f factors quantify the susceptibility of soil to detachment by water. These erodibility factors predict the long-term average soil loss that results from sheet and rill erosion when various cropping systems and conservation techniques are used. The whole soil is considered in the K_w factor, but only the fine-earth fraction, which is the material less than 2 millimeters in diameter, is considered in the K_f factor.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of

the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stone line. A sheetlike lag concentration of rock fragments in surficial sediment. In cross section, the line may be marked only by scattered fragments or it may be a discrete layer of fragments. The fragments are more commonly pebbles or cobbles than stones. A stone line generally overlies material that was subject to weathering, soil formation, and erosion before deposition of the overlying material. Many stone lines appear to be buried erosion pavement originally formed by running water on the land surface and concurrently covered by surficial sediment.

Stones. Rock fragments 10 to 24 inches (250 to 600 millimeters) in diameter if rounded.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Stony soil material. Material that has 15 to 35 percent stones, by volume.

Strath terrace. A stream terrace that formed as an erosional surface cut on bedrock and that is thinly mantled with stream deposits (alluvium).

Stratified. Referring to geologic deposits that were formed, arranged, or laid down in layers. Layers in soils that are a result of the processes of soil formation are called horizons; those inherited from the parent material are called strata.

Stream terrace. One of a series of platforms in a stream valley that flanks and is more or less parallel to the stream channel, originally formed near the level of the stream, and represents the dissected remnants of an abandoned flood plain, streambed, or valley floor produced during an earlier period of erosion or deposition.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Summit. The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the “plow layer,” or the “Ap horizon.”

Surface runoff. See Index surface runoff.

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

T factor. The soil loss tolerance, which is defined as the maximum amount of erosion at which the quality of a soil as a medium for plant growth can be maintained. Maintaining the quality of the soil includes maintaining the surface soil as a seedbed for plants, maintaining the atmosphere-soil interface to allow the entry of air and water into the soil and still protect the underlying soil from wind and water erosion, and maintaining the total soil volume as a reservoir for water and plant nutrients, which is preserved by minimizing soil loss.

Talus. Rock fragments of any size or shape (commonly coarse and angular) at the base of a cliff or very steep rock slope; the accumulated mass of such loose, broken rock formed mainly by falling, rolling, or sliding.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are

designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

Temperature regime, soil. A system that categorizes for taxonomic purposes general, long-term soil temperature conditions at the standard depth of 20 inches or at the surface of the bedrock, whichever is shallower. The various regimes are defined according to the freezing point of water or to the high and low extremes for significant biological activity. The regimes, which are defined in "Keys to Soil Taxonomy," are as follows:

Pergellic.—Soils that have a mean annual temperature of less than 32 degrees F and have permafrost.

Cryic.—Soils that have a mean annual temperature of 32 to 47 degrees F and remain cold in summer.

Frigid.—Soils that have a mean annual temperature similar to that of the cryic regime but have a mean summer temperature at least 9 degrees warmer.

Mesic.—Soils that have a mean annual temperature of 47 to 59 degrees F, and the difference between the mean summer and mean winter temperature is more than 9 degrees.

Thermic.—Soils that have a mean annual temperature of 59 to 72 degrees F, and the difference between the mean summer and mean winter temperature is more than 9 degrees.

Hyperthermic.—Soils that have a mean annual temperature of more than 72 degrees F, and the difference between the mean summer and mean winter temperature is more than 9 degrees.

Tephra. A collective term for any and all clastic materials, regardless of size or composition, ejected from a vent during a volcanic eruption and transported through the air. Includes volcanic ash (less than 2 millimeters in size), volcanic blocks (more than 64 millimeters in size), volcanic cinders (more than 2 millimeters in size), lapilli (a size of 2 to 76 millimeters and specific gravity of more than 2.0), pumice (a size of more than 2 millimeters and specific gravity of less than 1.0), and scoria (a size of more than 2 millimeters and specific gravity of less than 2.0).

Terminal moraine. An end moraine that marks the farthest advance of a glacier and commonly has the form of a massive arcuate or concentric ridge, or complex of ridges, underlain by till and other types of drift.

Terrace (geomorphologic). A steplike surface bordering a valley floor or shoreline that represents the former position of a flood plain, lake, or seashore. The term is commonly applied to both the relatively flat summit surface (tread) that has been cut or built up by stream or wave action and the steeper descending slope (scarp or riser) that grades to a lower base level of erosion. Practically, terraces are considered to be generally flat alluvial areas above the 100-year flood stage.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Thermic temperature regime. See Temperature regime, soil.

Till. Unsorted, nonstratified glacial drift consisting of clay, silt, sand, gravel, cobbles, stones, and boulders transported and deposited by glacial ice.

Toeslope. The outermost inclined surface at the base of a hill; part of a footslope.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

- Trace elements.** Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.
- Tuff.** A generic term for any consolidated or cemented deposit that is 50 percent volcanic ash (less than 2 millimeters in size). Various types of tuff can be recognized by their composition; acidic tuff is dominantly acidic particles and basic tuff is dominantly basic particles.
- Ultramafic rock.** An igneous rock composed chiefly of dark mafic (ferromagnesian) minerals. Common forms include rocks with a high content of magnesium and iron, such as talc-schist, serpentinite, peridotite, and various partially serpentinized rocks.
- Umbric epipedon.** A thick, dark, humus-rich surface horizon (or horizons) that has base saturation of less than 50 percent and pedogenic soil structure. It may include the upper part of the subsoil.
- Unified soil classification.** A system for classifying mineral and organic soils for engineering purposes based on particle-size characteristics, liquid limit, and plasticity index.
- Upland (geomorphologic).** A general term for the higher land of a region in contrast to the low-lying, adjacent land, such as a valley or plain; land at a higher elevation than the flood plain or low stream terrace; or land above the footslope zone of the hillslope continuum.
- Valley.** An elongated, relatively large, externally drained depression that formed primarily through stream erosion or glacial activity.
- Valley fill.** The unconsolidated sediment deposited by any agent (water, wind, ice, or mass wasting) that fills or partly fills a valley.
- Vegetative cover.** The crown cover of all live plants in relation to the ground surface.
- Vernal pool.** A shallow surficial depression that is temporarily filled with water during periods of rain in winter and spring and is desiccated during the dry summer months. It occurs as a small poorly drained depression. Water perches above an impermeable or very slowly permeable soil horizon, a duripan, or bedrock.
- Very deep soil.** See Depth, soil.
- Very shallow soil.** See Depth, soil.
- Very stony soil material.** Material that has 35 to 50 percent stones, by volume.
- Water bars.** Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.
- Water table.** The upper surface of ground water or the level below which the soil is saturated by water. Also, the top of an aquifer.
- Weathering.** All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.
- WEG.** See Wind erodibility group.
- Well graded.** Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.
- Wilting point (or permanent wilting point).** The moisture content of soil, on an oven-dry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.
- Wind erodibility group (WEG).** A group of soils that have similar properties affecting their resistance to wind erosion in cultivated areas.
- Windthrow.** The uprooting and tipping over of trees by the wind.

Xeric moisture regime. The typical moisture regime in areas of Mediterranean climates, where it is moist and cool in winter and warm and dry in summer. When potential evapotranspiration is at a minimum, the moisture, which falls in winter, is particularly effective in leaching. The mean annual soil temperature is less than 22 degrees C, and the difference between the mean summer and mean winter soil temperature is 6 degrees.

Xerophytic. Pertaining to vegetation that is adapted to dry areas.

Tables

Table 1.--Temperature and Precipitation

(Recorded in the period 1971-2000 at Chico Experimental Station; Strawberry Valley; Oroville; De Sabla; and Paradise, California)

Month	Temperature						Precipitation				
	Average daily maximum	Average daily minimum	Average	2 years in 10 will have--		Average number of growing degree days*	Average	2 years in 10 will have--		Average number of days with 0.10 inch or more	Average snowfall
				Maximum temperature higher than--	Minimum temperature lower than--			Less than--	More than--		
	°F	°F	°F	°F	°F	Units	In	In	In		In
CHICO:											
January----	54.5	35.2	44.9	71	21	13	5.05	1.70	7.93	7	0.1
February---	60.6	38.8	49.7	77	25	56	4.59	1.17	7.97	6	.0
March-----	65.2	41.4	53.3	81	28	130	4.29	1.45	6.74	7	.0
April-----	72.3	44.8	58.6	90	31	256	1.59	.33	3.10	3	.0
May-----	80.3	51.2	65.8	100	37	480	.92	.02	1.61	2	.0
June-----	88.7	57.1	72.9	106	43	670	.48	.00	.83	1	.0
July-----	93.9	60.6	77.3	109	49	801	.05	.00	.00	0	.0
August-----	93.1	58.6	75.9	108	48	781	.16	.00	.16	0	.0
September--	89.1	54.7	71.9	106	42	643	.58	.00	1.01	1	.0
October----	78.8	47.2	63.0	98	33	372	1.34	.27	2.36	2	.0
November---	63.7	39.8	51.8	81	25	98	3.01	.81	4.82	5	.0
December---	55.3	34.7	45.0	70	21	14	3.62	1.30	6.00	5	.1
Yearly:											
Average---	74.6	47.0	60.8	---	---	---	---	---	---	---	---
Extreme---	117	13	---	111	19	---	---	---	---	---	---
Total-----	---	---	---	---	---	4,315	25.69	15.70	31.46	39	0.2
STRAWBERRY VALLEY:											
January----	49.5	29.5	39.5	70	15	3	14.82	4.97	23.90	11	19.5
February---	50.4	30.2	40.3	72	17	7	13.87	4.41	22.72	10	22.0
March-----	53.2	31.7	42.5	72	18	12	12.97	4.87	19.48	11	23.8
April-----	59.3	34.5	46.9	79	22	50	5.76	2.22	8.54	7	9.1
May-----	67.4	40.3	53.8	88	27	169	3.31	.62	6.02	4	.7
June-----	75.7	46.5	61.1	93	32	338	1.02	.11	1.69	2	.0
July-----	82.7	50.8	66.8	96	39	518	.28	.00	.23	0	.0
August-----	82.7	50.1	66.4	97	39	507	.32	.00	.44	0	.0
September--	77.9	46.7	62.3	94	35	371	1.64	.00	3.23	2	.0
October----	68.3	40.5	54.4	88	27	182	4.41	.88	7.97	4	.2
November---	54.7	33.2	44.0	76	20	25	10.42	3.37	15.89	8	5.2
December---	49.8	29.6	39.7	69	14	5	12.16	3.90	19.33	9	16.0
Yearly:											
Average---	64.3	38.6	51.5	---	---	---	---	---	---	---	---
Extreme---	102	4	---	98	10	---	---	---	---	---	---
Total-----	---	---	---	---	---	2,187	80.98	55.67	103.73	68	96.6

See footnote at end of table.

Table 1.--Temperature and Precipitation--Continued

Month	Temperature						Precipitation					
	Average daily maximum	Average daily minimum	Average	2 years in 10 will have--		Average number of growing degree days*	Average	2 years in 10 will have--		Average number of days with 0.10 inch or more	Average snowfall	
				Maximum temperature higher than--	Minimum temperature lower than--			Less than--	More than--			
				°F	°F			In	In			
OROVILLE:												
January----	55.4	36.7	46.1	70	25	18	5.49	1.71	8.49	7	0.0	
February---	61.1	40.1	50.6	77	27	63	5.31	1.39	9.22	8	.0	
March-----	65.6	43.9	54.7	81	31	167	5.15	1.93	7.80	8	.0	
April-----	72.3	45.9	59.1	91	34	276	1.77	.39	3.29	3	.0	
May-----	81.0	52.3	66.6	101	38	512	1.11	.09	1.89	2	.0	
June-----	89.6	57.3	73.4	107	43	682	.40	.00	.66	1	.0	
July-----	95.4	61.5	78.5	110	51	880	.08	.00	.02	0	.0	
August-----	94.3	58.8	76.6	108	47	810	.17	.00	.17	0	.0	
September--	88.1	54.0	71.1	104	43	631	.55	.00	.77	1	.0	
October----	78.8	48.5	63.7	96	36	417	1.54	.66	2.43	2	.0	
November---	64.1	41.3	52.7	81	29	111	3.80	.94	6.19	6	.0	
December---	55.0	36.7	45.8	70	23	19	4.45	1.61	7.28	7	.0	
Yearly:												
Average---	75.1	48.1	61.6	---	---	---	---	---	---	---	---	
Extreme---	115	12	---	110	22	---	---	---	---	---	---	
Total-----	---	---	---	---	---	4,586	29.83	16.31	38.06	45	0.0	
DE SABLE:												
January----	52.1	31.8	41.9	71	9	7	12.17	4.22	19.49	10	5.0	
February---	54.7	33.5	44.1	73	20	18	11.54	3.56	19.09	9	1.4	
March-----	58.1	35.0	46.6	76	23	39	10.42	4.05	15.53	10	4.1	
April-----	64.7	38.3	51.5	83	26	113	4.63	1.81	7.20	6	1.0	
May-----	73.1	44.0	58.6	92	30	275	2.46	.40	4.05	3	.0	
June-----	82.2	50.3	66.3	99	36	488	.91	.13	1.55	1	.0	
July-----	89.0	54.6	71.8	102	42	665	.15	.00	.12	0	.0	
August-----	88.8	53.4	71.1	103	41	650	.32	.00	.38	0	.0	
September--	83.3	49.7	66.5	99	35	484	1.51	.00	2.91	1	.0	
October----	72.8	43.2	58.0	92	27	269	3.28	.60	5.97	3	.0	
November---	57.6	35.4	46.5	77	22	38	8.48	2.29	13.55	7	.4	
December---	51.6	31.6	41.6	69	16	5	10.66	3.57	16.74	9	2.0	
Yearly:												
Average---	69.0	41.8	55.4	---	---	---	---	---	---	---	---	
Extreme---	109	5	---	105	13	---	---	---	---	---	---	
Total-----	---	---	---	---	---	3,051	66.52	44.96	84.97	59	13.9	

See footnote at end of table.

Table 1.--Temperature and Precipitation--Continued

Month	Temperature						Precipitation					
	Average daily maximum	Average daily minimum	Average	2 years in 10 will have--		Average number of growing degree days*	Average	2 years in 10 will have--		Average number of days with 0.10 inch or more	Average snowfall	
				Maximum temperature higher than--	Minimum temperature lower than--			Less than--	More than--			
				°F	°F			°F	°F			°F
PARADISE:												
January----	53.8	38.3	46.0	72	26	28	10.53	3.46	17.09	9	1.2	
February---	56.4	40.6	48.5	76	28	52	9.60	3.05	15.99	9	.5	
March-----	59.9	42.6	51.2	78	30	105	9.33	3.46	14.19	9	.5	
April-----	66.5	46.4	56.5	86	32	221	3.86	1.45	6.16	5	.0	
May-----	75.2	52.2	63.7	95	38	428	1.94	.16	3.23	3	.0	
June-----	84.4	59.1	71.7	102	44	651	.71	.05	1.21	1	.0	
July-----	91.2	64.4	77.8	105	51	858	.12	.00	.08	0	.0	
August-----	90.2	63.4	76.8	107	50	827	.26	.00	.33	0	.0	
September--	84.7	59.9	72.3	101	46	668	1.12	.00	2.18	1	.0	
October----	73.8	52.6	63.2	93	38	412	3.00	.54	5.52	3	.0	
November---	59.7	43.2	51.4	78	30	104	7.43	1.85	12.72	7	.0	
December---	53.6	38.2	45.9	71	25	26	8.22	3.01	12.72	8	.5	
Yearly:												
Average---	70.8	50.1	60.4	---	---	---	---	---	---	---	---	
Extreme---	113	14	---	108	23	---	---	---	---	---	---	
Total-----	---	---	---	---	---	4,381	56.11	37.87	71.59	55	2.8	

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50 degrees F).

Table 2.--Freeze Dates in Spring and Fall

(Recorded in the period 1971-2000 at Chico Experimental Station; Strawberry Valley; Oroville; De Sabla; and Paradise, California. Absence of an entry indicates that data are not available)

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
CHICO:			
Last freezing temperature in spring:			
1 year in 10 later than--	Feb. 5	Mar. 16	Apr. 28
2 years in 10 later than--	Jan. 20	Mar. 3	Apr. 15
5 years in 10 later than--	Dec. 6	Feb. 7	Mar. 23
First freezing temperature in fall:			
1 year in 10 earlier than--	Nov. 29	Nov. 5	Oct. 27
2 years in 10 earlier than--	Dec. 12	Nov. 17	Nov. 2
5 years in 10 earlier than--	Jan. 13	Dec. 8	Nov. 13
STRAWBERRY VALLEY:			
Last freezing temperature in spring:			
1 year in 10 later than--	Apr. 27	May 14	June 8
2 years in 10 later than--	Apr. 15	May 7	June 1
5 years in 10 later than--	Mar. 23	Apr. 22	May 18
First freezing temperature in fall:			
1 year in 10 earlier than--	Nov. 3	Oct. 17	Sept. 28
2 years in 10 earlier than--	Nov. 12	Oct. 24	Oct. 5
5 years in 10 earlier than--	Nov. 30	Nov. 7	Oct. 20

Table 2.--Freeze Dates in Spring and Fall--Continued

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
OROVILLE:			
Last freezing temperature in spring:			
1 year in 10 later than--	Jan. 4	Feb. 14	Mar. 29
2 years in 10 later than--	---	Feb. 4	Mar. 16
5 years in 10 later than--	---	Jan. 8	Feb. 19
First freezing temperature in fall:			
1 year in 10 earlier than--	Dec. 19	Nov. 27	Oct. 24
2 years in 10 earlier than--	Jan. 7	Dec. 7	Nov. 5
5 years in 10 earlier than--	---	Dec. 31	Nov. 27
DE SABLE:			
Last freezing temperature in spring:			
1 year in 10 later than--	Apr. 3	May 2	May 25
2 years in 10 later than--	Mar. 17	Apr. 23	May 16
5 years in 10 later than--	Feb. 13	Apr. 5	Apr. 30
First freezing temperature in fall:			
1 year in 10 earlier than--	Oct. 27	Oct. 21	Oct. 4
2 years in 10 earlier than--	Nov. 11	Oct. 30	Oct. 12
5 years in 10 earlier than--	Dec. 12	Nov. 15	Oct. 29

Table 2.--Freeze Dates in Spring and Fall--Continued

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
PARADISE:			
Last freezing temperature in spring:			
1 year in 10 later than--	Jan. 18	Feb. 18	Apr. 16
2 years in 10 later than--	Dec. 29	Feb. 5	Apr. 2
5 years in 10 later than--	---	Jan. 6	Mar. 6
First freezing temperature in fall:			
1 year in 10 earlier than--	Dec. 29	Dec. 3	Nov. 8
2 years in 10 earlier than--	Jan. 23	Dec. 16	Nov. 17
5 years in 10 earlier than--	---	Jan. 14	Dec. 3

Table 3.--Growing Season

(Recorded in the period 1971-2000 at Chico
Experimental Station; Strawberry Valley;
Oroville; De Sabla; and Paradise, California)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F Days	Higher than 28 °F Days	Higher than 32 °F Days
CHICO:			
9 years in 10	306	250	195
8 years in 10	341	269	208
5 years in 10	>365	303	231
2 years in 10	>365	338	255
1 year in 10	>365	356	267
STRAWBERRY VALLEY:			
9 years in 10	206	169	121
8 years in 10	222	179	133
5 years in 10	252	199	155
2 years in 10	283	219	178
1 year in 10	299	230	189
OROVILLE:			
9 years in 10	>365	312	231
8 years in 10	>365	331	250
5 years in 10	>365	>365	288
2 years in 10	>365	>365	326
1 year in 10	>365	>365	346

Table 3.--Growing Season--Continued

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	Days	Days
DE SABLE:			
9 years in 10	225	181	143
8 years in 10	252	195	156
5 years in 10	310	222	182
2 years in 10	>365	250	207
1 year in 10	>365	264	221
PARADISE:			
9 years in 10	>365	306	227
8 years in 10	>365	326	242
5 years in 10	>365	>365	272
2 years in 10	>365	>365	301
1 year in 10	>365	>365	316

Table 4.--Acreage and Proportionate Extent of the Soils

(Some map units from adjacent survey areas have been added to the soil legend for this survey area so that the mapping joins across survey area boundaries. Letters have been added at the end of the map symbols for these map units. The letters "co" refer to Colusa County, the letters "su" refer to Sutter County, and the letters "yu" refer to Yuba County)

Map symbol	Map unit name	Acres	Percent
100	Anita-Galt complex, 0 to 3 percent slopes-----	434	*
104	Bosquejo clay, 0 to 1 percent slopes-----	8,624	0.9
105	Busacca clay loam, 0 to 1 percent slopes-----	5,831	0.6
108	Tuscan-Igo-Anita complex, 0 to 3 percent slopes-----	1,058	0.1
109	Bosquejo clay loam, 0 to 1 percent slopes-----	789	*
110	Bosquejo silt loam, 0 to 1 percent slopes, overwash, occasionally flooded	213	*
111yu	Auburn-Sobrante complex, 8 to 15 percent slopes-----	158	*
114yu	Auburn-Sobrante complex, gravelly, 8 to 15 percent slopes-----	205	*
118	Xerorthents, tailings, 0 to 50 percent slopes-----	10,192	1.1
118co	Clear Lake clay, 0 to 2 percent slopes, frequently flooded-----	771	*
119	Xerorthents, tailings-Urban land complex, 0 to 2 percent slopes-----	1,905	0.2
119yu	Auburn-Sobrante-Rock outcrop complex, 30 to 50 percent slopes-----	58	*
120	Gridley taxadjunct clay loam, 0 to 2 percent slopes-----	4,125	0.4
121	Boga-Loemstone complex, 0 to 1 percent slopes-----	9,577	1.0
121su	Columbia fine sandy loam, 0 to 2 percent slopes, frequently flooded-----	164	*
125	Gridley taxadjunct-Calcic Haploxerolls complex, 0 to 2 percent slopes----	2,594	0.3
126	Liveoak sandy loam, 0 to 2 percent slopes-----	2,186	0.2
127	Gridley taxadjunct loam, 0 to 2 percent slopes-----	10,245	1.1
130	Eastbiggs loam, 0 to 2 percent slopes-----	10,500	1.1
133	Eastbiggs-Galt complex, 0 to 3 percent slopes-----	2,085	0.2
136	Duric Xerarents-Eastbiggs complex, 0 to 1 percent slopes, leveled-----	6,371	0.7
138su	Liveoak sandy clay loam, 0 to 2 percent slopes-----	3,581	0.4
139su	Liveoak-Galt taxadjuncts complex, 0 to 2 percent slopes, frequently flooded-----	1,260	0.1
143su	Marcum-Gridley clay loams, 0 to 1 percent slopes-----	194	*
149yu	Flanly sandy loam, 8 to 15 percent slopes-----	7	*
150	Columbia, 0 to 2 percent slopes, frequently flooded-----	1,026	0.1
150su	Olashes sandy loam, 0 to 2 percent slopes-----	184	*
151yu	Flanly sandy loam, 30 to 50 percent slopes-----	161	*
152	Gianella fine sandy loam, 0 to 1 percent slopes, frequently flooded-----	1,514	0.2
153	Gianella sandy loam, 0 to 1 percent slopes, frequently flooded-----	694	*
154	Gianella silt loam, 0 to 1 percent slopes, frequently flooded-----	2,209	0.2
158	Gianella fine sandy loam, 0 to 1 percent slopes, occasionally flooded----	9,554	1.0
160	Gianella loam, 0 to 1 percent slopes, occasionally flooded-----	991	0.1
161	Gianella fine sandy loam, 0 to 1 percent slopes, rarely flooded-----	3,152	0.3
162	Gianella loam, 0 to 1 percent slopes, rarely flooded-----	774	*
163yu	Holillipah loamy sand, 0 to 1 percent slopes, frequently flooded-----	92	*
165yu	Holland-Hoda-Hotaw complex, 2 to 30 percent slopes-----	42	*
173yu	Hotaw-Chawanakee-Holland complex, 8 to 30 percent slopes-----	3	*
175	Farwell clay loam, 0 to 1 percent slopes-----	1,639	0.2
176	Farwell loam, 0 to 1 percent slopes, occasionally flooded-----	930	0.1
176yu	Jocal loam, 8 to 15 percent slopes-----	41	*
177	Farwell silt loam, 0 to 1 percent slopes, occasionally flooded-----	1,215	0.1
178	Arbuckle gravelly loam, 0 to 2 percent slopes-----	167	*
179	Moda taxadjunct-Arbuckle complex, 0 to 2 percent slopes-----	601	*
180	Dodgeland silty clay loam, 0 to 5 percent slopes, occasionally flooded---	1,515	0.2
181	Dodgeland silty clay loam, 0 to 1 percent slopes, frequently flooded-----	1,420	0.2
188yu	Mariposa taxadjunct gravelly loam, 15 to 30 percent slopes-----	15	*
189	Esquon silt loam, 0 to 1 percent slopes, overwash-----	1,015	0.1
189yu	Mariposa taxadjunct gravelly loam, 30 to 50 percent slopes-----	1	*
196yu	Mildred cobbly loam, 30 to 50 percent slopes-----	13	*
200	Parrott silt loam, 0 to 2 percent slopes, occasionally flooded-----	11,784	1.3
201	Parrott silt loam, 0 to 2 percent slopes, frequently flooded-----	1,237	0.1
203	Kusalslough silty clay loam, 0 to 1 percent slopes, occasionally flooded	685	*
205	Parrott-Vermet complex, 0 to 2 percent slopes, frequently flooded-----	1,691	0.2
206	Islandbar-Chawanakee complex, 3 to 15 percent slopes-----	2,190	0.2
207	Islandbar-Chawanakee complex, 15 to 30 percent slopes-----	2,421	0.3

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Map unit name	Acres	Percent
208	Islandbar-Chawanakee complex, 30 to 50 percent slopes-----	815	*
209	Islandbar-Chawanakee complex, 50 to 70 percent slopes-----	39	*
210	Featherfalls-Islandbar complex, 2 to 15 percent slopes-----	2,291	0.2
211	Featherfalls-Islandbar complex, 15 to 30 percent slopes-----	3,792	0.4
212	Featherfalls-Islandbar complex, 30 to 50 percent slopes-----	3,922	0.4
213	Featherfalls-Islandbar complex, 50 to 70 percent slopes-----	1,741	0.2
214	Crystalhill-Oregongulch-Craigsaddle-Rock outcrop complex, 2 to 15 percent slopes-----	1,958	0.2
215	Crystalhill-Oregongulch-Craigsaddle-Rock outcrop complex, 15 to 30 percent slopes-----	4,227	0.5
216	Crystalhill-Oregongulch-Craigsaddle-Rock outcrop complex, 30 to 50 percent slopes-----	7,078	0.8
217	Crystalhill-Oregongulch-Craigsaddle-Rock outcrop complex, 50 to 70 percent slopes-----	2,564	0.3
218	Rock outcrop-Lithic Xerorthents-Chawanakee complex, 12 to 50 percent slopes-----	976	0.1
219	Rock outcrop-Lithic Xerorthents-Chawanakee complex, 50 to 70 percent slopes-----	206	*
220	Esquon-Clear Lake complex, 0 to 1 percent slopes, frequently flooded-----	903	*
221yu	Sites loam, 3 to 8 percent slopes-----	382	*
222yu	Sites loam, 8 to 15 percent slopes-----	234	*
225yu	Sites gravelly loam, bedrock substratum, 3 to 8 percent slopes-----	24	*
226yu	Sites gravelly loam, bedrock substratum, 8 to 15 percent slopes-----	4	*
227yu	Sites gravelly loam, bedrock substratum, 15 to 30 percent slopes-----	15	*
242yu	Surnuf gravelly loam, 8 to 15 percent slopes-----	1,140	0.1
243yu	Surnuf gravelly loam, 15 to 30 percent slopes-----	1,574	0.2
244yu	Surnuf gravelly loam, 30 to 50 percent slopes-----	397	*
245	Surnuf gravelly loam, 50 to 70 percent slopes-----	305	*
248yu	Trainer loam, 0 to 1 percent slopes, occasionally flooded-----	768	*
250	Llanoseco silty clay loam, 0 to 2 percent slopes, occasionally flooded---	307	*
252	Whitecabin-Ordferri silty clays, 0 to 1 percent slopes, occasionally flooded-----	2,595	0.3
252yu	Woodleaf gravelly loam, 3 to 15 percent slopes-----	9	*
253yu	Woodleaf gravelly loam, 15 to 30 percent slopes-----	15	*
255	Whitecabin-Ordferri complex, 0 to 1 percent slopes, occasionally flooded	853	*
256	Whitecabin silt loam, 0 to 1 percent slopes, occasionally flooded-----	123	*
257	Llanoseco silty clay loam, 0 to 1 percent slopes, frequently flooded-----	127	*
258	Codora silty clay loam, 0 to 1 percent slopes, occasionally flooded-----	5	*
260	Ordferri silty clay, 0 to 1 percent slopes, occasionally flooded-----	742	*
280	Columbia taxadjunct very fine sandy loam, 0 to 1 percent slopes, frequently flooded-----	1,029	0.1
290	Perkins gravelly loam, 0 to 2 percent slopes-----	1,276	0.1
300	Redsluff gravelly loam, 0 to 2 percent slopes-----	7,019	0.8
301	Wafap-Hamslough complex, 0 to 2 percent slopes-----	3,132	0.3
302	Redtough-Redswale complex, 0 to 2 percent slopes-----	7,270	0.8
303	Munjar-Tuscan taxadjunct-Galt complex, 0 to 2 percent slopes-----	3,702	0.4
304	Redtough loam, 8 to 35 percent slopes-----	377	*
305	Redtough-Redswale-Anita, gravelly duripan, complex, 0 to 5 percent slopes	2,556	0.3
306	Duric Xerarents complex, 0 to 1 percent slopes-----	1,356	0.1
307	Duric Xerarents, 0 to 1 percent slopes-----	1,076	0.1
310	Kimball loam, 1 to 3 percent slopes-----	3,733	0.4
317	Thompsonflat loam, 2 to 15 percent slopes-----	4,571	0.5
318	Thompsonflat-Oroville complex, 0 to 9 percent slopes-----	7,450	0.8
320	Vistarobles-Redding complex, 0 to 9 percent slopes-----	4,070	0.4
321	Durixeralfs-Typic Petraquepts complex, 0 to 2 percent slopes-----	1,869	0.2
330	Wilsoncreek-Trainer loams, 0 to 2 percent slopes, occasionally flooded---	2,916	0.3
331	Thompsonflat loam, 15 to 30 percent slopes-----	2,031	0.2
335	Galt clay loam, 0 to 1 percent slopes-----	198	*
336	Galt clay, 0 to 1 percent slopes-----	1,394	0.2
337	Galt clay loam, 0 to 1 percent slopes, leveled-----	910	*
338	Oxyaquic Xerofluvents silt loam, 0 to 1 percent slopes-----	2,053	0.2

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Map unit name	Acres	Percent
339	Oxyaquic Xerofluvents sandy loam, 0 to 1 percent slopes, frequently flooded-----	820	*
340	Rock outcrop-Thermalrocks-Campbellhills complex, 2 to 15 percent slopes--	4,238	0.5
341	Eley-Beatsonhollow-Campbellhills-Rock outcrop complex, 2 to 5 percent slopes-----	846	*
342	Thermalrocks-Beatsonhollow taxadjunct-Rock outcrop complex, 2 to 30 percent slopes-----	813	*
343	Coalcanyon-Coonhollow complex, 5 to 15 percent slopes-----	839	*
344	Coalcanyon-Coonhollow-Rock outcrop complex, 15 to 30 percent slopes-----	1,961	0.2
346	Cheratable-Eley complex, 2 to 15 percent slopes-----	1,038	0.1
347	Haplic Palexeralfs loam, 0 to 5 percent slopes-----	851	*
353	Cherokeespring gravelly silt loam, 2 to 15 percent slopes-----	1,049	0.1
355	Coalcanyon-Talus complex, 15 to 30 percent slopes-----	391	*
356	Coalcanyon-Rock outcrop, cliffs-Talus-Coonhollow complex, 30 to 200 percent slopes-----	2,178	0.2
360	Typic Xerofluvents complex, 0 to 2 percent slopes-----	1,681	0.2
361	Typic Xerofluvents, sandy-skeletal, 0 to 2 percent slopes-----	469	*
362	Ultic Haploxeralfs, sandstone, low elevation, complex, 2 to 5 percent slopes-----	364	*
363	Ultic Haploxeralfs, sandstone, low elevation, complex, 5 to 15 percent slopes-----	465	*
364	Ultic Haploxeralfs, sandstone, low elevation, complex, 15 to 30 percent slopes-----	352	*
365	Palexerults, 15 to 30 percent slopes-----	1,779	0.2
366	Palexerults, 30 to 50 percent slopes-----	530	*
370	Palexerults, 2 to 15 percent slopes-----	1,519	0.2
375	Wicks corner loam, 2 to 10 percent slopes-----	1,194	0.1
376	Flagcanyon-Wicks corner complex, 2 to 5 percent slopes-----	2,049	0.2
377	Flagcanyon taxadjunct-Durixeralfs-Duraquerts complex, 0 to 5 percent slopes-----	1,016	0.1
400	Subaco taxadjunct clay, 0 to 1 percent slopes-----	7,609	0.8
415	Ignord fine sandy loam, 0 to 2 percent slopes-----	909	*
416	Calcic Haploxerolls, 0 to 1 percent slopes-----	220	*
418	Almendra loam, 0 to 1 percent slopes-----	13,052	1.4
419	Conejo fine sandy loam, 0 to 1 percent slopes, overwash-----	799	*
420	Conejo clay loam, 0 to 1 percent slopes-----	12,946	1.4
425	Vina fine sandy loam, 0 to 1 percent slopes-----	6,466	0.7
426	Vina loam, 0 to 1 percent slopes-----	1,056	0.1
439	Oxyaquic Xerofluvents clay, 0 to 1 percent slopes, frequently flooded----	780	*
440	Oxyaquic Xerofluvents silt loam, 0 to 1 percent slopes, frequently flooded-----	1,060	0.1
441	Oxyaquic Xerofluvents very fine sandy loam, 0 to 1 percent slopes-----	916	*
442	Durixerolls-Haploxerolls clay loams, 0 to 2 percent slopes-----	2,303	0.3
443	Durixerolls-Haploxerolls loams, 0 to 2 percent slopes-----	789	*
445	Chico loam, 0 to 1 percent slopes-----	4,785	0.5
447	Charger fine sandy loam, 0 to 1 percent slopes-----	2,176	0.2
448	Haploxerolls clay loam, 0 to 2 percent slopes-----	4,821	0.5
449	Haploxerolls loam, 0 to 2 percent slopes-----	3,802	0.4
500	Lofgren-Blavo complex, 0 to 1 percent slopes-----	30,310	3.3
501	Lofgren-Blavo complex, 0 to 1 percent slopes, occasionally flooded-----	14,032	1.5
502	Blavo silt loam, 0 to 1 percent slopes, overwash, occasionally flooded---	343	*
519	Edjobe silty clay, 0 to 1 percent slopes-----	3,818	0.4
520	Esquon-Neerdobe complex, 0 to 1 percent slopes-----	57,816	6.3
521	Neerdobe silt loam, 0 to 1 percent slopes, overwash-----	747	*
522	Clear Lake silty clay loam, 0 to 1 percent slopes, overwash, frequently flooded-----	695	*
523	Esquon silty clay loam, 0 to 1 percent slopes, overwash, frequently flooded-----	926	0.1
525	Govstanford loam, 0 to 1 percent slopes-----	531	*
526	Govstanford loam, 0 to 1 percent slopes, occasionally flooded-----	702	*
528	Neerdobe clay loam, 0 to 1 percent slopes-----	549	*
550	Dunstone-Loafercreek complex, dry, 1 to 15 percent slopes-----	6,520	0.7

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Map unit name	Acres	Percent
551	Dunstone-Lomarica-Argonaut taxadjunct complex, 15 to 30 percent slopes---	4,764	0.5
552	Dunstone-Loafercreek complex, 2 to 15 percent slopes-----	6,619	0.7
553	Dunstone-Loafercreek complex, 15 to 30 percent slopes-----	702	*
554	Dunstone-Loafercreek complex, 30 to 50 percent slopes-----	5,660	0.6
555	Dunstone-Loafercreek complex, 50 to 90 percent slopes-----	1,046	0.1
556	Mounthope-Hartsmill complex, 2 to 15 percent slopes-----	499	*
557	Mounthope-Hartsmill complex, 15 to 30 percent slopes-----	2,524	0.3
558	Hartsmill-Mounthope complex, 30 to 50 percent slopes-----	3,771	0.4
559	Hartsmill-Mounthope complex, 50 to 70 percent slopes-----	2,332	0.3
560	Hartsmill-Mounthope complex, 70 to 90 percent slopes-----	884	*
561	Bigridge-Minniecreek complex, 2 to 15 percent slopes-----	303	*
562	Bigridge-Minniecreek complex, 15 to 30 percent slopes-----	810	*
563	Bigridge-Minniecreek complex, 30 to 50 percent slopes-----	1,634	0.2
564	Bigridge-Minniecreek complex, 50 to 70 percent slopes-----	450	*
565	Dunstone-Argonaut taxadjunct-Sunnyslope complex, 2 to 15 percent slopes--	4,147	0.5
566	Dunstone-Loafercreek-Katskillhill complex, 2 to 15 percent slopes-----	6,024	0.7
567	Dunstone-Loafercreek-Argonaut taxadjunct complex, 2 to 15 percent slopes	4,573	0.5
577	Parkshill-Flanly-Hurleton complex, 2 to 15 percent slopes-----	6,168	0.7
578	Flanly-Swedesflat complex, 2 to 15 percent slopes-----	4,489	0.5
580	Surnuf taxadjunct-Griffgulch-Rock outcrop complex, 2 to 15 percent slopes	523	*
581	Surnuf taxadjunct-Griffgulch complex, 15 to 30 percent slopes-----	1,453	0.2
582	Surnuf taxadjunct-Griffgulch complex, 30 to 50 percent slopes-----	641	*
583	Surnuf taxadjunct-Griffgulch complex, 50 to 70 percent slopes-----	769	*
584	Flanly-Swedesflat-Rackerby complex, 15 to 30 percent slopes-----	8,165	0.9
585	Flanly-Sommeyflat complex, 2 to 15 percent slopes-----	2,387	0.3
586	Sommeyflat-Mounthope complex, 15 to 30 percent slopes-----	2,497	0.3
587	Sommeyflat-Mounthope-Hurleton complex, 30 to 50 percent slopes-----	4,283	0.5
588	Ultic Haploxerafals, thermic, high terrace, 2 to 15 percent slopes-----	2,962	0.3
589	Ultic Haploxerafals, thermic, high terrace, 15 to 30 percent slopes-----	1,828	0.2
590	Vistarobles-Redding-Argonaut taxadjunct-Haploxererts complex, 0 to 9 percent slopes-----	6,244	0.7
603	Oroville-Thermalito-Fernandez-Thompsonflat complex, 0 to 9 percent slopes	12,658	1.4
605	Duric Xerarents-Oroville complex, 0 to 1 percent slopes, leveled-----	576	*
606	Redtough-Fallager-Anita, gravelly duripan, complex, 0 to 3 percent slopes	2,611	0.3
609	Anita, gravelly duripan-Tuscan taxadjunct complex, 0 to 2 percent slopes	585	*
614	Doemill-Jokerst complex, 0 to 3 percent slopes-----	2,248	0.2
615	Doemill-Jokerst complex, 3 to 8 percent slopes-----	8,974	1.0
616	Jokerst-Doemill-Typic Haploxerafals complex, 8 to 15 percent slopes-----	3,933	0.4
617	Jokerst-Doemill-Typic Haploxerafals complex, 15 to 30 percent slopes-----	1,559	0.2
619	Carhart taxadjunct, 0 to 2 percent slopes-----	302	*
620	Doemill-Jokerst-Ultic Haploxerafals, thermic, complex, 3 to 8 percent slopes-----	4,672	0.5
621	Doemill-Jokerst-Ultic Haploxerafals, thermic, complex, 8 to 15 percent slopes-----	3,833	0.4
622	Xerorthents, shallow-Typic Haploxerafals-Rock outcrop, cliffs, complex, 15 to 30 percent slopes-----	11,203	1.2
623	Xerorthents, shallow-Typic Haploxerafals-Rock outcrop, cliffs, complex, 30 to 50 percent slopes-----	11,974	1.3
624	Ultic Haploxerafals, mesic-Rockstripe complex, 2 to 15 percent slopes-----	8,198	0.9
625	Ultic Haploxerafals, mesic-Rockstripe complex, 15 to 30 percent slopes-----	7,492	0.8
626	Ultic Haploxerafals-Rockstripe-Rock outcrop, cliffs, complex, 30 to 50 percent slopes-----	11,401	1.2
627	Ultic Haploxerafals-Rockstripe-Rock outcrop, cliffs, complex, 50 to 70 percent slopes-----	5,376	0.6
628	Rockstripe-Ultic Haploxerafals-Rock outcrop, cliffs, complex, 70 to 100 percent slopes-----	2,016	0.2
629	Slideland gravelly loam, 3 to 15 percent slopes-----	619	*
630	Slideland gravelly loam, 15 to 30 percent slopes-----	388	*
631	Slideland gravelly loam, 30 to 50 percent slopes-----	253	*
632	Ultic Haploxerafals, conglomerate, complex, 3 to 15 percent slopes-----	119	*
633	Ultic Haploxerafals, conglomerate, complex, 15 to 30 percent slopes-----	578	*
634	Ultic Haploxerafals, conglomerate, complex, 30 to 50 percent slopes-----	853	*

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Map unit name	Acres	Percent
635	Ultic Haploxeralfs, conglomerate, complex, 50 to 70 percent slopes-----	266	*
636	Ultic Haploxeralfs, conglomerate, complex, 70 to 100 percent slopes-----	35	*
637	Ultic Haploxeralfs, sandstone, 3 to 15 percent slopes-----	22	*
638	Ultic Haploxeralfs, sandstone, 15 to 30 percent slopes-----	59	*
639	Ultic Haploxeralfs, sandstone, 30 to 50 percent slopes-----	47	*
640	Ultic Haploxeralfs, sandstone, 50 to 70 percent slopes-----	83	*
641	Ultic Haploxeralfs, sandstone, 70 to 100 percent slopes-----	173	*
642	Chinacamp gravelly loam, 3 to 15 percent slopes-----	519	*
643	Chinacamp gravelly loam, 15 to 30 percent slopes-----	2,085	0.2
644	Chinacamp gravelly loam, 30 to 50 percent slopes-----	1,338	0.1
645	Chinacamp gravelly loam, 50 to 70 percent slopes-----	325	*
646	Coalcanyon taxadjunct very gravelly loam, 3 to 15 percent slopes-----	73	*
647	Coalcanyon taxadjunct very gravelly loam, 15 to 30 percent slopes-----	593	*
648	Coalcanyon taxadjunct very gravelly loam, 30 to 50 percent slopes-----	688	*
649	Coalcanyon taxadjunct very gravelly loam, 50 to 70 percent slopes-----	219	*
650	Schott very gravelly loam, 3 to 15 percent slopes-----	691	*
651	Schott very gravelly loam, 15 to 30 percent slopes-----	2,067	0.2
652	Schott-Rock outcrop complex, 30 to 50 percent slopes-----	6,217	0.7
654	Coridge-Rock outcrop complex, 3 to 8 percent slopes-----	1,521	0.2
655	Coridge-Rock outcrop complex, 8 to 15 percent slopes-----	209	*
656	Rock outcrop, cliffs-Coalcanyon taxadjunct complex, 15 to 50 percent slopes-----	803	*
657	Bonneyr ridge-Chawanakee-Rock outcrop complex, 2 to 15 percent slopes-----	1,880	0.2
658	Bonneyr ridge-Chawanakee-Rock outcrop complex, 15 to 30 percent slopes-----	4,985	0.5
659	Bonneyr ridge-Chawanakee-Rock outcrop complex, 30 to 50 percent slopes-----	6,288	0.7
660	Bonneyr ridge-Chawanakee-Rock outcrop complex, 50 to 70 percent slopes-----	2,145	0.2
661	Millerridge-Boxrobber complex, 3 to 15 percent slopes-----	577	*
662	Millerridge-Boxrobber complex, 15 to 30 percent slopes-----	1,101	0.1
663	Millerridge-Boxrobber complex, 30 to 50 percent slopes-----	1,272	0.1
664	Millerridge-Boxrobber complex, 50 to 70 percent slopes-----	357	*
665	Surnuf-Bigridge complex, 3 to 15 percent slopes-----	806	*
666	Surnuf-Bigridge complex, 15 to 30 percent slopes-----	1,404	0.2
667	Surnuf-Bigridge complex, 30 to 50 percent slopes-----	1,410	0.2
668	Surnuf-Bigridge complex, 50 to 70 percent slopes-----	670	*
669	Oroshore-Mounthope-Dunstone complex, 3 to 15 percent slopes-----	1,981	0.2
670	Oroshore-Mounthope-Dunstone complex, 15 to 30 percent slopes-----	3,799	0.4
671	Oroshore-Mounthope-Dunstone complex, 30 to 50 percent slopes-----	3,793	0.4
672	Oroshore-Mounthope-Dunstone complex, 50 to 70 percent slopes-----	1,942	0.2
674	Chawanakee-Bonneyr ridge-Rock outcrop complex, 70 to 110 percent slopes----	968	0.1
675	Clearhayes-Hamslough complex, 0 to 2 percent slopes-----	3,090	0.3
676	Carhart-Anita taxadjunct complex, 0 to 12 percent slopes-----	3,739	0.4
677	Tuscan-Fallager-Anita, gravelly duripan, complex, 0 to 3 percent slopes--	5,661	0.6
679	Lucksev-Butteside-Carhart complex, 2 to 15 percent slopes-----	7,776	0.8
680	Lucksev-Butteside complex, 15 to 35 percent slopes-----	2,789	0.3
683	Typic Haploxeralfs, magnesian, low elevation-Earlal-Rock outcrop complex, 3 to 15 percent slopes-----	102	*
684	Typic Haploxeralfs, magnesian, low elevation-Earlal-Rock outcrop complex, 15 to 30 percent slopes-----	191	*
685	Bosquejo taxadjunct clay, 0 to 2 percent slopes-----	624	*
686	Redsluff taxadjunct clay loam, 0 to 2 percent slopes-----	853	*
687	Xerorthents, shallow-Typic Haploxeralfs complex, 2 to 15 percent slopes--	2,196	0.2
700	Retsongulch-Flumewall complex, 70 to 100 percent slopes-----	1,533	0.2
701	Powellton-Obstruction complex, 50 to 70 percent slopes-----	788	*
702	Cerpone-Typic Haploxeralfs, magnesian-Earlal complex, 3 to 15 percent slopes-----	247	*
703	Cerpone-Typic Haploxeralfs, magnesian-Earlal-Rock outcrop complex, 15 to 30 percent slopes-----	1,593	0.2
704	Typic Haploxeralfs, magnesian-Earlal-Cerpone-Rock outcrop complex, 30 to 50 percent slopes-----	3,369	0.4
705	Typic Haploxeralfs, magnesian-Earlal-Cerpone-Rock outcrop complex, 50 to 80 percent slopes-----	1,878	0.2
711	Dixmine-Toadtown complex, 3 to 15 percent slopes-----	18	*

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Map unit name	Acres	Percent
712	Dixmine-Toadtown complex, 15 to 30 percent slopes-----	556	*
713	Dixmine-Toadtown complex, 30 to 50 percent slopes-----	688	*
714	Dixmine-Toadtown complex, 50 to 70 percent slopes-----	575	*
715	Logtrain-Bottlehill-Walkermine complex, 70 to 110 percent slopes-----	1,113	0.1
716	Griffgulch-Surnuf complex, 3 to 15 percent slopes-----	269	*
717	Griffgulch-Surnuf complex, 15 to 30 percent slopes-----	1,572	0.2
718	Griffgulch-Surnuf-Spine taxadjunct complex, 30 to 50 percent slopes-----	4,108	0.4
719	Griffgulch-Surnuf-Spine taxadjunct complex, 50 to 70 percent slopes-----	1,421	0.2
720	Dystroxepts-Haploxeralfs-Rock outcrop complex, 70 to 110 percent slopes	3,822	0.4
721	Haploxerands, granitic till, 2 to 15 percent slopes-----	729	*
722	Haploxerands, granitic till, 15 to 30 percent slopes-----	968	0.1
723	Haploxerands, granitic till, 30 to 50 percent slopes-----	474	*
724	Haploxerands, volcanic till, 2 to 15 percent slopes-----	476	*
725	Haploxerands, volcanic till, 15 to 30 percent slopes-----	1,053	0.1
726	Haploxerands, volcanic till, 30 to 50 percent slopes-----	560	*
727	Bonneyridge sandy loam, 1 to 15 percent slopes-----	1,075	0.1
728	Bonneyridge sandy loam, 15 to 30 percent slopes-----	1,666	0.2
729	Bonneyridge sandy loam, 30 to 50 percent slopes-----	556	*
730	Tusccoll-Schott complex, 30 to 50 percent slopes-----	3,637	0.4
731	Tusccoll-Schott complex, 50 to 70 percent slopes-----	2,415	0.3
732	Bonepile taxadjunct, 2 to 8 percent slopes-----	654	*
733	Haploxeralfs, terrace, 0 to 5 percent slopes-----	530	*
734	Haploxerands-Aquic Xerofluvents complex, 0 to 15 percent slopes-----	713	*
735	Fluvaquents, loamy, 0 to 3 percent slopes-----	241	*
801	Obstruction gravelly sandy loam, 3 to 15 percent slopes-----	1,354	0.1
802	Obskel-Obstruction complex, 15 to 30 percent slopes-----	3,353	0.4
803	Obskel-Obstruction complex, 30 to 50 percent slopes-----	4,923	0.5
804	Obskel-Obstruction-Retsongulch complex, 50 to 70 percent slopes-----	3,134	0.3
805	Bottlehill-Walkermine-Logtrain complex, 3 to 15 percent slopes-----	509	*
806	Bottlehill-Walkermine-Logtrain complex, 15 to 30 percent slopes-----	1,739	0.2
807	Bottlehill-Logtrain-Walkermine complex, 30 to 50 percent slopes-----	3,485	0.4
808	Bottlehill-Walkermine-Logtrain complex, 50 to 70 percent slopes-----	2,949	0.3
809	Walkermine-Bottlehill-Logtrain-Rock outcrop complex, 70 to 110 percent slopes-----	1,048	0.1
810	Dixmine-Mac-Spine complex, 30 to 50 percent slopes-----	2,027	0.2
811	Powellton-Toadtown complex, 3 to 15 percent slopes-----	1,297	0.1
812	Powellton-Toadtown complex, 15 to 30 percent slopes-----	3,097	0.3
813	Powellton-Toadtown complex, 30 to 50 percent slopes-----	2,579	0.3
814	Mountyana gravelly loam, 2 to 15 percent slopes-----	8,095	0.9
815	Mountyana gravelly loam, 15 to 30 percent slopes-----	3,130	0.3
817	Lydon very gravelly medial coarse sandy loam, 2 to 15 percent slopes-----	377	*
818	Lydon very gravelly medial coarse sandy loam, 15 to 30 percent slopes-----	506	*
819	Lydon-Rock outcrop complex, 30 to 50 percent slopes-----	2,006	0.2
820	Lydon-Rock outcrop complex, 50 to 70 percent slopes-----	358	*
821	Lydon-Rock outcrop complex, 70 to 100 percent slopes-----	175	*
822	Bonepile gravelly medial loam, 2 to 15 percent slopes-----	2,952	0.3
823	Bonepile gravelly medial loam, 15 to 30 percent slopes-----	1,978	0.2
824	Beecee very gravelly medial loam, 30 to 50 percent slopes-----	8,807	1.0
825	Beecee-Lydon complex, 50 to 70 percent slopes-----	2,347	0.3
826	Redbone gravelly medial sandy loam, 3 to 15 percent slopes-----	3,179	0.3
827	Redbone gravelly medial sandy loam, 15 to 30 percent slopes-----	1,519	0.2
829	Paradiso loam, 2 to 15 percent slopes-----	17,694	1.9
830	Paradiso loam, 15 to 30 percent slopes-----	3,545	0.4
831	Surnuf-Bigrigide-Spine complex, 3 to 15 percent slopes-----	886	*
832	Surnuf-Bigrigide-Spine complex, 15 to 30 percent slopes-----	1,185	0.1
833	Surnuf-Bigrigide-Spine complex, 30 to 50 percent slopes-----	837	*
834	Hietanen-Mac complex, 3 to 15 percent slopes-----	233	*
835	Hietanen-Mac complex, 15 to 30 percent slopes-----	544	*
836	Hietanen-Mac-Spine complex, 30 to 50 percent slopes-----	1,648	0.2
837	Hietanen-Spine-Mac complex, 50 to 70 percent slopes-----	1,419	0.2
838	Dixmine-Spine-Mac complex, 50 to 70 percent slopes-----	2,649	0.3
839	Chawanakee-Bills cabin complex, 2 to 15 percent slopes-----	311	*

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Map unit name	Acres	Percent
841	Billscabin-Bonneyridge complex, 30 to 50 percent slopes-----	937	0.1
842	Billscabin-Bonneyridge complex, 50 to 70 percent slopes-----	1,158	0.1
846	Bonneyridge-Lewisflat complex, 2 to 15 percent slopes-----	957	0.1
847	Bonneyridge-Lewisflat complex, 15 to 30 percent slopes-----	4,540	0.5
848	Bonneyridge-Lewisflat complex, 30 to 50 percent slopes-----	3,968	0.4
850	Lewisflat loam, 2 to 15 percent slopes-----	569	*
851	Lewisflat loam, 15 to 30 percent slopes-----	1,236	0.1
852	Lewisflat loam, 30 to 50 percent slopes-----	420	*
860	Toadtown-Powellton complex, 2 to 15 percent slopes-----	3,296	0.4
861	Toadtown-Powellton complex, 15 to 30 percent slopes-----	6,272	0.7
862	Toadtown-Powellton complex, 30 to 50 percent slopes-----	1,768	0.2
863	Toadtown-Powellton complex, 50 to 70 percent slopes-----	735	*
880	Sites-Jocal taxadjuncts, 2 to 15 percent slopes-----	1,200	0.1
881	Sites-Jocal taxadjuncts, 15 to 30 percent slopes-----	1,685	0.2
882	Sites-Jocal taxadjuncts, 30 to 50 percent slopes-----	1,392	0.2
883	Sites-Jocal taxadjuncts, 50 to 70 percent slopes-----	90	*
885	Rogerville silt loam, 2 to 15 percent slopes-----	1,383	0.2
886	Rogerville silt loam, 15 to 30 percent slopes-----	1,605	0.2
892	Rogerville silt loam, 50 to 70 percent slopes-----	110	*
893	Rogerville silt loam, 30 to 50 percent slopes-----	364	*
902	Lava flows-Lumpkin complex, 0 to 15 percent slopes-----	482	*
903	Mudwash-Timberisland-Lavatop complex, 2 to 30 percent slopes-----	2,125	0.2
904	Lava flows-Lavatop complex, 15 to 30 percent slopes-----	124	*
905	Lava flows-Lumpkin complex, 30 to 50 percent slopes-----	201	*
906	Lava flows-Lumpkin complex, 50 to 70 percent slopes-----	112	*
911	Endoquolls, 0 to 8 percent slopes-----	213	*
923	Powderhouse-McNair-Greenwell complex, 2 to 15 percent slopes-----	1,249	0.1
924	Powderhouse-McNair-Greenwell complex, 15 to 30 percent slopes-----	2,158	0.2
925	Powderhouse-McNair-Greenwell complex, 30 to 50 percent slopes-----	1,650	0.2
930	Shakeridge-Timberisland complex, 0 to 15 percent slopes-----	267	*
931	Shakeridge-Mudwash-Timberisland complex, 15 to 30 percent slopes-----	1,587	0.2
932	Shakeridge-Mudwash complex, 30 to 50 percent slopes-----	866	*
933	Shakeridge gravelly medial coarse sandy loam, 50 to 70 percent slopes-----	138	*
934	Mudwash gravelly medial sandy loam, 0 to 15 percent slopes-----	1,001	0.1
939	Fluvaquentic Humaquepts, 0 to 15 percent slopes-----	268	*
940	Dejonah-Stagpoint complex, 2 to 15 percent slopes-----	1,000	0.1
941	Dejonah-Stagpoint complex, 15 to 30 percent slopes-----	2,236	0.2
942	Stagpoint-Dejonah complex, 30 to 50 percent slopes-----	2,759	0.3
948	Stagpoint-Dejonah complex, 50 to 70 percent slopes-----	268	*
949	Rogerville taxadjunct, 30 to 50 percent slopes-----	181	*
950	Lumpkin taxadjunct-Rock outcrop-Powderhouse complex, 0 to 15 percent slopes-----	412	*
951	Lumpkin taxadjunct-Rock outcrop-Powderhouse complex, 15 to 30 percent slopes-----	136	*
960	Surnuf gravelly loam, 3 to 8 percent slopes, high elevation-----	994	0.1
961	Surnuf gravelly loam, 8 to 15 percent slopes, high elevation-----	132	*
962	Surnuf gravelly loam, 15 to 30 percent slopes, high elevation-----	250	*
963	Surnuf gravelly loam, 30 to 50 percent slopes, high elevation-----	269	*
990	Riverwash, 0 to 2 percent slopes, frequently flooded-----	1,835	0.2
991	Xerofluvents, 0 to 4 percent slopes, frequently flooded-----	1,788	0.2
995	Pits, gravel-----	84	*
996	Dumps, excavated material-----	179	*
997	Pits-----	742	*
998	Dumps, landfill-----	95	*
999	Water-----	21,757	2.4
DAM	Dam-----	192	*
	Total-----	930,752	100.0

* Less than 0.1 percent.

Table 5.--Land Capability Classification

(The land capability system groups soils primarily on the basis of their ability to produce the commonly grown cultivated crops and pasture plants over a long period of time without deteriorating. Absence of an entry indicates that no land capability classification is assigned. N represents nonirrigated areas, and I represents irrigated areas)

Map symbol and soil name	Land capability	
	N	I
100:		
Anita clay-----	6s-5	6s-5
Galt clay-----	5w-2	5w-2
104:		
Bosquejo clay-----	3w-2	2w-2
105:		
Busacca clay loam-----	3s-2	2s-2
108:		
Tuscan gravelly loam-----	7s-8	7s-8
Igo gravelly loam-----	7s-8	7s-8
Anita clay-----	6s-5	6s-5
109:		
Bosquejo clay loam-----	3w-2	2w-2
110:		
Bosquejo silt loam, overwash, occasionally flooded-----	3w-2	2w-2
111yu:		
Auburn loam-----	4e-8	4e-8
Sobrante loam-----	3e-8	3e-8
114yu:		
Auburn gravelly loam-----	4e-8	4e-8
Sobrante gravelly loam-----	3e-8	3e-8
118:		
Xerorthents, tailings-----	4e-7	4e-7
118co:		
Clear Lake clay, frequently flooded-----	4w-2	4w-2
119:		
Xerorthents, tailings-----	4e-7	4e-7
Urban land-----	8	8
119yu:		
Auburn gravelly loam-----	6e-8	6e-8
Sobrante gravelly loam-----	6e-8	6e-8
Rock outcrop-----	8	8
120:		
Gridley taxadjunct clay loam-----	3w-8	3w-8

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
121:		
Boga loam-----	3s-3	2s-3
Loemstone loam-----	3s-3	3s-3
121su:		
Columbia fine sandy loam, frequently flooded-----	4w	4w
125:		
Gridley taxadjunct loam-----	3w-8	3w-8
Calcic Haploxerolls sandy loam-----	3s-6	3s-6
126:		
Liveoak sandy loam-----	3s-2	2s-2
127:		
Gridley taxadjunct loam-----	3w-8	3w-8
130:		
Eastbiggs loam-----	5w-2	5w-2
133:		
Eastbiggs loam-----	5w-2	5w-2
Galt clay loam-----	5w-2	5w-2
136:		
Duric Xerarents, cut-----	5w-2	5w-2
Duric Xerarents, fill-----	4w-5	4w-5
Eastbiggs fine sandy loam, leveled-----	5w-2	5w-2
138su:		
Liveoak sandy clay loam-----	3s-2	2s-2
139su:		
Liveoak taxadjunct loam, frequently flooded-----	4w-2	4w-2
Galt taxadjunct clay loam, frequently flooded----	5w-2	5w-2
143su:		
Marcum clay loam-----	3s-3	2s-3
Gridley clay loam-----	3s-3	3s-3
149yu:		
Flanly sandy loam-----	4e-1	4e-1
150:		
Columbia stratified sand to fine sandy loam-----	4w-2	4w-2
150su:		
Olashes sandy loam-----	3c	1
151yu:		
Flanly sandy loam-----	7e-1	7e-1
152:		
Gianella fine sandy loam, frequently flooded-----	4w-2	4w-2

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
153: Gianella sandy loam, frequently flooded-----	4w-2	4w-2
154: Gianella silt loam, frequently flooded-----	4w-2	4w-2
158: Gianella fine sandy loam, occasionally flooded---	3w-2	2w-2
160: Gianella loam, occasionally flooded-----	3w-2	2w-2
161: Gianella fine sandy loam, rarely flooded-----	3s-4	2s-4
162: Gianella loam, rarely flooded-----	3s-4	2s-4
163yu: Holillipah loamy sand-----	4w-2	4w-2
165yu: Holland loam-----	4e-1	4e-1
Hoda loam-----	4e-1	4e-1
Hotaw loam-----	6e-1	6e-1
173yu: Hotaw loam-----	6e-1	6e-1
Chawanakee gravelly sandy loam-----	7e-1	7e-1
Holland loam-----	4e-1	4e-1
175: Farwell clay loam, rarely flooded-----	3s-2	1
176: Farwell loam, occasionally flooded-----	3s-2	2s-2
176yu: Jocal loam-----	3e-1	3e-1
177: Farwell silt loam, occasionally flooded-----	3s-2	2s-2
178: Arbuckle gravelly loam-----	3s-4	2s-4
179: Moda taxadjunct loam-----	5w-2	5w-2
Arbuckle gravelly loam-----	3s-4	2s-4
180: Dodgeland silty clay loam, occasionally flooded--	5w-2	5w-2
181: Dodgeland silty clay loam, frequently flooded---	5w-2	5w-2

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
188yu: Mariposa taxadjunct gravelly loam-----	4e-1	4e-1
189: Esquon silt loam, overwash-----	5w-2	5w-2
189yu: Mariposa taxadjunct gravelly loam-----	6e-1	6e-1
196yu: Mildred cobbly loam-----	7e-1	7e-1
200: Parrott silt loam, occasionally flooded-----	3w-2	3w-2
201: Parrott silt loam, frequently flooded-----	4w-2	4w-2
203: Kusalslough silty clay loam, occasionally flooded-----	3w-2	2w-2
205: Parrott silt loam, frequently flooded-----	4w-2	4w-2
Vermet silt loam, frequently flooded-----	5w-2	5w-2
206: Islandbar sandy loam-----	4e-1	4e-1
Chawanakee gravelly sandy loam-----	7e-1	7e-1
207: Islandbar sandy loam-----	6e-1	6e-1
Chawanakee gravelly sandy loam-----	7e-1	7e-1
208: Islandbar sandy loam-----	7e-1	7e-1
Chawanakee gravelly sandy loam-----	7e-1	7e-1
209: Islandbar sandy loam-----	8	8
Chawanakee gravelly sandy loam-----	8	8
210: Featherfalls sandy loam-----	4e-1	4e-1
Islandbar sandy loam-----	4e-1	4e-1
211: Featherfalls sandy loam-----	6e-1	6e-1
Islandbar sandy loam-----	6e-1	6e-1
212: Featherfalls sandy loam-----	7e-1	7e-1
Islandbar sandy loam-----	7e-1	7e-1

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
213:		
Featherfalls sandy loam-----	8	8
Islandbar sandy loam-----	8	8
214:		
Crystalhill gravelly coarse sandy loam-----	4e-1	4e-1
Oregongulch gravelly sandy loam-----	7e-1	7e-1
Craigsaddle coarse sandy loam-----	4e-1	4e-1
Rock outcrop, trondhemite-----	8	8
215:		
Crystalhill gravelly coarse sandy loam-----	6e-1	6e-1
Oregongulch gravelly sandy loam-----	7e-1	7e-1
Craigsaddle coarse sandy loam-----	6e-1	6e-1
Rock outcrop, trondhemite-----	8	8
216:		
Crystalhill gravelly coarse sandy loam-----	7e-1	7e-1
Oregongulch gravelly sandy loam-----	7e-1	7e-1
Craigsaddle coarse sandy loam-----	7e-1	7e-1
Rock outcrop, trondhemite-----	8	8
217:		
Crystalhill gravelly coarse sandy loam-----	8	8
Oregongulch gravelly sandy loam-----	8	8
Craigsaddle coarse sandy loam-----	8	8
Rock outcrop, trondhemite-----	8	8
218:		
Rock outcrop, quartz diorite-----	8	8
Lithic Xerorthents gravelly sandy loam-----	8	8
Chawanakee gravelly sandy loam-----	7e-1	7e-1
219:		
Rock outcrop, quartz diorite-----	8	8
Lithic Xerorthents gravelly sandy loam-----	8	8
Chawanakee gravelly sandy loam-----	8	8
220:		
Esquon clay, frequently flooded-----	5w-2	5w-2
Clear Lake silty clay loam, overwash-----	5w-2	5w-2
221yu:		
Sites loam-----	3e-1	2e-1
222yu:		
Sites loam-----	3e-1	3e-1

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
225yu: Sites gravelly loam, bedrock substratum-----	3e-1	2e-1
226yu: Sites gravelly loam, bedrock substratum-----	3e-1	3e-1
227yu: Sites gravelly loam, bedrock substratum-----	4e-1	4e-1
242yu: Surnuf loam-----	3e-1	3e-1
243yu: Surnuf loam-----	4e-1	4e-1
244yu: Surnuf loam-----	6e-1	6e-1
245: Surnuf loam-----	7e-1	7e-1
248yu: Trainer loam-----	3w-2	2w-2
250: Llanoseco, occasionally flooded-----	3w-2	2w-2
252: Whitecabin silty clay, occasionally flooded-----	3w-2	3w-2
Ordferry silty clay, occasionally flooded-----	5w-2	5w-2
252yu: Woodleaf gravelly loam-----	7e-1	7e-1
253yu: Woodleaf gravelly loam-----	7e-1	7e-1
255: Whitecabin silty clay loam, occasionally flooded	3w-2	3w-2
Ordferry silty clay, occasionally flooded-----	5w-2	5w-2
256: Whitecabin silt loam, occasionally flooded-----	3w-2	3w-2
257: Llanoseco, frequently flooded-----	4w-2	4w-2
258: Codora, occasionally flooded-----	2w-2	3w-2
260: Ordferry silty clay, occasionally flooded-----	5w-2	5w-2
280: Columbia taxadjunct stratified very fine sandy loam-----	5w-2	5w-2
290: Perkins gravelly loam-----	3s-4	2s-4
300: Redsluff gravelly loam-----	3s-11	2s-11

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
301:		
Wafap gravelly loam-----	5w-2	5w-2
Hamslough clay-----	5w-2	5w-2
302:		
Redtough loam-----	7s-8	7s-8
Redswale cobbly loam-----	8	8
303:		
Munjar gravelly loam-----	6s-3	6s-3
Tuscan taxadjunct gravelly clay loam-----	5w-8	5w-8
Galt clay-----	5w-2	5w-2
304:		
Redtough loam-----	7s-8	7s-8
305:		
Redtough gravelly loam-----	6e-8	6e-8
Redswale loam-----	8	8
Anita, gravelly duripan-----	7w-2	7w-2
306:		
Duric Xerarents, fill-----	7w-2	7w-2
Duric Xerarents, cut-----	7w-2	7w-2
307:		
Duric Xerarents clay loam, leveled-----	7w-2	7w-2
310:		
Kimball loam-----	3s-3	2s-3
317:		
Thompsonflat loam-----	3e-3	3e-3
318:		
Thompsonflat fine sandy loam-----	3e-3	3e-3
Oroville gravelly fine sandy loam-----	4e-3	4e-3
320:		
Vistarobles sandy loam-----	7e-8	7e-8
Redding loam-----	3e-3	3e-3
321:		
Durixeralfs, fine-loamy, gravelly fine sandy loam	4s-8	4s-8
Durixeralfs, loamy-skeletal, gravelly fine sandy loam-----	7w-8	7w-8
Typic Petraquepts silty clay-----	7w-3	7w-3
330:		
Wilsoncreek loam, occasionally flooded-----	3w-2	2w-2
Trainer loam, occasionally flooded-----	3w-2	2w-2

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
331: Thompsonflat loam-----	4e-3	4e-3
335: Galt clay loam-----	5w-2	5w-2
336: Galt clay-----	5w-2	5w-2
337: Galt clay loam-----	5w-2	5w-2
338: Oxyaquic Xerofluvents silt loam-----	3w-2	3w-2
339: Oxyaquic Xerofluvents sandy loam, frequently flooded-----	4w-2	4w-2
340: Rock outcrop, Lovejoy basalt-----	8	8
Thermalrocks very gravelly loam-----	8	8
Campbellhills gravelly loam-----	6e-4	6e-4
341: Elsey loam-----	6e-8	6e-8
Beatsonhollow gravelly loam-----	7w-2	7w-2
Campbellhills gravelly loam-----	6e-4	6e-4
Rock outcrop, Lovejoy basalt-----	8	8
342: Thermalrocks very gravelly loam-----	8	8
Beatsonhollow taxadjunct fine sandy loam-----	6e-8	6e-8
Rock outcrop, Lovejoy basalt-----	8	8
343: Coalcanyon very cobbly loam-----	4s-7	4s-7
Coonhollow gravelly loam-----	4s-7	4s-7
344: Coalcanyon very cobbly loam-----	4s-7	4s-7
Coonhollow gravelly loam-----	4s-7	4s-7
Rock outcrop, Lovejoy basalt-----	8	8
346: Cherotable loam-----	3e-1	3e-1
Elsey loam-----	6e-8	6e-8
347: Haplic Palexeralfs loam-----	3s-4	3s-4
353: Cherokeespring gravelly silt loam-----	3e-1	3e-1

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
355:		
Coalcanyon very cobbly loam-----	4s-7	4s-7
Talus-----	8	8
356:		
Coalcanyon very cobbly loam-----	6e-7	6e-7
Rock outcrop, basalt cliffs-----	8	8
Talus-----	8	8
Coonhollow gravelly loam-----	6e-7	6e-7
360:		
Typic Xerofluvents, coarse-loamy-----	3s-4	2s-4
Typic Xerofluvents, sandy-skeletal-----	7s-4	7s-4
361:		
Typic Xerofluvents, sandy-skeletal-----	7s-4	7s-4
362:		
Ultic Haploxeralfs, sandstone, low elevation, very deep-----	3e-1	2e-1
Ultic Haploxeralfs, sandstone, low elevation, deep-----	3e-1	2e-1
363:		
Ultic Haploxeralfs, sandstone, low elevation, very deep-----	3e-1	3e-1
Ultic Haploxeralfs, sandstone, low elevation, deep-----	3e-1	3e-1
364:		
Ultic Haploxeralfs, sandstone, low elevation, deep-----	4e-1	4e-1
Ultic Haploxeralfs, sandstone, low elevation, very deep-----	4e-1	4e-1
365:		
Palexerults gravelly loam-----	4e-1	4e-1
366:		
Palexerults gravelly loam-----	6e-1	6e-1
370:		
Palexerults gravelly loam-----	3e-1	3e-1
375:		
Wickscorner loam-----	3e-1	2e-1
376:		
Flagcanyon gravelly loam-----	3e-3	3e-3
Wickscorner loam-----	3e-1	2e-1
377:		
Flagcanyon taxadjunct fine sandy loam-----	3e-3	3e-3
Durixeralfs clayey-skeletal loam-----	6e-2	6e-2
Duraquerts, gravelly clay-----	5w-2	5w-2

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
400: Subaco taxadjunct clay-----	5w-2	5w-2
415: Ignord fine sandy loam-----	3s-6	2s-6
416: Calcic Haploxerolls sandy loam-----	3s-6	3s-6
418: Almendra loam-----	3c-1	1
419: Conejo fine sandy loam, overwash-----	3c-1	1
420: Conejo clay loam-----	3c-1	1
425: Vina fine sandy loam-----	3c-11	2s-11
426: Vina loam-----	3c-1	1
439: Oxyaquic Xerofluvents clay-----	5w-2	5w-2
440: Oxyaquic Xerofluvents silt loam, frequently flooded-----	4w-2	4w-2
441: Oxyaquic Xerofluvents very fine sandy loam-----	3w-2	3w-2
442: Durixerolls clay loam-----	5w-2	5w-2
Haploxerolls clay loam-----	3s-2	3s-2
443: Durixerolls loam-----	5w-2	5w-2
Haploxerolls loam-----	3s-2	3s-2
445: Chico loam-----	3c-1	1
447: Charger fine sandy loam-----	3s-11	2s-11
448: Haploxerolls clay loam-----	2s-3	3s-3
449: Haploxerolls loam-----	2s-3	3s-3
500: Lofgren clay-----	5w-2	5w-2
Blavo clay-----	5w-2	5w-2
501: Lofgren clay, occasionally flooded-----	5w-2	5w-2
Blavo clay, occasionally flooded-----	5w-2	5w-2

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
502: Blavo silt loam, overwash, occasionally flooded--	5w-2	5w-2
519: Edjobe silty clay-----	5w-2	5w-2
520: Esquon clay-----	5w-2	5w-2
Neerdobe clay-----	5w-2	5w-2
521: Neerdobe silt loam, overwash-----	5w-2	5w-2
522: Clear Lake silty clay loam, overwash-----	5w-2	5w-2
523: Esquon silty clay loam, overwash-----	5w-2	5w-2
525: Govstanford loam-----	3s-3	3s-3
526: Govstanford loam, occasionally flooded-----	3w-2	3w-2
528: Neerdobe clay loam-----	5w-2	5w-2
550: Dunstone loam, dry-----	4e-1	4e-1
Loafercreek silt loam, dry-----	3e-1	3e-1
551: Dunstone loam, dry-----	6e-1	6e-1
Lomarica loam-----	4e-4	4e-4
Argonaut taxadjunct loam-----	4e-4	4e-4
552: Dunstone gravelly loam-----	7e-1	7e-1
Loafercreek gravelly loam-----	3e-4	3e-1
553: Dunstone gravelly loam-----	7e-1	7e-1
Loafercreek gravelly loam-----	4e-1	4e-1
554: Dunstone gravelly loam-----	7e-1	7e-1
Loafercreek gravelly loam-----	6e-1	6e-1
555: Dunstone gravelly loam-----	8	8
Loafercreek gravelly loam-----	8	8

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
556:		
Mounthope loam-----	3e-1	3e-1
Hartsmill gravelly loam-----	3e-7	3e-7
557:		
Mounthope loam-----	4e-1	4e-1
Hartsmill gravelly loam-----	4e-1	4e-1
558:		
Hartsmill gravelly loam-----	6e-1	6e-1
Mounthope loam-----	6e-1	6e-1
559:		
Hartsmill gravelly loam-----	7e-1	7e-1
Mounthope loam-----	7e-1	7e-1
560:		
Hartsmill gravelly loam-----	8	8
Mounthope loam-----	8	8
561:		
Bigridge loam-----	3e-7	3e-7
Minniecreek loam-----	3e-7	3e-7
562:		
Bigridge loam-----	4e-1	4e-1
Minniecreek loam-----	4e-1	4e-1
563:		
Bigridge loam-----	6e-1	6e-1
Minniecreek loam-----	6e-1	6e-1
564:		
Bigridge loam-----	7e-1	7e-1
Minniecreek loam-----	7e-1	7e-1
565:		
Dunstone loam, dry-----	4e-1	4e-1
Argonaut taxadjunct loam-----	3e-4	3e-4
Sunnyslope loam-----	7e-4	7e-4
566:		
Dunstone loam, dry-----	4e-1	4e-1
Loafercreek silt loam, dry-----	3e-1	3e-1
Katskillhill loam-----	3e-3	3e-3

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
567:		
Dunstone loam, dry-----	4e-1	4e-1
Loafercreek silt loam, dry-----	3e-1	3e-1
Argonaut taxadjunct loam-----	3e-4	3e-4
577:		
Parkshill coarse sandy loam-----	4e-4	4e-4
Flanly loam-----	4e-1	4e-1
Hurleton gravelly sandy loam-----	7e-4	7e-4
578:		
Flanly loam-----	4e-1	4e-1
Swedesflat cobbly fine sandy loam-----	7e-4	7e-4
580:		
Surnuf taxadjunct loam-----	3e-1	3e-1
Griffgulch very gravelly silt loam-----	3e-1	3e-1
Rock outcrop, metavolcanic-----	8	8
581:		
Surnuf taxadjunct loam-----	4e-1	4e-1
Griffgulch very gravelly silt loam-----	4e-1	4e-1
582:		
Surnuf taxadjunct loam-----	6e-1	6e-1
Griffgulch very gravelly silt loam-----	6e-1	6e-1
583:		
Surnuf taxadjunct loam-----	7e-1	7e-1
Griffgulch very gravelly silt loam-----	7e-1	7e-1
584:		
Flanly loam-----	6e-1	6e-1
Swedesflat cobbly fine sandy loam-----	7e-4	7e-4
Rackerby very gravelly sandy loam-----	7e-4	7e-4
585:		
Flanly loam-----	4e-1	4e-1
Sommeyleft loam-----	3e-1	3e-1
586:		
Sommeyleft loam-----	4e-1	4e-1
Mounthope loam-----	4e-1	4e-1
587:		
Sommeyleft loam-----	6e-1	6e-1
Mounthope loam-----	6e-1	6e-1
Hurleton gravelly sandy loam-----	7e-4	7e-4

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
588: Ultic Haploxeralfs, thermic, high terrace-----	3e-1	3e-1
589: Ultic Haploxeralfs, thermic, high terrace-----	4e-1	4e-1
590: Vistarobles sandy loam-----	7e-8	7e-8
Redding loam-----	3e-3	3e-3
Argonaut taxadjunct loam-----	3e-4	3e-4
Haploxererts gravelly silty clay-----	3e-3	3e-3
603: Oroville gravelly fine sandy loam-----	4e-3	4e-3
Thermalito sandy loam-----	3e-3	3e-3
Fernandez sandy loam-----	3e-3	3e-3
Thompsonflat fine sandy loam-----	3e-3	3e-3
605: Duric Xerarents fine sandy loam, leveled-----	7w-2	7w-2
Oroville gravelly fine sandy loam-----	6s-2	6s-2
606: Redtough loam-----	7s-8	7s-8
Fallager loam-----	8	8
Anita, gravelly duripan-----	6s-5	6s-5
609: Anita, gravelly duripan-----	7w-2	7w-2
Tuscan taxadjunct gravelly clay loam-----	5w-8	5w-8
614: Doemill gravelly loam-----	6s-8	6s-8
Jokerst very cobbly loam-----	8	8
615: Doemill gravelly loam-----	6e-8	6e-8
Jokerst very cobbly loam-----	8	8
616: Jokerst very cobbly loam-----	8	8
Doemill gravelly loam-----	6e-8	6e-8
Typic Haploxeralfs gravelly loam-----	3e-1	3e-1
617: Doemill gravelly loam-----	6e-8	6e-8
Jokerst very cobbly loam-----	8	8
Typic Haploxeralfs gravelly loam-----	4e-1	4e-1

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
619: Carhart taxadjunct clay-----	5w-2	5w-2
620: Doemill gravelly loam-----	6e-8	6e-8
Jokerst very cobbly loam-----	8	8
Ultic Haploxeralfs, thermic, gravelly loam-----	4e-8	4e-8
621: Doemill gravelly loam-----	6e-8	6e-8
Jokerst very cobbly loam-----	8	8
Ultic Haploxeralfs, thermic, gravelly loam-----	4e-8	4e-8
622: Xerorthents, shallow-----	7s-8	7s-8
Typic Haploxeralfs gravelly loam-----	4e-1	4e-1
Rock outcrop, mudflow-breccia cliffs-----	8	8
623: Xerorthents, shallow-----	7s-8	7s-8
Typic Haploxeralfs gravelly loam-----	6e-1	6e-1
Rock outcrop, mudflow-breccia cliffs-----	8	8
624: Ultic Haploxeralfs, mesic, gravelly loam-----	3e-3	3e-1
Rockstripe very gravelly loam-----	7s-8	7s-8
625: Ultic Haploxeralfs, mesic, gravelly loam-----	4e-1	4e-1
Rockstripe very gravelly loam-----	7s-8	7s-8
626: Ultic Haploxeralfs gravelly loam-----	6e-1	6e-1
Rockstripe very gravelly loam-----	7s-8	7s-8
Rock outcrop, mudflow-breccia cliffs-----	8	8
627: Ultic Haploxeralfs gravelly loam-----	7e-1	7e-1
Rockstripe very gravelly loam-----	7s-8	7s-8
Rock outcrop, mudflow-breccia cliffs-----	8	8
628: Rockstripe very gravelly loam-----	8	8
Ultic Haploxeralfs gravelly loam-----	8	8
Rock outcrop, mudflow-breccia cliffs-----	8	8

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
629: Slideland gravelly loam-----	3e-1	3e-1
630: Slideland gravelly loam-----	4e-1	4e-1
631: Slideland gravelly loam-----	6e-1	6e-1
632: Ultic Haploxeralfs, conglomerate, very deep-----	3e-1	3e-1
Ultic Haploxeralfs, conglomerate, moderately deep	7s-8	7s-8
633: Ultic Haploxeralfs, conglomerate, very deep-----	4e-1	4e-1
Ultic Haploxeralfs, conglomerate, moderately deep	7s-8	7s-8
634: Ultic Haploxeralfs, conglomerate, very deep-----	6e-1	6e-1
Ultic Haploxeralfs, conglomerate, moderately deep	7s-8	7s-8
635: Ultic Haploxeralfs, conglomerate, very deep-----	7e-1	7e-1
Ultic Haploxeralfs, conglomerate, moderately deep	7s-8	7s-8
636: Ultic Haploxeralfs, conglomerate, moderately deep	8	8
Ultic Haploxeralfs, conglomerate, very deep-----	8	8
637: Ultic Haploxeralfs, sandstone-----	3e-1	3e-1
638: Ultic Haploxeralfs, sandstone-----	4e-1	4e-1
639: Ultic Haploxeralfs, sandstone-----	6e-1	6e-1
640: Ultic Haploxeralfs, sandstone-----	7e-1	7e-1
641: Ultic Haploxeralfs, sandstone-----	8	8
642: Chinacamp gravelly loam-----	3e-1	3e-1
643: Chinacamp gravelly loam-----	4e-1	4e-1
644: Chinacamp gravelly loam-----	6e-1	6e-1
645: Chinacamp gravelly loam-----	7e-1	7e-1
646: Coalcanyon taxadjunct very gravelly loam-----	4s-7	4s-7

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
647: Coalcanyon taxadjunct very gravelly loam-----	4s-7	4s-7
648: Coalcanyon taxadjunct very gravelly loam-----	6e-7	6e-7
649: Coalcanyon taxadjunct very gravelly loam-----	7e-7	7e-7
650: Schott very gravelly loam-----	4e-1	4e-1
651: Schott very gravelly loam-----	4e-1	4e-1
652: Schott very gravelly loam-----	6e-1	6e-1
Rock outcrop, mudflow breccia-----	8	8
654: Coridge bouldery loam-----	7e-7	7e-7
Rock outcrop, Cohasset basalt-----	8	8
655: Coridge bouldery loam-----	7e-7	7e-7
Rock outcrop, Cohasset basalt-----	8	8
656: Rock outcrop, basalt cliffs-----	8	8
Coalcanyon taxadjunct very gravelly loam-----	6e-7	6e-7
657: Bonneyridge sandy loam-----	4e-1	4e-1
Chawanakee gravelly sandy loam-----	7e-1	7e-1
Rock outcrop, quartz diorite-----	8	8
658: Bonneyridge sandy loam-----	6e-1	6e-1
Chawanakee gravelly sandy loam-----	7e-1	7e-1
Rock outcrop, quartz diorite-----	8	8
659: Bonneyridge sandy loam-----	7e-1	7e-1
Chawanakee gravelly sandy loam-----	7e-1	7e-1
Rock outcrop, quartz diorite-----	8	8
660: Bonneyridge sandy loam-----	8	8
Chawanakee gravelly sandy loam-----	8	8
Rock outcrop, quartz diorite-----	8	8

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
661:		
Millerridge gravelly sandy clay loam-----	3e-9	3e-9
Boxrobber cobbly sandy clay loam-----	7e-7	7e-7
662:		
Millerridge gravelly sandy clay loam-----	4e-9	4e-9
Boxrobber cobbly sandy clay loam-----	7e-7	7e-7
663:		
Millerridge gravelly sandy clay loam-----	6e-9	6e-9
Boxrobber cobbly sandy clay loam-----	7e-7	7e-7
664:		
Millerridge gravelly sandy clay loam-----	7e-9	7e-9
Boxrobber cobbly sandy clay loam-----	7e-7	7e-7
665:		
Surnuf gravelly loam-----	3e-1	3e-1
Bigridge loam-----	3e-1	3e-1
666:		
Surnuf gravelly loam-----	4e-1	4e-1
Bigridge loam-----	4e-1	4e-1
667:		
Surnuf gravelly loam-----	6e-1	6e-1
Bigridge loam-----	6e-1	6e-1
668:		
Surnuf gravelly loam-----	7e-1	7e-1
Bigridge loam-----	7e-1	7e-1
669:		
Oroshore gravelly loam-----	3e-1	3e-1
Mounthope loam-----	3e-1	3e-1
Dunstone gravelly loam-----	7e-1	7e-1
670:		
Oroshore gravelly loam-----	4e-1	4e-1
Mounthope loam-----	4e-1	4e-1
Dunstone gravelly loam-----	7e-1	7e-1
671:		
Oroshore gravelly loam-----	6e-1	6e-1
Mounthope loam-----	6e-1	6e-1
Dunstone gravelly loam-----	7e-1	7e-1

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
672:		
Oroshore gravelly loam-----	7e-1	7e-1
Mounthope loam-----	7e-1	7e-1
Dunstone gravelly loam-----	7e-1	7e-1
674:		
Chawanakee gravelly sandy loam-----	8	8
Bonneyridge sandy loam-----	8	8
Rock outcrop, quartz diorite-----	8	8
675:		
Clearhayes sandy clay loam-----	5w-2	5w-2
Hamslough clay-----	5w-2	5w-2
676:		
Carhart clay-----	5w-2	5w-2
Anita taxadjunct clay-----	7w-2	7w-2
677:		
Tuscan gravelly loam-----	7s-8	7s-8
Fallager loam-----	8	8
Anita, gravelly duripan-----	7w-2	7w-2
679:		
Lucksev loam-----	6e-1	6e-1
Butteside gravelly loam-----	3e-1	3e-1
Carhart clay-----	5w-2	5w-2
680:		
Lucksev loam-----	6e-1	6e-1
Butteside gravelly loam-----	6e-1	6e-1
683:		
Typic Haploxeralfs, magnesian, low elevation-----	7e-9	7e-9
Earlal very gravelly loam-----	7e-9	7e-9
Rock outcrop, serpentinite-----	8	8
684:		
Typic Haploxeralfs, magnesian, low elevation-----	7e-9	7e-9
Earlal very gravelly loam-----	7e-9	7e-9
Rock outcrop, serpentinite-----	8	8
685:		
Bosquejo taxadjunct, gravelly substratum-----	5w-5	5w-5
686:		
Redsluff taxadjunct clay loam-----	3s-11	2s-11

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
687:		
Xerorthents, shallow-----	7s-8	7s-8
Typic Haploxeralfs gravelly loam-----	3e-1	3e-1
700:		
Retsongulch very gravelly sandy loam-----	8	8
Flumewall gravelly sandy loam-----	7e-1	7e-1
701:		
Powellton gravelly loam-----	7e-1	7e-1
Obstruction gravelly sandy loam-----	7e-1	7e-1
702:		
Cerpone gravelly loam-----	3e-9	3e-9
Typic Haploxeralfs, magnesian, very gravelly loam	7e-9	7e-9
Earlal very gravelly loam-----	7e-9	7e-9
703:		
Cerpone gravelly loam-----	4e-9	4e-9
Typic Haploxeralfs, magnesian, very gravelly loam	7e-9	7e-9
Earlal very gravelly loam-----	7e-9	7e-9
Rock outcrop, serpentinite-----	8	8
704:		
Typic Haploxeralfs, magnesian, very gravelly loam	7e-9	7e-9
Earlal very gravelly loam-----	7e-9	7e-9
Cerpone gravelly loam-----	6e-9	6e-9
Rock outcrop, serpentinite-----	8	8
705:		
Typic Haploxeralfs, magnesian, very gravelly loam	7e-9	7e-9
Earlal very gravelly loam-----	7e-9	7e-9
Cerpone gravelly loam-----	7e-9	7e-9
Rock outcrop, serpentinite-----	8	8
711:		
Dixmine very gravelly loam-----	3e-1	3e-1
Toadtown loam-----	3e-1	3e-1
712:		
Dixmine very gravelly loam-----	4e-1	4e-1
Toadtown loam-----	4e-1	4e-1
713:		
Dixmine very gravelly loam-----	6e-1	6e-1
Toadtown loam-----	6e-1	6e-1

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
714:		
Dixmine very gravelly loam-----	7e-1	7e-1
Toadtown loam-----	7e-1	7e-1
715:		
Logtrain gravelly loam-----	8	8
Bottlehill very gravelly loam-----	8	8
Walkermine very gravelly loam-----	8	8
716:		
Griffgulch very gravelly silt loam-----	3e-1	3e-1
Surnuf gravelly loam-----	3e-1	3e-1
717:		
Griffgulch very gravelly silt loam-----	4e-1	4e-1
Surnuf gravelly loam-----	4e-1	4e-1
718:		
Griffgulch very gravelly silt loam-----	6e-1	6e-1
Surnuf gravelly loam-----	6e-1	6e-1
Spine taxadjunct very cobbly loam-----	7e-8	7e-8
719:		
Griffgulch very gravelly silt loam-----	7e-1	7e-1
Surnuf gravelly loam-----	7e-1	7e-1
Spine taxadjunct very cobbly loam-----	7e-8	7e-8
720:		
Dystroxerepts extremely gravelly loam-----	8	8
Haploxeralfs very gravelly loam-----	8	8
Rock outcrop, metavolcanic-----	8	8
721:		
Haploxerands, granitic till, medial sandy loam---	4e-1	4e-1
722:		
Haploxerands, granitic till, medial sandy loam---	6e-1	6e-1
723:		
Haploxerands, granitic till, medial sandy loam---	7e-1	7e-1
724:		
Haploxerands, volcanic till, cobbly medial sandy loam-----	3e-1	3e-1
725:		
Haploxerands, volcanic till, cobbly medial sandy loam-----	4e-1	4e-1
726:		
Haploxerands, volcanic till, cobbly medial sandy loam-----	6e-1	6e-1
727:		
Bonneyr ridge sandy loam-----	4e-4	4e-4

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
728: Bonneyridge sandy loam-----	6e-1	6e-1
729: Bonneyridge sandy loam-----	7e-1	7e-1
730: Tusccoll gravelly loam-----	6e-1	6e-1
Schott very gravelly loam-----	6e-1	6e-1
731: Tusccoll gravelly loam-----	7e-1	7e-1
Schott very gravelly loam-----	7e-1	7e-1
732: Bonepile taxadjunct, duripan substratum-----	4e-3	4e-3
733: Haploxeralfs, terrace, gravelly loam-----	3e-7	3e-7
734: Haploxerands medial sandy loam-----	3e-1	3e-1
Aquic Xerofluvents peaty very fine sandy loam---	5w-2	5w-2
735: Fluvaquents, loamy-----	5w-2	5w-2
801: Obstruction gravelly sandy loam-----	3e-1	3e-1
802: Obskel very gravelly sandy loam-----	4e-1	4e-1
Obstruction gravelly sandy loam-----	4e-1	4e-1
803: Obskel very gravelly sandy loam-----	6e-1	6e-1
Obstruction gravelly sandy loam-----	6e-1	6e-1
804: Obskel very gravelly sandy loam-----	7e-1	7e-1
Obstruction gravelly sandy loam-----	7e-1	7e-1
Retsongulch very gravelly sandy loam-----	7e-1	7e-1
805: Bottlehill very gravelly loam-----	4e-4	4e-4
Walkermine very gravelly loam-----	8	8
Logtrain gravelly loam-----	3e-1	3e-1
806: Bottlehill very gravelly loam-----	4e-1	4e-1
Walkermine very gravelly loam-----	8	8
Logtrain gravelly loam-----	4e-1	4e-1

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
807:		
Bottlehill very gravelly loam-----	6e-1	6e-1
Logtrain gravelly loam-----	6e-1	6e-1
Walkermine very gravelly loam-----	8	8
808:		
Bottlehill very gravelly loam-----	7e-1	7e-1
Walkermine very gravelly loam-----	8	8
Logtrain gravelly loam-----	7e-1	7e-1
809:		
Walkermine very gravelly loam-----	8	8
Bottlehill very gravelly loam-----	8	8
Logtrain gravelly loam-----	8	8
Rock outcrop, metavolcanic-----	8	8
810:		
Dixmine very gravelly loam-----	6e-1	6e-1
Mac gravelly loam-----	6e-1	6e-1
Spine very gravelly loam-----	7e-8	7e-8
811:		
Powellton gravelly loam-----	3e-1	3e-1
Toadtown loam-----	3e-1	3e-1
812:		
Powellton gravelly loam-----	4e-1	4e-1
Toadtown loam-----	4e-1	4e-1
813:		
Powellton gravelly loam-----	6e-1	6e-1
Toadtown loam-----	6e-1	6e-1
814:		
Mountyana gravelly loam-----	3e-1	3e-1
815:		
Mountyana gravelly loam-----	4e-1	4e-1
817:		
Lydon very gravelly medial coarse sandy loam-----	4e-1	4e-1
818:		
Lydon very gravelly medial coarse sandy loam-----	4e-1	4e-1
819:		
Lydon very gravelly medial coarse sandy loam-----	7e-1	7e-1
Rock outcrop, mudflow breccia-----	8	8

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
820:		
Lydon very gravelly medial coarse sandy loam-----	7e-1	7e-1
Rock outcrop, mudflow breccia-----	8	8
821:		
Lydon very gravelly medial coarse sandy loam-----	8	8
Rock outcrop, mudflow breccia-----	8	8
822:		
Bonepile gravelly medial loam-----	3e-1	3e-1
823:		
Bonepile gravelly medial loam-----	4e-1	4e-1
824:		
Beecee very gravelly medial loam-----	6e-1	6e-1
825:		
Beecee very gravelly medial loam-----	7e-1	7e-1
Lydon very gravelly medial coarse sandy loam-----	7e-1	7e-1
826:		
Redbone gravelly medial sandy loam-----	3e-1	3e-1
827:		
Redbone gravelly medial sandy loam-----	4e-1	4e-1
829:		
Paradiso loam-----	3e-1	3e-1
830:		
Paradiso loam-----	4e-1	4e-1
831:		
Surnuf gravelly loam-----	3e-1	3e-1
Bigridge loam-----	3e-1	3e-1
Spine very gravelly loam-----	7e-8	7e-8
832:		
Surnuf gravelly loam-----	4e-1	4e-1
Bigridge loam-----	4e-1	4e-1
Spine very gravelly loam-----	7e-8	7e-8
833:		
Surnuf gravelly loam-----	6e-1	6e-1
Bigridge loam-----	6e-1	6e-1
Spine very gravelly loam-----	7e-8	7e-8
834:		
Hietanen gravelly loam-----	3e-1	3e-1
Mac gravelly loam-----	3e-1	3e-1

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
835:		
Hietanen gravelly loam-----	4e-1	4e-1
Mac gravelly loam-----	4e-1	4e-1
836:		
Hietanen gravelly loam-----	6e-1	6e-1
Mac gravelly loam-----	6e-1	6e-1
Spine very gravelly loam-----	7e-8	7e-8
837:		
Hietanen gravelly loam-----	7e-1	7e-1
Spine very gravelly loam-----	7e-8	7e-8
Mac gravelly loam-----	7e-1	7e-1
838:		
Dixmine very gravelly loam-----	7e-1	7e-1
Spine very gravelly loam-----	7e-8	7e-8
Mac gravelly loam-----	7e-1	7e-1
839:		
Chawanakee gravelly sandy loam-----	7e-1	7e-1
Billscabin gravelly sandy loam-----	4e-1	4e-1
841:		
Billscabin gravelly sandy loam-----	7e-1	7e-1
Bonneyridge sandy loam-----	7e-1	7e-1
842:		
Billscabin gravelly sandy loam-----	8	8
Bonneyridge sandy loam-----	8	8
846:		
Bonneyridge sandy loam-----	4e-1	4e-1
Lewisflat loam-----	3e-1	3e-1
847:		
Bonneyridge sandy loam-----	6e-1	6e-1
Lewisflat loam-----	4e-1	4e-1
848:		
Bonneyridge sandy loam-----	7e-1	7e-1
Lewisflat loam-----	6e-1	6e-1
850:		
Lewisflat loam-----	3e-1	3e-1
851:		
Lewisflat loam-----	4e-1	4e-1

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
852: Lewisflat loam-----	6e-1	6e-1
860: Toadtown gravelly loam-----	3e-1	3e-1
Powellton silt loam-----	3e-1	3e-1
861: Toadtown gravelly loam-----	4e-1	4e-1
Powellton silt loam-----	4e-1	4e-1
862: Toadtown gravelly loam-----	6e-1	6e-1
Powellton silt loam-----	6e-1	6e-1
863: Toadtown gravelly loam-----	7e-1	7e-1
Powellton silt loam-----	7e-1	7e-1
880: Sites taxadjunct gravelly loam-----	3e-1	3e-1
Jocal taxadjunct gravelly loam-----	3e-1	3e-1
881: Sites taxadjunct gravelly loam-----	4e-1	4e-1
Jocal taxadjunct gravelly loam-----	4e-1	4e-1
882: Sites taxadjunct gravelly loam-----	6e-1	6e-1
Jocal taxadjunct gravelly loam-----	6e-1	6e-1
883: Sites taxadjunct gravelly loam-----	7e-1	7e-1
Jocal taxadjunct gravelly loam-----	7e-1	7e-1
885: Rogerville silt loam-----	3e-1	3e-1
886: Rogerville silt loam-----	4e-1	4e-1
892: Rogerville silt loam-----	7e-1	7e-1
893: Rogerville silt loam-----	6e-1	6e-1
902: Lava flows, Lovejoy basalt-----	8	8
Lumpkin gravelly medial sandy loam-----	8	8

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
903:		
Mudwash gravelly medial sandy loam-----	4e-1	4e-1
Timberisland very gravelly medial sandy loam-----	7e-1	7e-1
Lavatop gravelly medial fine sandy loam-----	7e-1	7e-1
904:		
Lava flows, Lovejoy basalt-----	8	8
Lavatop gravelly medial fine sandy loam-----	7e-1	7e-1
905:		
Lava flows, Lovejoy basalt-----	8	8
Lumpkin gravelly medial sandy loam-----	8	8
906:		
Lava flows, Lovejoy basalt-----	8	8
Lumpkin gravelly medial sandy loam-----	8	8
911:		
Endoquolls loam-----	5w-2	5w-2
923:		
Powderhouse medial sandy loam-----	6e-1	6e-1
McNair medial coarse sandy loam-----	3e-1	3e-1
Greenwell medial sandy loam-----	6e-1	6e-1
924:		
Powderhouse medial sandy loam-----	6e-1	6e-1
McNair medial coarse sandy loam-----	4e-1	4e-1
Greenwell medial sandy loam-----	6e-1	6e-1
925:		
Powderhouse medial sandy loam-----	6e-1	6e-1
McNair medial coarse sandy loam-----	6e-1	6e-1
Greenwell medial sandy loam-----	6e-1	6e-1
930:		
Shakeridge gravelly medial coarse sandy loam-----	6e-1	6e-1
Timberisland very gravelly medial sandy loam-----	7e-1	7e-1
931:		
Shakeridge gravelly medial coarse sandy loam-----	6e-1	6e-1
Mudwash gravelly medial sandy loam-----	4e-1	4e-1
Timberisland very gravelly medial sandy loam-----	7e-1	7e-1
932:		
Shakeridge gravelly medial coarse sandy loam-----	6e-1	6e-1
Mudwash gravelly medial sandy loam-----	6e-1	6e-1

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
933: Shakeridge gravelly medial coarse sandy loam-----	7e-1	7e-1
934: Mudwash gravelly medial sandy loam-----	3e-1	3e-1
939: Fluvaquentic Humaquepts very fine sandy loam-----	5w-2	5w-2
940: Dejonah gravelly loam-----	3e-1	3e-1
Stagpoint loam-----	3e-1	3e-1
941: Dejonah gravelly loam-----	4e-1	4e-1
Stagpoint loam-----	4e-1	4e-1
942: Stagpoint loam-----	6e-1	6e-1
Dejonah gravelly loam-----	6e-1	6e-1
948: Stagpoint loam-----	7e-1	7e-1
Dejonah gravelly loam-----	7e-1	7e-1
949: Rogerville taxadjunct fine sandy loam-----	6e-1	6e-1
950: Lumpkin taxadjunct very gravelly medial very fine sandy loam-----	8	8
Rock outcrop, olivine basalt, andesite, or mudflow-----	8	8
Powderhouse medial sandy loam-----	6e-1	6e-1
951: Lumpkin taxadjunct very gravelly medial very fine sandy loam-----	8	8
Rock outcrop, andesite-----	8	8
Powderhouse medial sandy loam-----	6e-1	6e-1
960: Surnuf gravelly loam, high elevation-----	2e-1	2e-1
961: Surnuf gravelly loam, high elevation-----	3e-1	3e-1
962: Surnuf gravelly loam, high elevation-----	4e-1	4e-1
963: Surnuf gravelly loam, high elevation-----	6e-1	6e-1
990: Riverwash, frequently flooded-----	8	8

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
991: Xerofluvents sandy loam, frequently flooded-----	6w-2	6w-2
995: Pits, gravel-----	8	8
996: Dumps, excavated material-----	8	8
997: Pits-----	8	8
998: Dumps, landfill-----	8	8
999. Water		
DAM. Dam, manmade		

Table 6.--Prime Farmland

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland. If a soil is prime farmland only under certain conditions, the conditions are specified in parentheses after the soil name)

Map symbol	Map unit name
104	Bosquejo clay, 0 to 1 percent slopes (where irrigated)
105	Busacca clay loam, 0 to 1 percent slopes (where irrigated)
109	Bosquejo clay loam, 0 to 1 percent slopes (where irrigated)
110	Bosquejo silt loam, 0 to 1 percent slopes, overwash, occasionally flooded (where irrigated)
121	Boga-Loemstone complex, 0 to 1 percent slopes (where irrigated)
126	Liveoak sandy loam, 0 to 2 percent slopes (where irrigated)
138su	Liveoak sandy clay loam, 0 to 2 percent slopes (where irrigated)
150su	Olashes sandy loam, 0 to 2 percent slopes (where irrigated)
158	Gianella fine sandy loam, 0 to 1 percent slopes, occasionally flooded (where irrigated)
160	Gianella loam, 0 to 1 percent slopes, occasionally flooded (where irrigated)
161	Gianella fine sandy loam, 0 to 1 percent slopes, rarely flooded (where irrigated)
162	Gianella loam, 0 to 1 percent slopes, rarely flooded (where irrigated)
163yu	Holillipah loamy sand, 0 to 1 percent slopes, frequently flooded (where irrigated and either protected from flooding or not frequently flooded during the growing season)
175	Farwell clay loam, 0 to 1 percent slopes (where irrigated)
176	Farwell loam, 0 to 1 percent slopes, occasionally flooded (where irrigated)
177	Farwell silt loam, 0 to 1 percent slopes, occasionally flooded (where irrigated)
178	Arbuckle gravelly loam, 0 to 2 percent slopes (where irrigated)
180	Dodgeland silty clay loam, 0 to 5 percent slopes, occasionally flooded (where irrigated)
189	Esquon silt loam, 0 to 1 percent slopes, overwash (where irrigated)
200	Parrott silt loam, 0 to 2 percent slopes, occasionally flooded (where irrigated)
203	Kusalslough silty clay loam, 0 to 1 percent slopes, occasionally flooded (where irrigated)
221yu	Sites loam, 3 to 8 percent slopes (where irrigated)
225yu	Sites gravelly loam, bedrock substratum, 3 to 8 percent slopes (where irrigated)
248yu	Trainer loam, 0 to 1 percent slopes, occasionally flooded (where irrigated)
250	Llanoseco silty clay loam, 0 to 2 percent slopes, occasionally flooded (where irrigated)
252	Whitecabin-Ordferry silty clays, 0 to 1 percent slopes, occasionally flooded (where irrigated)
255	Whitecabin-Ordferry complex, 0 to 1 percent slopes, occasionally flooded (where irrigated)
256	Whitecabin silt loam, 0 to 1 percent slopes, occasionally flooded (where irrigated)
258	Codora silty clay loam, 0 to 1 percent slopes, occasionally flooded (where irrigated)
290	Perkins gravelly loam, 0 to 2 percent slopes (where irrigated)
300	Redsluff gravelly loam, 0 to 2 percent slopes (where irrigated)
330	Wilsoncreek-Trainer loams, 0 to 2 percent slopes, occasionally flooded (where irrigated)
338	Oxyaquic Xerofluvents silt loam, 0 to 1 percent slopes (where irrigated)
415	Ignord fine sandy loam, 0 to 2 percent slopes (where irrigated)
418	Almendra loam, 0 to 1 percent slopes (where irrigated)
419	Conejo fine sandy loam, 0 to 1 percent slopes, overwash (where irrigated)
420	Conejo clay loam, 0 to 1 percent slopes (where irrigated)
425	Vina fine sandy loam, 0 to 1 percent slopes (where irrigated)
426	Vina loam, 0 to 1 percent slopes (where irrigated)
441	Oxyaquic Xerofluvents very fine sandy loam, 0 to 1 percent slopes (where irrigated)
445	Chico loam, 0 to 1 percent slopes (where irrigated)
447	Charger fine sandy loam, 0 to 1 percent slopes (where irrigated)
448	Haploxerolls clay loam, 0 to 2 percent slopes (where irrigated)
449	Haploxerolls loam, 0 to 2 percent slopes (where irrigated)
500	Lofgren-Blavo complex, 0 to 1 percent slopes (where irrigated)
501	Lofgren-Blavo complex, 0 to 1 percent slopes, occasionally flooded (where irrigated)
519	Edjobe silty clay, 0 to 1 percent slopes (where irrigated)
520	Esquon-Neerdobe complex, 0 to 1 percent slopes (where irrigated)

Table 7.--Farmland of Statewide Importance

(Urban or built-up areas within the map units listed below are not considered farmland of statewide importance)

Map symbol	Map unit name
120	Gridley taxadjunct clay loam, 0 to 2 percent slopes
125	Gridley taxadjunct-Calcic Haploxerolls complex, 0 to 2 percent slopes
127	Gridley taxadjunct loam, 0 to 2 percent slopes
130	Eastbiggs loam, 0 to 2 percent slopes
133	Eastbiggs-Galt complex, 0 to 3 percent slopes
143su	Marcum-Gridley clay loams, 0 to 1 percent slopes
179	Moda taxadjunct-Arbuckle complex, 0 to 2 percent slopes
222yu	Sites loam, 8 to 15 percent slopes
226yu	Sites gravelly loam, bedrock substratum, 8 to 15 percent slopes
260	Ord ferry silty clay, 0 to 1 percent slopes, occasionally flooded
310	Kimball loam, 1 to 3 percent slopes
317	Thompsonflat loam, 2 to 15 percent slopes
318	Thompsonflat-Oroville complex, 0 to 9 percent slopes
416	Calcic Haploxerolls, 0 to 1 percent slopes
442	Durixerolls-Haploxerolls clay loams, 0 to 2 percent slopes
443	Durixerolls-Haploxerolls loams, 0 to 2 percent slopes
502	Blavo silt loam, 0 to 1 percent slopes, overwash, occasionally flooded
521	Neerdobe silt loam, 0 to 1 percent slopes, overwash
528	Neerdobe clay loam, 0 to 1 percent slopes

Table 8.--Storie Index

(The California Storie Index expresses numerically the relative degree of suitability of a soil for general intensive agricultural uses at the time of evaluation. The rating is based on soil characteristics only and is obtained by evaluating such factors as soil depth, texture of the surface soil, subsoil characteristics, and surface relief. The ratings shown are for soils that are used to produce the commonly grown crops or for livestock grazing)

Map symbol and soil name	Storie index	Storie grade
100: Anita clay-----	3	Grade six - nonagricultural
Galt clay-----	10	Grade five - very poor
104: Bosquejo clay-----	35	Grade four - poor
105: Busacca clay loam-----	76	Grade two - good
108: Tuscan gravelly loam-----	6	Grade six - nonagricultural
Igo gravelly loam-----	5	Grade six - nonagricultural
Anita clay-----	3	Grade six - nonagricultural
109: Bosquejo clay loam-----	62	Grade two - good
110: Bosquejo silt loam, overwash, occasionally flooded-----	69	Grade two - good
118: Xerorthents, tailings-----	34	Grade four - poor
118co: Clear Lake clay, frequently flooded-----	24	Grade four - poor
119: Xerorthents, tailings-----	37	Grade four - poor
Urban land.		
120: Gridley taxadjunct clay loam-----	15	Grade five - very poor
121: Boga loam-----	84	Grade one - excellent
Loemstone loam-----	54	Grade three - fair
121su: Columbia fine sandy loam, frequently flooded-----	58	Grade three - fair

Table 8.--Storie Index--Continued

Map symbol and soil name	Storie index	Storie grade
125: Gridley taxadjunct loam-----	17	Grade five - very poor
Calcic Haploxerolls sandy loam-----	67	Grade two - good
126: Liveoak sandy loam-----	84	Grade one - excellent
127: Gridley taxadjunct loam-----	17	Grade five - very poor
130: Eastbiggs loam-----	22	Grade four - poor
133: Eastbiggs loam-----	21	Grade four - poor
Galt clay loam-----	18	Grade five - very poor
136: Duric Xerarents, cut-----	15	Grade five - very poor
Duric Xerarents, fill-----	63	Grade two - good
Eastbiggs fine sandy loam, leveled-----	24	Grade four - poor
138su: Liveoak sandy clay loam-----	84	Grade one - excellent
139su: Liveoak taxadjunct loam, frequently flooded-----	58	Grade three - fair
Galt taxadjunct clay loam, frequently flooded----	16	Grade five - very poor
143su: Marcum clay loam-----	43	Grade three - fair
Gridley clay loam-----	38	Grade four - poor
150: Columbia stratified sand to fine sandy loam-----	35	Grade four - poor
150su: Olashes sandy loam-----	93	Grade one - excellent
152: Gianella fine sandy loam, frequently flooded-----	66	Grade two - good
153: Gianella sandy loam, frequently flooded-----	63	Grade two - good
154: Gianella silt loam, frequently flooded-----	66	Grade two - good

Table 8.--Storie Index--Continued

Map symbol and soil name	Storie index	Storie grade
158: Gianella fine sandy loam, occasionally flooded---	80	Grade one - excellent
160: Gianella loam, occasionally flooded-----	80	Grade one - excellent
161: Gianella fine sandy loam, rarely flooded-----	85	Grade one - excellent
162: Gianella loam, rarely flooded-----	85	Grade one - excellent
163yu: Holillipah loamy sand-----	47	Grade three - fair
175: Farwell clay loam, rarely flooded-----	75	Grade two - good
176: Farwell loam, occasionally flooded-----	79	Grade two - good
177: Farwell silt loam, occasionally flooded-----	79	Grade two - good
178: Arbuckle gravelly loam-----	71	Grade two - good
179: Moda taxadjunct loam-----	14	Grade five - very poor
Arbuckle gravelly loam-----	71	Grade two - good
180: Dodgeland silty clay loam, occasionally flooded--	43	Grade three - fair
181: Dodgeland silty clay loam, frequently flooded---	43	Grade three - fair
189: Esquon silt loam, overwash-----	49	Grade three - fair
200: Parrott silt loam, occasionally flooded-----	83	Grade one - excellent
201: Parrott silt loam, frequently flooded-----	65	Grade two - good
203: Kusalslough silty clay loam, occasionally flooded	62	Grade two - good
205: Parrott silt loam, frequently flooded-----	65	Grade two - good
Vermet silt loam, frequently flooded-----	34	Grade four - poor

Table 8.--Storie Index--Continued

Map symbol and soil name	Storie index	Storie grade
220: Esquon clay, frequently flooded-----	24	Grade four - poor
Clear Lake silty clay loam, overwash-----	31	Grade four - poor
248yu: Trainer loam-----	69	Grade two - good
250: Llanoseco, occasionally flooded-----	63	Grade two - good
252: Whitcabin silty clay, occasionally flooded-----	26	Grade four - poor
Ordferry silty clay, occasionally flooded-----	10	Grade five - very poor
255: Whitcabin silty clay loam, occasionally flooded	44	Grade three - fair
Ordferry silty clay, occasionally flooded-----	10	Grade five - very poor
256: Whitcabin silt loam, occasionally flooded-----	49	Grade three - fair
257: Llanoseco, frequently flooded-----	53	Grade three - fair
258: Codora, occasionally flooded-----	62	Grade two - good
260: Ordferry silty clay, occasionally flooded-----	10	Grade five - very poor
280: Columbia taxadjunct stratified very fine sandy loam-----	49	Grade three - fair
290: Perkins gravelly loam-----	53	Grade three - fair
300: Redsluff gravelly loam-----	52	Grade three - fair
301: Wafap gravelly loam-----	24	Grade four - poor
Hamslough clay-----	5	Grade six - nonagricultural
302: Redtough loam-----	11	Grade five - very poor
Redswale cobbly loam-----	4	Grade six - nonagricultural
303: Munjar gravelly loam-----	21	Grade four - poor

Table 8.--Storie Index--Continued

Map symbol and soil name	Storie index	Storie grade
303: Tuscan taxadjunct gravelly clay loam-----	15	Grade five - very poor
Galt clay-----	10	Grade five - very poor
304: Redtough loam-----	12	Grade five - very poor
305: Redtough gravelly loam-----	39	Grade four - poor
Redswale loam-----	39	Grade four - poor
Anita, gravelly duripan-----	12	Grade five - very poor
306: Duric Xerarents, fill-----	34	Grade four - poor
Duric Xerarents, cut-----	14	Grade five - very poor
307: Duric Xerarents clay loam, leveled-----	11	Grade five - very poor
310: Kimball loam-----	58	Grade three - fair
317: Thompsonflat loam-----	83	Grade one - excellent
318: Thompsonflat fine sandy loam-----	83	Grade one - excellent
Oroville gravelly fine sandy loam-----	7	Grade six - nonagricultural
320: Vistarobles sandy loam-----	10	Grade six - nonagricultural
Redding loam-----	32	Grade four - poor
321: Durixeralfs, fine-loamy, gravelly fine sandy loam	35	Grade four - poor
Durixeralfs, loamy-skeletal, gravelly fine sandy loam-----	13	Grade five - very poor
Typic Petraquepts silty clay-----	12	Grade five - very poor
330: Wilsoncreek loam, occasionally flooded-----	79	Grade two - good
Trainer loam, occasionally flooded-----	69	Grade two - good

Table 8.--Storie Index--Continued

Map symbol and soil name	Storie index	Storie grade
331: Thompsonflat loam-----	69	Grade two - good
335: Galt clay loam-----	18	Grade five - very poor
336: Galt clay-----	10	Grade five - very poor
337: Galt clay loam-----	18	Grade five - very poor
338: Oxyaquic Xerofluvents silt loam-----	70	Grade two - good
339: Oxyaquic Xerofluvents sandy loam, frequently flooded-----	56	Grade three - fair
360: Typic Xerofluvents, coarse-loamy-----	46	Grade three - fair
Typic Xerofluvents, sandy-skeletal-----	46	Grade three - fair
375: Wicks corner loam-----	83	Grade one - excellent
376: Flagcanyon gravelly loam-----	43	Grade three - fair
Wicks corner loam-----	86	Grade one - excellent
377: Flagcanyon taxadjunct fine sandy loam-----	48	Grade three - fair
Durixeralfs clayey-skeletal loam-----	34	Grade four - poor
Duraquerts gravelly clay-----	11	Grade five - very poor
400: Subaco taxadjunct clay-----	15	Grade five - very poor
415: Ignord fine sandy loam-----	85	Grade one - excellent
416: Calcic Haploxerolls sandy loam-----	67	Grade two - good
418: Almendra loam-----	94	Grade one - excellent
419: Conejo fine sandy loam, overwash-----	89	Grade one - excellent

Table 8.--Storie Index--Continued

Map symbol and soil name	Storie index	Storie grade
420: Conejo clay loam-----	85	Grade one - excellent
425: Vina fine sandy loam-----	85	Grade one - excellent
426: Vina loam-----	93	Grade one - excellent
439: Oxyaquic Xerofluvents clay-----	24	Grade four - poor
440: Oxyaquic Xerofluvents silt loam, frequently flooded-----	58	Grade three - fair
441: Oxyaquic Xerofluvents very fine sandy loam-----	70	Grade two - good
442: Durixerolls clay loam-----	45	Grade three - fair
Haploxerolls clay loam-----	76	Grade two - good
443: Durixerolls loam-----	40	Grade three - fair
Haploxerolls loam-----	84	Grade one - excellent
445: Chico loam-----	94	Grade one - excellent
447: Charger fine sandy loam-----	84	Grade one - excellent
448: Haploxerolls clay loam-----	76	Grade two - good
449: Haploxerolls loam-----	84	Grade one - excellent
500: Lofgren clay-----	17	Grade five - very poor
Blavo clay-----	7	Grade six - nonagricultural
501: Lofgren clay, occasionally flooded-----	17	Grade five - very poor
Blavo clay, occasionally flooded-----	7	Grade six - nonagricultural

Table 8.--Storie Index--Continued

Map symbol and soil name	Storie index	Storie grade
502: Blavo silt loam, overwash, occasionally flooded--	14	Grade five - very poor
519: Edjobe silty clay-----	29	Grade four - poor
520: Esquon clay-----	24	Grade four - poor
Neerdobe clay-----	10	Grade five - very poor
521: Neerdobe silt loam, overwash-----	24	Grade four - poor
522: Clear Lake silty clay loam, overwash-----	31	Grade four - poor
523: Esquon silty clay loam, overwash-----	47	Grade three - fair
525: Govstanford loam-----	52	Grade three - fair
526: Govstanford loam, occasionally flooded-----	52	Grade three - fair
528: Neerdobe clay loam-----	13	Grade five - very poor
590: Vistarobles sandy loam-----	10	Grade six - nonagricultural
Redding loam-----	32	Grade four - poor
Argonaut taxadjunct loam-----	49	Grade three - fair
Haploxererts gravelly silty clay-----	17	Grade five - very poor
603: Oroville gravelly fine sandy loam-----	7	Grade six - nonagricultural
Thermalito sandy loam-----	22	Grade four - poor
Fernandez sandy loam-----	84	Grade one - excellent
Thompsonflat fine sandy loam-----	83	Grade one - excellent
605: Duric Xerarents fine sandy loam, leveled-----	12	Grade five - very poor
Oroville gravelly fine sandy loam-----	7	Grade six - nonagricultural

Table 8.--Storie Index--Continued

Map symbol and soil name	Storie index	Storie grade
606: Redtough loam-----	11	Grade five - very poor
Fallager loam-----	5	Grade six - nonagricultural
Anita, gravelly duripan-----	2	Grade six - nonagricultural
609: Anita, gravelly duripan-----	3	Grade six - nonagricultural
Tuscan taxadjunct gravelly clay loam-----	15	Grade five - very poor
675: Clearhayes sandy clay loam-----	55	Grade three - fair
Hamslough clay-----	15	Grade five - very poor
677: Tuscan gravelly loam-----	23	Grade four - poor
Fallager loam-----	22	Grade four - poor
Anita, gravelly duripan-----	9	Grade six - nonagricultural
685: Bosquejo taxadjunct gravelly substratum-----	34	Grade four - poor
686: Redsluff taxadjunct clay loam-----	80	Grade two - good

Table 9.--Hydric Soils

(This table lists the map units in the survey area that include hydric soils. Only the hydric components are shown. The (C) indicates a major component, and the (I) indicates a minor component. See text for an explanation of the hydric criteria codes)

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
100: Anita-Galt complex, 0 to 3 percent slopes	(C) Anita clay	Hydric	drainageways and depressions on fan terraces	2B3,3	Neither wooded nor farmable under natural conditions	60	
	(C) Galt clay	Hydric	drainageways and depressions on fan terraces	2B3,3	Farmable under natural conditions	25	
	(I) Bosquejo clay	Hydric	drainageways and depressions on fan terraces	3	Farmable under natural conditions	0-3	
	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools on fan terraces	3	Neither wooded nor farmable under natural conditions	0-2	
	(I) Anita taxadjunct clay	Hydric	toeslopes on volcanic ridges	2B3,3	Neither wooded nor farmable under natural conditions	0-2	
	(I) Soils that have a gravelly duripan	Hydric	fan terraces	3	Neither wooded nor farmable under natural conditions	0-2	
104: Bosquejo clay, 0 to 1 percent slopes	(I) Galt clay	Hydric	fan terraces	3	Farmable under natural conditions	0-3	
	(I) Edjobe silty clay	Hydric	flood basins	3	Farmable under natural conditions	0-1	
105: Busacca clay loam, 0 to 1 percent slopes	(I) Edjobe silty clay	Hydric	flood basins	3	Farmable under natural conditions	0-5	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
108: Tuscan-Igo-Anita complex, 0 to 3 percent slopes	(C) Anita clay	Hydric	depressions and swales on fan terraces	2B3,3	Neither wooded nor farmable under natural conditions	15	
118: Xerorthents, tailings, 0 to 50 percent slopes	(C) Xerorthents, tailings	Hydric	stream terraces and flood plains	4	Wooded under natural conditions	80	Flood-control structures have reduced natural flooding frequency and duration. Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and ponding depth, frequency, and duration.
	(I) Soils that are in riparian areas	Hydric	flood plains	4	Wooded under natural conditions	0-5	
	(I) Water-filled pits	Hydric	flood plains	4	Neither wooded nor farmable under natural conditions	0-5	
	(I) Xerofluvents, tailings	Hydric	flood plains	4	Neither wooded nor farmable under natural conditions	0-3	
	(I) Xeropsamments, tailings	Hydric	flood plains	4	Neither wooded nor farmable under natural conditions	0-3	
	(I) Soils that have a duripan	Hydric	edges of terraces	4	Neither wooded nor farmable under natural conditions	0-2	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
118co: Clear Lake clay, 0 to 2 percent slopes, frequently flooded	(C) Clear Lake clay, frequently flooded	Hydric	flood basins	2B3,4	Farmable under natural conditions	90	Flood-control structures have reduced natural flooding frequency and duration. Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and ponding depth, frequency, and duration.
	(I) Willows silty clay, frequently flooded	Hydric	flood basins	2B3,4	Farmable under natural conditions	0-6	
	(I) Clear Lake clay, occasionally flooded	Hydric	flood basins	2B3,4	Farmable under natural conditions	0-2	
	(I) Soils in channels	Hydric	channels	4	Wooded under natural conditions	0-2	
119: Xerorthents, tailings-Urban land complex, 0 to 2 percent slopes	(C) Xerorthents, tailings	Hydric	terraces and flood plains	4	Wooded under natural conditions	70	Flood-control structures have reduced natural flooding frequency and duration. Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and ponding depth, frequency, and duration.

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
120: Gridley taxadjunct clay loam, 0 to 2 percent slopes	(I) Neerdobe clay	Hydric	flood basins	3	Farmable under natural conditions	0-5	
	(I) Subaco taxadjunct clay	Hydric	flood basins	3	Farmable under natural conditions	0-2	
121su: Columbia fine sandy loam, 0 to 2 percent slopes, frequently flooded	(C) Columbia fine sandy loam, frequently flooded	Hydric	flood plains	4	Farmable under natural conditions	80	
	(I) Holillipah	Hydric	flood plains	4	Farmable under natural conditions	0-7	
	(I) Shanghai	Hydric	flood plains	4	Farmable under natural conditions	0-6	
125: Gridley taxadjunct-Calcic Haploxerolls complex, 0 to 2 percent slopes	(I) Subaco taxadjunct clay	Hydric	flood basins	3	Farmable under natural conditions	0-5	
127: Gridley taxadjunct loam, 0 to 2 percent slopes	(I) Soils that are frequently flooded	Hydric	channels on low terraces	3	Farmable under natural conditions	0-5	
130: Eastbiggs loam, 0 to 2 percent slopes	(I) Galt clay	Hydric	swales on low terraces	2B3,3	Farmable under natural conditions	0-9	
	(I) Clayey soils 10 to 20 inches deep to a duripan	Hydric	swales on low terraces	3	Farmable under natural conditions	0-3	
	(I) Loamy soils 10 to 20 inches deep to a duripan	Hydric	swales on low terraces	3	Farmable under natural conditions	0-2	
	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools on low terraces	3	Farmable under natural conditions	0-2	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
133: Eastbiggs-Galt complex, 0 to 3 percent slopes	(C) Galt clay loam	Hydric	drainageways and depressions on low terraces	2B3,3	Farmable under natural conditions	40	Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and ponding depth, frequency, and duration.
	(I) Esquon clay	Hydric	drainageways and small basins on low terraces	3	Farmable under natural conditions	0-3	
	(I) Wet soils	Hydric	stream terraces	2B3	Neither wooded nor farmable under natural conditions	0-2	
136: Duric Xerarents-Eastbiggs complex, 0 to 1 percent slopes, leveled	(C) Duric Xerarents, cut	Hydric	cut areas on low terraces	3	Farmable under natural conditions	35	Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and ponding depth, frequency, and duration.
	(I) Esquon (human-transported fill overburden)	Hydric	filled drainages and sloughs on low terraces	3	Farmable under natural conditions	0-3	
139su: Liveoak-Galt taxadjuncts complex, 0 to 2 percent slopes, frequently flooded	(C) Liveoak taxadjunct loam, frequently flooded	Hydric	bars on flood plains	4	Farmable under natural conditions	45	
	(C) Galt taxadjunct clay loam, frequently flooded	Hydric	channels on flood plains	4	Farmable under natural conditions	40	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
139su (continued):	(I) Galt clay	Hydric	flood plains	3,4	Farmable under natural conditions	0-4	
	(I) Subaco clay	Hydric	flood basins	3	Farmable under natural conditions	0-3	
	(I) Clear Lake clay	Hydric	flood basins	3,4	Farmable under natural conditions	0-2	
	(I) Columbia	Hydric	flood plains	4	Farmable under natural conditions	0-2	
	(I) Soils that are less than 20 inches deep to a duripan	Hydric	flood plains	4	Farmable under natural conditions	0-2	
143su: Marcum-Gridley clay loams, 0 to 1 percent slopes	(I) Capay	Hydric	basin rims	4	Farmable under natural conditions	0-2	
	(I) Oswald	Hydric	basin rims	2B3,4	Neither wooded nor farmable under natural conditions	0-2	
	(I) Soils that are frequently ponded	Hydric	basin rims	3	Neither wooded nor farmable under natural conditions	0-1	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
150: Columbia, 0 to 2 percent slopes, frequently flooded	(C) Columbia stratified sand to fine sandy loam	Hydric	channels and sloughs on flood plains	4	Wooded under natural conditions	85	Flood-control structures have reduced natural flooding frequency and duration. Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and ponding depth, frequency, and duration.
	(I) Gianella fine sandy loam, loam and silt loam	Hydric	bars on flood plains	4	Neither wooded nor farmable under natural conditions	0-5	
	(I) Parrott silt loam	Hydric	bars on flood plains	4	Farmable under natural conditions	0-5	
	(I) Riverwash, unvegetated	Hydric	gravel bars in channels	4	Neither wooded nor farmable under natural conditions	0-5	
150su: Olashes sandy loam, 0 to 2 percent slopes	(I) Oswald	Hydric	basin rims	4,2B3	Neither wooded nor farmable under natural conditions	0-8	
	(I) Subaco	Hydric	basin rims	3	Neither wooded nor farmable under natural conditions	0-2	
152: Gianella fine sandy loam, 0 to 1 percent slopes, frequently flooded	(I) Columbia, frequently flooded	Hydric	channels on flood plains	4	Wooded under natural conditions	0-3	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
153: Gianella sandy loam, 0 to 1 percent slopes, frequently flooded	(I) Columbia, frequently flooded	Hydric	channels on flood plains	4	Wooded under natural conditions	0-5	
	(I) Riverwash	Hydric	gravel bars in channels	4	Neither wooded nor farmable under natural conditions	0-3	
154: Gianella silt loam, 0 to 1 percent slopes, frequently flooded	(I) Columbia, frequently flooded	Hydric	channels on flood plains	4	Wooded under natural conditions	0-2	
158: Gianella fine sandy loam, 0 to 1 percent slopes, occasionally flooded	(I) Columbia, frequently flooded	Hydric	channels on flood plains	4	Wooded under natural conditions	0-3	
160: Gianella loam, 0 to 1 percent slopes, occasionally flooded	(I) Columbia, frequently flooded	Hydric	channels on flood plains	4	Wooded under natural conditions	0-5	
161: Gianella fine sandy loam, 0 to 1 percent slopes, rarely flooded	(I) Columbia taxadjunct very fine sandy loam	Hydric	channels on flood plains	2B2	Wooded under natural conditions	0-3	
162: Gianella loam, 0 to 1 percent slopes, rarely flooded	(I) Columbia taxadjunct very fine sandy loam	Hydric	channels on flood plains	2B2	Wooded under natural conditions	0-5	
163yu: Holillipah loamy sand, 0 to 1 percent slopes, frequently flooded	(C) Holillipah loamy sand	Hydric	flood plains	4	Neither wooded nor farmable under natural conditions	85	
	(I) Columbia	Hydric	flood plains	2B2,4	Wooded under natural conditions	0-5	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
165yu: Holland-Hoda-Hotaw complex, 2 to 30 percent slopes	(I) Wet soils and seeps	Hydric	mountains	2B3	Neither wooded nor farmable under natural conditions	0-3	
177: Farwell silt loam, 0 to 1 percent slopes, occasionally flooded	(I) Dodgeland silty clay loam	Hydric	margins between flood basins and flood plains	3	Farmable under natural conditions	0-4	
	(I) Vermet silt loam	Hydric	channels on flood plains	4	Neither wooded nor farmable under natural conditions	0-3	
	(I) Areas with gravel and coarse sand on the surface	Hydric	channels on flood plains	4	Neither wooded nor farmable under natural conditions	0-1	
179: Moda taxadjunct-Arbuckle complex, 0 to 2 percent slopes	(C) Moda taxadjunct loam	Hydric	swales on low terraces	3	Neither wooded nor farmable under natural conditions	65	Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and ponding depth, frequency, and duration.
	(I) Dodgeland silty clay loam	Hydric	channels	3	Neither wooded nor farmable under natural conditions	0-6	
	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools on low terraces	3	Neither wooded nor farmable under natural conditions	0-4	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
180: Dodgeland silty clay loam, 0 to 5 percent slopes, occasionally flooded	(C) Dodgeland silty clay loam, occasionally flooded	Hydric	flood basins	2B3,3	Farmable under natural conditions	85	Flood-control structures have reduced natural flooding frequency and duration. Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and ponding depth, frequency, and duration.
	(I) Vermet silty clay loam	Hydric	channels on flood plains	4	Farmable under natural conditions	0-5	
	(I) Edjobe silty clay	Hydric	flood basins	3	Farmable under natural conditions	0-2	
	(I) Dodgeland silt loam or sandy clay loam, overwash	Hydric	flood basins	3	Farmable under natural conditions	0-3	
181: Dodgeland silty clay loam, 0 to 1 percent slopes, frequently flooded	(C) Dodgeland silty clay loam, frequently flooded	Hydric	channels on flood basins	2B3,3,4	Neither wooded nor farmable under natural conditions	80	Flood-control structures have reduced natural flooding frequency and duration. Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and ponding depth, frequency, and duration.
	(I) Vermet	Hydric	channels on margins of flood plains and flood basins	4	Neither wooded nor farmable under natural conditions	0-5	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
181 (continued):	(I) Edjobe	Hydric	flood basins	3,4	Farmable under natural conditions	0-3	
	(I) Areas that have been scoured by flooding	Hydric	channels on flood basins	3	Neither wooded nor farmable under natural conditions	0-2	
189: Esquon silt loam, 0 to 1 percent slopes, overwash	(C) Esquon silt loam, overwash	Hydric	flood basins	3	Farmable under natural conditions	90	Flood-control structures have reduced natural flooding frequency and duration. Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and ponding depth, frequency, and duration.
	(I) Neerdobe silt loam, overwash	Hydric	flood basins	3	Farmable under natural conditions	0-5	
	(I) Soils that are less than 40 inches deep to a duripan	Hydric	flood basins	3	---	0-3	
	(I) Soils that have overwash as much as 30 inches thick	Hydric	flood basins	3	---	0-2	
200: Parrott silt loam, 0 to 2 percent slopes, occasionally flooded	(I) Vermet silt loam	Hydric	channels on flood plains	4	Neither wooded nor farmable under natural conditions	0-3	
	(I) Soils that have stratified textures	Hydric	filled channels on flood plains	4	Farmable under natural conditions	0-1	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
201: Parrott silt loam, 0 to 2 percent slopes, frequently flooded	(C) Parrott silt loam, frequently flooded	Hydric	bars on flood plains	4	Farmable under natural conditions	85	Flood-control structures have reduced natural flooding frequency and duration. Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and ponding depth, frequency, and duration. During exceptionally wet winters, the water table may be as high as 8 to 30 inches from December through March.
	(I) Gianella fine sandy loam or loam	Hydric	bars on flood plains	4	Farmable under natural conditions	0-5	
	(I) Kusalslough silty clay loam	Hydric	margins of flood basins, alluvial fans, and flood plains	4	Farmable under natural conditions	0-5	
	(I) Soils that formed in stratified fill	Hydric	abandoned channels on flood plains	4	Farmable under natural conditions	0-3	
205: Parrott-Vermet complex, 0 to 2 percent slopes, frequently flooded	(C) Parrott silt loam, frequently flooded	Hydric	bars on flood plains	4	Wooded under natural conditions	50	Flood-control structures have reduced natural flooding frequency and duration. Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and ponding depth, frequency, and duration. During exceptionally wet winters, the water table may be as high as 8 to 30 inches from December through March.

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
205 (continued):	(C) Vermet silt loam, frequently flooded	Hydric	channels on flood plains	4	Neither wooded nor farmable under natural conditions	35	Flood-control structures have reduced natural flooding frequency and duration. Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and ponding depth, frequency, and duration. During exceptionally wet winters, the water table may be as high as 8 to 30 inches from December through March.
	(I) Columbia sand	Hydric	channels on flood plains	4	Neither wooded nor farmable under natural conditions	0-8	
	(I) Riverwash	Hydric	gravel bars in channels	4	Neither wooded nor farmable under natural conditions	0-7	
220: Esquon-Clear Lake complex, 0 to 1 percent slopes, frequently flooded	(C) Esquon clay, frequently flooded	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	60	Flood-control structures have reduced natural flooding frequency and duration. Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and ponding depth, frequency, and duration.

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
220 (continued):	(C) Clear Lake silty clay loam, overwash	Hydric	flood basins	2B3,3,4	Neither wooded nor farmable under natural conditions	30	Flood-control structures have reduced natural flooding frequency and duration. Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and ponding depth, frequency, and duration.
	(I) Clear Lake clay	Hydric	flood basins	2B3,3	Neither wooded nor farmable under natural conditions	0-5	
	(I) Esquon soils with a duripan at a depth of more than 60 inches	Hydric	flood basins	2B3,3	Neither wooded nor farmable under natural conditions	0-3	
	(I) Soils that are continuously saturated	Hydric	channels on flood basins	4	Neither wooded nor farmable under natural conditions	0-2	
221yu: Sites loam, 3 to 8 percent slopes	(I) Wet soils	Hydric	mountains	2B3	Neither wooded nor farmable under natural conditions	0-2	
222yu: Sites loam, 8 to 15 percent slopes	(I) Wet soils	Hydric	mountains	2B3	Neither wooded nor farmable under natural conditions	0-3	
248yu: Trainer loam, 0 to 1 percent slopes, occasionally flooded	(I) Columbia	Hydric	flood plains	4,2B2	Wooded under natural conditions	0-4	
	(I) Soils that have a water table within a depth of 20 inches	Hydric	channels	2B3	Neither wooded nor farmable under natural conditions	0-3	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
250: Llanoseco silty clay loam, 0 to 2 percent slopes, occasionally flooded	(I) Whitecabin	Hydric	flood basins	3	Farmable under natural conditions	0-5	
	(I) Soils in channels	Hydric	channels on flood basins	4	Farmable under natural conditions	0-2	
252: Whitecabin-Ordferry silty clays, 0 to 1 percent slopes, occasionally flooded	(C) Whitecabin silty clay, occasionally flooded	Hydric	flood basins	3	Farmable under natural conditions	60	Flood-control structures have reduced natural flooding frequency and duration. Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and ponding depth, frequency, and duration.
	(C) Ordferry silty clay, occasionally flooded	Hydric	flood basins	2B3,3	Farmable under natural conditions	25	Flood-control structures have reduced natural flooding frequency and duration. Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and ponding depth, frequency, and duration.
	(I) Clear Lake clay	Hydric	flood basins	3	Farmable under natural conditions	0-5	
	(I) Soils that are frequently flooded	Hydric	channels on flood basins	4	Neither wooded nor farmable under natural conditions	0-3	
	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools on flood basins	3	Neither wooded nor farmable under natural conditions	0-2	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
255: Whitecabin-Ordferry complex, 0 to 1 percent slopes, occasionally flooded	(C) Whitecabin silty clay loam, occasionally flooded	Hydric	flood basins	3	Farmable under natural conditions	60	Flood-control structures have reduced natural flooding frequency and duration. Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and ponding depth, frequency, and duration.
	(C) Ordferry silty clay, occasionally flooded	Hydric	flood basins	2B3,3	Farmable under natural conditions	30	Flood-control structures have reduced natural flooding frequency and duration. Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and ponding depth, frequency, and duration.
	(I) Soils that are frequently flooded	Hydric	channels on flood basins	4	Farmable under natural conditions	0-5	
	(I) Clear Lake clay	Hydric	flood basins	3	Farmable under natural conditions	0-5	
256: Whitecabin silt loam, 0 to 1 percent slopes, occasionally flooded	(C) Whitecabin silt loam, occasionally flooded	Hydric	flood basins	3	Farmable under natural conditions	85	Flood-control structures have reduced natural flooding frequency and duration. Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and ponding depth, frequency, and duration.

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
256 (continued):	(I) Soils that are frequently flooded	Hydric	channels on flood basins	4	Farmable under natural conditions	0-5	
	(I) Clear Lake clay	Hydric	flood basins	3	Farmable under natural conditions	0-5	
	(I) Ordferry clay	Hydric	flood basins	2B3,3	Farmable under natural conditions	0-5	
257: Llanoseco silty clay loam, 0 to 1 percent slopes, frequently flooded	(I) Whitecabin	Hydric	flood basins	3	Farmable under natural conditions	0-5	
	(I) Soils in channels	Hydric	channels on flood basins	4	Wooded under natural conditions	0-2	
258: Codora silty clay loam, 0 to 1 percent slopes, occasionally flooded	(I) Marvin	Hydric	flood plains	3	Farmable under natural conditions	0-5	
	(I) Columbia taxadjunct	Hydric	flood plains	2B2,4	Farmable under natural conditions	0-5	
260: Ordferry silty clay, 0 to 1 percent slopes, occasionally flooded	(C) Ordferry silty clay, occasionally flooded	Hydric	flood basins	2B3,3	Farmable under natural conditions	90	Flood-control structures have reduced natural flooding frequency and duration. Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and ponding depth, frequency, and duration.
	(I) Whitecabin	Hydric	flood basins	3	Farmable under natural conditions	0-3	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
260 (continued):							
	(I) Esquon	Hydric	flood basins	3	Farmable under natural conditions	0-2	
	(I) Esquon, overwash	Hydric	flood basins	3	Farmable under natural conditions	0-2	
	(I) Neerdobe	Hydric	flood basins	3	Farmable under natural conditions	0-1	
	(I) Soils that are 10 to 20 inches deep to a duripan	Hydric	flood basins	3	Farmable under natural conditions	0-1	
	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools on flood basins	3	Farmable under natural conditions	0-1	
280:							
Columbia taxadjunct very fine sandy loam, 0 to 1 percent slopes, frequently flooded	(C) Columbia taxadjunct stratified very fine sandy loam	Hydric	channels and oxbows on flood plains	2B2,4	Wooded under natural conditions	80	Flood-control structures have reduced natural flooding frequency and duration. Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and ponding depth, frequency, and duration.
	(I) Columbia sand	Hydric	channels and oxbows on flood plains	4	Neither wooded nor farmable under natural conditions	0-5	
	(I) Riverwash	Hydric	gravel bars in channels	4	Neither wooded nor farmable under natural conditions	0-5	
	(I) Oxbow lakes	Hydric	oxbows on flood plains	4	Neither wooded nor farmable under natural conditions	0-5	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
290: Perkins gravelly loam, 0 to 2 percent slopes	(I) Soils that are frequently flooded	Hydric	channels on low terraces	4	Neither wooded nor farmable under natural conditions	0-2	
300: Redsluff gravelly loam, 0 to 2 percent slopes	(I) Anita, gravelly duripan	Hydric	swales on low fan terraces	2B3,3	Neither wooded nor farmable under natural conditions	0-3	
301: Wafap-Hamslough complex, 0 to 2 percent slopes	(C) Hamslough clay	Hydric	channels on low stream terraces	2B3,3	Neither wooded nor farmable under natural conditions	15	
	(I) Anita, gravelly duripan	Hydric	clay swales on stream terraces	2B3,3	Neither wooded nor farmable under natural conditions	0-2	
	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools in channels on low stream terraces	3	Neither wooded nor farmable under natural conditions	0-1	
302: Redtough-Redswale complex, 0 to 2 percent slopes	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools on high fan terraces	3	Neither wooded nor farmable under natural conditions	0-3	
	(I) Redswale soils that are frequently flooded for long periods	Hydric	swales on high fan terraces	4	Neither wooded nor farmable under natural conditions	0-3	
	(I) Anita, gravelly duripan	Hydric	swales on high fan terraces	2B3,3	Neither wooded nor farmable under natural conditions	0-2	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
303: Munjar-Tuscan taxadjunct-Galt complex, 0 to 2 percent slopes	(I) Galt clay	Hydric	swales on fan terraces	2B3,3	Neither wooded nor farmable under natural conditions	0-10	
	(I) Anita clay	Hydric	swales on fan terraces	2B3,3	Neither wooded nor farmable under natural conditions	0-2	
	(I) Soils in cobble-lined channels	Hydric	channels in fan terraces	4	Neither wooded nor farmable under natural conditions	0-2	
	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools on intermediate fan terraces	3	---	0-1	
305: Redtough-Redswale-Anita, gravelly duripan, complex, 0 to 5 percent slopes	(C) Anita, gravelly duripan	Hydric	swales on strath terraces	2B3,3	Neither wooded nor farmable under natural conditions	20	Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and ponding depth, frequency, and duration.
	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools on strath terraces	3	Neither wooded nor farmable under natural conditions	0-2	
306: Duric Xerarents complex, 0 to 1 percent slopes	(C) Duric Xerarents, fill	Hydric	leveled strath terraces	3	Neither wooded nor farmable under natural conditions	50	Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and ponding depth, frequency, and duration.

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
306 (continued):	(C) Duric Xerarents, cut	Hydric	leveled strath terraces	3	Neither wooded nor farmable under natural conditions	40	Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and ponding depth, frequency, and duration.
	(I) Tuscan	Hydric	leveled strath terraces	3	Neither wooded nor farmable under natural conditions	0-3	
	(I) Fallager loam	Hydric	leveled strath terraces	3	Neither wooded nor farmable under natural conditions	0-3	
	(I) Anita	Hydric	leveled strath terraces	2B3,3	Neither wooded nor farmable under natural conditions	0-2	
	(I) Redtough	Hydric	leveled strath terraces	3	Neither wooded nor farmable under natural conditions	0-2	
307:	(C) Duric Xerarents clay loam, leveled	Hydric	leveled strath terraces	3	Neither wooded nor farmable under natural conditions	70	Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and ponding depth, frequency, and duration.
	(I) Tuscan	Hydric	leveled strath terraces	3	Neither wooded nor farmable under natural conditions	0-5	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
307 (continued):	(I) Fallager loam	Hydric	leveled strath terraces	3	Neither wooded nor farmable under natural conditions	0-5	
	(I) Anita, gravelly duripan	Hydric	leveled strath terraces	2B3,3	Neither wooded nor farmable under natural conditions	0-5	
	(I) Clearhayes	Hydric	leveled strath terraces	3	Neither wooded nor farmable under natural conditions	0-5	
	(I) Redsluff taxadjunct	Hydric	leveled strath terraces	3	Neither wooded nor farmable under natural conditions	0-5	
	(I) Soils in areas of cuts and fills	Hydric	leveled strath terraces	3	Neither wooded nor farmable under natural conditions	0-5	
310: Kimball loam, 1 to 3 percent slopes	(I) Galt clay loam	Hydric	small basins and drainageways on low terraces	3	Neither wooded nor farmable under natural conditions	0-5	
317: Thompsonflat loam, 2 to 15 percent slopes	(I) Vertisols with a duripan at a depth of 40 inches	Hydric	small basins on high terraces	3	Neither wooded nor farmable under natural conditions	0-1	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
318: Thompsonflat-Oroville complex, 0 to 9 percent slopes	(C) Oroville gravelly fine sandy loam	Hydric	swales on intermediate terraces	3	Neither wooded nor farmable under natural conditions	40	Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and ponding depth, frequency, and duration.
	(I) Loamy soils that are 10 to 20 inches deep to a duripan	Hydric	swales on intermediate terraces	3	Neither wooded nor farmable under natural conditions	0-3	
320: Vistarobles-Redding complex, 0 to 9 percent slopes	(C) Vistarobles sandy loam	Hydric	swales on intermediate terraces	3	Neither wooded nor farmable under natural conditions	50	Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and ponding depth, frequency, and duration.
	(I) Galt clay	Hydric	small basins on terraces	2B3,3	Neither wooded nor farmable under natural conditions	0-5	
	(I) Loamy soils that are 10 to 20 inches deep to a duripan	Hydric	swales on terraces	3	Neither wooded nor farmable under natural conditions	0-1	
	(I) Clayey soils that are 10 to 20 inches deep to a duripan	Hydric	small basins, swales, and vernal pools on terraces	2B3,3	Neither wooded nor farmable under natural conditions	0-1	
321: Durixeralfs-Typic Petraquepts complex, 0 to 2 percent slopes	(C) Durixeralfs, loamy-skeletal, gravelly fine sandy loam	Hydric	swales on strath terraces	3	Neither wooded nor farmable under natural conditions	20	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
321 (continued):	(C) Typic Petraquepts silty clay	Hydric	swales on strath terraces	2B3,3	Neither wooded nor farmable under natural conditions	15	
	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools on strath terraces	3	Neither wooded nor farmable under natural conditions	0-8	
	(I) Durixeralfs with 20 to 40 percent cobbles on the surface	Hydric	swales on strath terraces	3	Neither wooded nor farmable under natural conditions	0-3	
	(I) Soils in cobble-lined channels	Hydric	channels on strath terraces	3	Neither wooded nor farmable under natural conditions	0-2	
	(I) Vertisols with a duripan at a depth of 20 to 40 inches	Hydric	basins on strath terraces	3	Neither wooded nor farmable under natural conditions	0-2	
330: Wilsoncreek-Trainer loams, 0 to 2 percent slopes, occasionally flooded	(I) Galt clay loam, ponded	Hydric	small basins on low terraces	3	Neither wooded nor farmable under natural conditions	0-4	
335: Galt clay loam, 0 to 1 percent slopes	(C) Galt clay loam	Hydric	basins on low terraces	2B3,3	Farmable under natural conditions	85	Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and ponding depth, frequency, and duration.
	(I) Esquon clay	Hydric	basins on low terraces	3	Farmable under natural conditions	0-5	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
336: Galt clay, 0 to 1 percent slopes	(C) Galt clay	Hydric	basins on terraces	2B3,3	Farmable under natural conditions	90	Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and ponding depth, frequency, and duration.
	(I) Anita clay	Hydric	basins on terraces	2B3,3	Neither wooded nor farmable under natural conditions	0-3	
337: Galt clay loam, 0 to 1 percent slopes, leveled	(C) Galt clay loam	Hydric	flood basins	2B3,3	Farmable under natural conditions	85	Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and ponding depth, frequency, and duration.
	(I) Esquon clay	Hydric	flood basins	3	Farmable under natural conditions	0-5	
339: Oxyaquic Xerofluvents sandy loam, 0 to 1 percent slopes, frequently flooded	(C) Oxyaquic Xerofluvents sandy loam, frequently flooded	Hydric	flood plains	4	Neither wooded nor farmable under natural conditions	90	Hydrology has been altered by artificial drainage canal constructed to protect farmland and to carry hydraulic mine sediments from the Cherokee and Forks of Butte gold mines.
	(I) Soils less than 20 inches deep to buried basin clay	Hydric	flood plains	4	Neither wooded nor farmable under natural conditions	0-2	
	(I) Soils that are less than 40 inches deep to a duripan	Hydric	flood plains	4	Neither wooded nor farmable under natural conditions	0-2	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
339 (continued):	(I) Riverwash	Hydric	gravel bars in channels	4	Neither wooded nor farmable under natural conditions	0-2	
	(I) Typic Xerofluvents	Hydric	flood plains	4	Neither wooded nor farmable under natural conditions	0-2	
340: Rock outcrop-Thermalrocks-Campbellhills complex, 2 to 15 percent slopes	(I) Beatsonhollow	Hydric	swales on top of basalt plateaus	3	Neither wooded nor farmable under natural conditions	0-5	
341: Elsey-Beatsonhollow-Campbellhills-Rock outcrop complex, 2 to 5 percent slopes	(C) Beatsonhollow gravelly loam	Hydric	swales on top of basalt plateaus	3	Neither wooded nor farmable under natural conditions	25	
	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools on top of basalt plateaus	3	Neither wooded nor farmable under natural conditions	0-2	
342: Thermalrocks-Beatsonhollow taxadjunct-Rock outcrop complex, 2 to 30 percent slopes	(I) Beatsonhollow	Hydric	swales on top and side slopes on eroded remnants of basalt plateaus	3	Neither wooded nor farmable under natural conditions	0-4	
	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools on top of eroded remnants of basalt plateaus	3	Neither wooded nor farmable under natural conditions	0-1	
343: Coalcanyon-Coonhollow complex, 5 to 15 percent slopes	(I) Seeps	Hydric	benches and side slopes on basalt plateaus	3	Wooded under natural conditions	0-2	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
346: Cherotable-Elsey complex, 2 to 15 percent slopes	(I) Seeps	Hydric	tops of basalt plateaus	3	Neither wooded nor farmable under natural conditions	0-2	
353: Cherokeespring gravelly silt loam, 2 to 15 percent slopes	(I) Seeps	Hydric	benches on side slopes on basalt plateaus	3	Wooded under natural conditions	0-2	
362: Ultic Haploxeralfs, sandstone, low elevation, complex, 2 to 5 percent slopes	(I) Carhart	Hydric	footslopes on sedimentary hills	2B3	Neither wooded nor farmable under natural conditions	0-2	
	(I) Seeps	Hydric	footslopes on sedimentary hills	3	Neither wooded nor farmable under natural conditions	0-1	
363: Ultic Haploxeralfs, sandstone, low elevation, complex, 5 to 15 percent slopes	(I) Carhart	Hydric	side slopes on sedimentary hills	2B3	Neither wooded nor farmable under natural conditions	0-2	
	(I) Seeps	Hydric	side slopes on sedimentary hills	3	Neither wooded nor farmable under natural conditions	0-1	
364: Ultic Haploxeralfs, sandstone, low elevation, complex, 15 to 30 percent slopes	(I) Carhart	Hydric	side slopes on sedimentary hills	2B3	Neither wooded nor farmable under natural conditions	0-2	
	(I) Seeps	Hydric	side slopes on sedimentary hills	3	Neither wooded nor farmable under natural conditions	0-1	
365: Palexerults, 15 to 30 percent slopes	(I) Seeps	Hydric	footslopes and backslopes on hills	3	Neither wooded nor farmable under natural conditions	0-2	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
365 (continued):	(I) Carhart	Hydric	footslopes and backslopes on hills	2B3	Neither wooded nor farmable under natural conditions	0-2	
366: Palexerults, 30 to 50 percent slopes	(I) Seeps	Hydric	backslopes on hills	3	Neither wooded nor farmable under natural conditions	0-2	
	(I) Carhart	Hydric	backslopes on hills	2B3	Neither wooded nor farmable under natural conditions	0-2	
370: Palexerults, 2 to 15 percent slopes	(I) Seeps	Hydric	footslopes on hills	3	Neither wooded nor farmable under natural conditions	0-2	
	(I) Carhart	Hydric	footslopes on hills	2B3	Neither wooded nor farmable under natural conditions	0-2	
376: Flagcanyon-Wickscorner complex, 2 to 5 percent slopes	(I) Soils that are frequently ponded for long periods	Hydric	open depressions on table mountain fan terraces	2B2	Neither wooded nor farmable under natural conditions	0-2	
377: Flagcanyon taxadjunct-Durixeralfs-Duraquerts complex, 0 to 5 percent slopes	(C) Durixeralfs, clayey-skeletal, loam	Hydric	swales on table mountain fan terraces	3	Neither wooded nor farmable under natural conditions	20	
	(C) Duraquerts gravelly clay	Hydric	swales on table mountain fan terraces	2B3,3	Neither wooded nor farmable under natural conditions	15	
	(I) Typic Petraquepts	Hydric	swales on table mountain fan terraces	2B3,3	Neither wooded nor farmable under natural conditions	0-2	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
377 (continued):	(I) Clayey-skeletal soils with a duripan at a depth of 20 to 40 inches	Hydric	swales on table mountain fan terraces	3	Neither wooded nor farmable under natural conditions	0-2	
	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools on table mountain fan terraces	3	Neither wooded nor farmable under natural conditions	0-2	
400: Subaco taxadjunct clay, 0 to 1 percent slopes	(C) Subaco taxadjunct clay	Hydric	flood basins	3	Neither wooded nor farmable under natural conditions	85	Flood-control structures have reduced natural flooding frequency and duration. Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and ponding depth, frequency, and duration.
	(I) Neerdobe clay	Hydric	flood basins	3	Farmable under natural conditions	0-5	
	(I) Esquon clay	Hydric	flood basins	3	Farmable under natural conditions	0-3	
	(I) Soils that are 10 to 20 inches deep to a duripan	Hydric	flood basins	3	Neither wooded nor farmable under natural conditions	0-3	
	(I) Saline soils	Hydric	flood basins	3	Neither wooded nor farmable under natural conditions	0-2	
420: Conejo clay loam, 0 to 1 percent slopes	(I) Edjobe	Hydric	flood basins	3	Farmable under natural conditions	0-1	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
439: Oxyaquic Xerofluvents clay, 0 to 1 percent slopes, frequently flooded	(C) Oxyaquic Xerofluvents clay	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	85	Hydrology has been altered by artificial drainage canal constructed to protect farmland and to carry hydraulic mine sediments from the Cherokee gold mine.
	(I) Clear Lake clay, frequently flooded	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	0-3	
	(I) Oxyaquic Xerofluvents, fine-loamy	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	0-3	
	(I) Oxyaquic Xerofluvents, fine-silty	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	0-3	
	(I) Soils that have overwash less than 20 inches thick	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	0-2	
	(I) Soils that are less than 40 inches deep to a duripan	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	0-2	
	(I) Soils that are less than 40 inches deep to buried basin clay	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	0-2	
440: Oxyaquic Xerofluvents silt loam, 0 to 1 percent slopes, frequently flooded	(C) Oxyaquic Xerofluvents silt loam, frequently flooded	Hydric	flood plains within levees on flood basins; stream terraces	4	Neither wooded nor farmable under natural conditions	80	Hydrology has been altered by artificial drainage canal constructed to protect farmland and to carry hydraulic mine sediments from the Cherokee gold mine.

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
440 (continued):	(I) Clear Lake, overwash	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	0-5	
	(I) Esquon, overwash	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	0-5	
	(I) Typic Xerofluvents	Hydric	flood plains	4	Neither wooded nor farmable under natural conditions	0-4	
	(I) Riverwash	Hydric	channels	4	Neither wooded nor farmable under natural conditions	0-3	
	(I) Soils that are less than 10 inches deep to a duripan	Hydric	channels	4	Neither wooded nor farmable under natural conditions	0-3	
441:	Oxyaquic Xerofluvents very fine sandy loam, 0 to 1 percent slopes	(I) Blavo clay	Hydric	flood basins	3	Farmable under natural conditions	0-2
		(I) Esquon, overwash	Hydric	flood basins	3	Farmable under natural conditions	0-2
442:	Durixerolls-Haploxerolls clay loams, 0 to 2 percent slopes	(I) Anita clay	Hydric	small basins on fan terraces	2B3,3	Neither wooded nor farmable under natural conditions	0-2
		(I) Galt clay loam	Hydric	small basins on fan terraces	2B3,3	Farmable under natural conditions	0-2

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
443: Durixerolls-Haploxerolls loams, 0 to 2 percent slopes	(I) Galt clay loam	Hydric	small basins on fan terraces	2B3,3	Farmable under natural conditions	0-3	
500: Lofgren-Blavo complex, 0 to 1 percent slopes	(C) Lofgren clay	Hydric	flood basins	3	Farmable under natural conditions	45	Flood-control structures have reduced natural flooding frequency and duration. Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and ponding depth, frequency, and duration.
	(C) Blavo clay	Hydric	flood basins	3	Farmable under natural conditions	40	Flood-control structures have reduced natural flooding frequency and duration. Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and ponding depth, frequency, and duration.
	(I) Edjobe clay	Hydric	flood basins	3	Farmable under natural conditions	0-5	
	(I) Soils that are 10 to 20 inches deep to a duripan	Hydric	leveled terraces	3	---	0-5	
	(I) Soils that formed in fill	Hydric	filled sloughs on flood basins	3	---	0-5	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
501: Lofgren-Blavo complex, 0 to 1 percent slopes, occasionally flooded	(C) Lofgren clay, occasionally flooded	Hydric	flood basins	3	Farmable under natural conditions	45	Flood-control structures have reduced natural flooding frequency and duration. Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and ponding depth, frequency, and duration.
	(C) Blavo clay, occasionally flooded	Hydric	flood basins	3	Farmable under natural conditions	40	Flood-control structures have reduced natural flooding frequency and duration. Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and ponding depth, frequency, and duration.
	(I) Clear Lake clay	Hydric	flood basins	3	Farmable under natural conditions	0-5	
	(I) Soils that formed in fill	Hydric	filled sloughs on flood basins	3	---	0-5	
	(I) Soils that are 10 to 20 inches deep to a duripan	Hydric	leveled terraces	3	---	0-5	
502: Blavo silt loam, 0 to 1 percent slopes, overwash, occasionally flooded	(C) Blavo silt loam, overwash, occasionally flooded	Hydric	flood basins	3	Farmable under natural conditions	80	Flood-control structures have reduced natural flooding frequency and duration. Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and ponding depth, frequency, and duration.

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
502 (continued):	(I) Blavo clay, occasionally flooded	Hydric	flood basins	3	Farmable under natural conditions	0-5	
	(I) Columbia taxadjunct very fine sandy loam	Hydric	channels	2B2,4	Wooded under natural conditions	0-5	
	(I) Lofgren clay, occasionally flooded	Hydric	flood basins	3	Farmable under natural conditions	0-5	
	(I) Lofgren silt loam, overwash	Hydric	flood basins	3	Farmable under natural conditions	0-3	
	(I) Columbia sand	Hydric	channels	4	Neither wooded nor farmable under natural conditions	0-2	
519: Edjobe silty clay, 0 to 1 percent slopes	(C) Edjobe silty clay	Hydric	flood basins	3	Farmable under natural conditions	85	Flood-control structures have reduced natural flooding frequency and duration. Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and ponding depth, frequency, and duration.
	(I) Esquon silty clay	Hydric	flood basins	3	Farmable under natural conditions	0-5	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
520: Esquon-Neerdobe complex, 0 to 1 percent slopes	(C) Esquon clay	Hydric	flood basins	3	Farmable under natural conditions	60	Flood-control structures have reduced natural flooding frequency and duration. Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and ponding depth, frequency, and duration.
	(C) Neerdobe clay	Hydric	flood basins	3	Farmable under natural conditions	30	Flood-control structures have reduced natural flooding frequency and duration. Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and ponding depth, frequency, and duration.
	(I) Lofgren clay	Hydric	flood basins	3	Farmable under natural conditions	0-2	
	(I) Eastbiggs	Hydric	terraces	3	---	0-2	
	(I) Soils that formed in fill and do not have a duripan	Hydric	filled sloughs on flood basins	3	---	0-2	
	(I) Esquon loamy sand to silty clay, overwash	Hydric	flood basins	3	---	0-2	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
521: Neerdobe silt loam, 0 to 1 percent slopes, overwash	(C) Neerdobe silt loam, overwash	Hydric	flood basins	3	Farmable under natural conditions	85	Flood-control structures have reduced natural flooding frequency and duration. Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and ponding depth, frequency, and duration.
	(I) Oxyaquic Xerofluvents, loamy, overwash	Hydric	flood basins	3	Farmable under natural conditions	0-5	
	(I) Esquon clay	Hydric	flood basins	3	Farmable under natural conditions	0-5	
	(I) Neerdobe clay	Hydric	flood basins	3	Farmable under natural conditions	0-5	
522: Clearlake silty clay loam, 0 to 1 percent slopes, overwash, frequently flooded	(C) Clear Lake silty clay loam, overwash	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	80	Flood-control structures have reduced natural flooding frequency and duration. Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and ponding depth, frequency, and duration.
	(I) Oxyaquic Xerofluvents silty clay loam	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	0-5	
	(I) Soils that are more than 60 inches deep to a duripan	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	0-2	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
522 (continued):	(I) Esquon silty clay loam, overwash	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	0-3	
	(I) Wet soils	Hydric	intermittent ponds, channels, and sloughs on flood basins	3,4	Neither wooded nor farmable under natural conditions	0-3	
	(I) Saturated soils that are not subject to cracking	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	0-2	
523: Esquon silty clay loam, 0 to 1 percent slopes, overwash, frequently flooded	(C) Esquon silty clay loam, overwash	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	80	Flood-control structures have reduced natural flooding frequency and duration. Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and ponding depth, frequency, and duration.
	(I) Neerdobe silty clay loam or clay loam overwash	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	0-4	
	(I) Esquon silt loam, overwash	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	0-2	
	(I) Oxyaquic Xerofluvents	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	0-4	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
523 (continued):	(I) Soils that are more than 60 inches deep to a duripan	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	0-2	
	(I) Saturated soils that are not subject to cracking	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	0-2	
	(I) Wet soils	Hydric	intermittent ponds, channels, and sloughs on flood basins	3,4	Neither wooded nor farmable under natural conditions	0-6	
525: Govstanford loam, 0 to 1 percent slopes	(I) Edjobe silty clay	Hydric	flood basins	3	Farmable under natural conditions	0-2	
526: Govstanford loam, 0 to 1 percent slopes, occasionally flooded	(I) Oxyaquic Xerofluvents sandy loam, frequently flooded	Hydric	flood plains over flood basins	4	Wooded under natural conditions	0-3	
	(I) Edjobe silty clay	Hydric	flood basins	3	Farmable under natural conditions	0-1	
528: Neerdobe clay loam, 0 to 1 percent slopes	(C) Neerdobe clay loam	Hydric	flood basins	3	Farmable under natural conditions	90	Flood-control structures have reduced natural flooding frequency and duration. Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and ponding depth, frequency, and duration.

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
528 (continued):	(I) Soils that are frequently flooded	Hydric	irrigation ditches and channels on flood basins	4	Farmable under natural conditions	0-3	
	(I) Soils that are 10 to 20 inches deep to a duripan	Hydric	flood basins	3	Farmable under natural conditions	0-2	
590: Vistarobles-Redding-Argonaut taxadjunct-Haploxererts complex, 0 to 9 percent slopes	(C) Vistarobles sandy loam	Hydric	swales on intermediate terraces	3	Neither wooded nor farmable under natural conditions	30	
	(C) Haploxererts gravelly silty clay	Hydric	swales on intermediate terraces	2B3,3	Neither wooded nor farmable under natural conditions	15	
603: Oroville-Thermalito-Fernandez-Thompsonflat complex, 0 to 9 percent slopes	(C) Oroville gravelly fine sandy loam	Hydric	swales on intermediate terraces	3	Neither wooded nor farmable under natural conditions	30	Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and ponding depth, frequency, and duration.
	(I) Vistarobles	Hydric	swales on intermediate terraces	3	Neither wooded nor farmable under natural conditions	0-2	
	(I) Loamy soils that are 10 to 20 inches deep to a duripan	Hydric	swales on intermediate terraces	3	Neither wooded nor farmable under natural conditions	0-2	
	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools on intermediate terraces	3	Neither wooded nor farmable under natural conditions	0-2	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
603 (continued):	(I) Aquerts, fine, with a duripan at a depth of 20 to 40 inches	Hydric	vernal pools on intermediate terraces	3	Neither wooded nor farmable under natural conditions	0-1	
	(I) Clayey-skeletal soils that are shallow to a duripan	Hydric	swales on intermediate terraces	3	Neither wooded nor farmable under natural conditions	0-1	
605: Duric Xerarents-Oroville complex, 0 to 1 percent slopes, leveled	(C) Duric Xerarents fine sandy loam, leveled	Hydric	intermediate terraces	3	Neither wooded nor farmable under natural conditions	75	Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and ponding depth, frequency, and duration.
	(C) Oroville gravelly fine sandy loam	Hydric	intermediate terraces	3	Neither wooded nor farmable under natural conditions	20	Drainage and irrigation ditches have modified natural depth to water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and ponding depth, frequency, and duration.
	(I) Extremely altered soils in cut areas	Hydric	intermediate terraces	3	Neither wooded nor farmable under natural conditions	0-3	
606: Redtough-Fallager-Anita, gravelly duripan, complex, 0 to 3 percent slopes	(C) Fallager loam	Hydric	swales on fan terraces	3	Neither wooded nor farmable under natural conditions	30	
	(C) Anita, gravelly duripan	Hydric	swales on fan terraces	2B3,3	Neither wooded nor farmable under natural conditions	15	
	(I) Galt clay	Hydric	swales on fan terraces	2B3,3	Neither wooded nor farmable under natural conditions	0-2	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
606 (continued):	(I) Clayey soils less than 10 inches deep to a duripan	Hydric	swales on fan terraces	3	Neither wooded nor farmable under natural conditions	0-2	
	(I) Loamy or clayey soils	Hydric	vernal pools on fan terraces	3	Neither wooded nor farmable under natural conditions	0-2	
609: Anita, gravelly duripan-Tuscan taxadjunct complex, 0 to 2 percent slopes	(C) Anita, gravelly duripan	Hydric	clay flats and swales on fan terraces	2B3,3	Neither wooded nor farmable under natural conditions	50	
	(I) Galt	Hydric	clay flats on fan terraces	2B3,3	Neither wooded nor farmable under natural conditions	0-3	
	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools on fan terraces	3	Neither wooded nor farmable under natural conditions	0-2	
614: Doemill-Jokerst complex, 0 to 3 percent slopes	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools on ridgetops and strath terraces on volcanic ridges	3	Neither wooded nor farmable under natural conditions	0-2	
615: Doemill-Jokerst complex, 3 to 8 percent slopes	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools on ridgetops and strath terraces on volcanic ridges	3	Neither wooded nor farmable under natural conditions	0-1	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
619: Carhart taxadjunct, 0 to 2 percent slopes	(C) Carhart taxadjunct clay	Hydric	clay basins on strath terraces	2B3,3	Neither wooded nor farmable under natural conditions	90	
	(I) Carhart	Hydric	clay basins on strath terraces	2B3	Neither wooded nor farmable under natural conditions	0-5	
	(I) Anita, gravelly duripan	Hydric	clay basins on strath terraces	2B3,3	Neither wooded nor farmable under natural conditions	0-2	
	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools in clay basins on strath terraces	3	Neither wooded nor farmable under natural conditions	0-2	
622: Xerorthents, shallow-Typic Haploxeralfs-Rock outcrop, cliffs, complex, 15 to 30 percent slopes	(I) Aquic Durixeralfs	Hydric	drainages on side slopes in canyons	2B2	Wooded under natural conditions	0-2	
623: Xerorthents, shallow-Typic Haploxeralfs-Rock outcrop, cliffs, complex, 30 to 50 percent slopes	(I) Aquic Durixeralfs	Hydric	drainages on backslopes in canyons	2B2	Wooded under natural conditions	0-1	
629: Slideland gravelly loam, 3 to 15 percent slopes	(I) Seeps	Hydric	benches in canyons	4	Wooded under natural conditions	0-1	
675: Clearhayes-Hamslough complex, 0 to 2 percent slopes	(C) Hamslough clay	Hydric	channels on low strath terraces	2B3,3	Neither wooded nor farmable under natural conditions	15	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
675 (continued):	(I) Anita, gravelly duripan	Hydric	clay swales on strath terraces	2B3,3	Neither wooded nor farmable under natural conditions	0-2	
	(I) Soils that are frequently ponded for long periods	Hydric	channel on low strath terraces; vernal pools on low strath terraces	3	Neither wooded nor farmable under natural conditions	0-1	
676: Carhart-Anita taxadjunct complex, 0 to 12 percent slopes	(C) Carhart clay	Hydric	basins, toeslopes, footslopes, and head slopes on volcanic hills	2B3	Neither wooded nor farmable under natural conditions	50	
	(C) Anita taxadjunct clay	Hydric	basins, toeslopes, footslopes, and head slopes on volcanic hills	2B3,3	Neither wooded nor farmable under natural conditions	40	
	(I) Anita, gravelly duripan	Hydric	basins on strath terraces on volcanic hills	2B3,3	Neither wooded nor farmable under natural conditions	0-6	
677: Tuscan-Fallager-Anita, gravelly duripan, complex, 0 to 3 percent slopes	(C) Anita, gravelly duripan	Hydric	swales on strath terraces	2B3,3	Neither wooded nor farmable under natural conditions	15	
	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools on strath terraces	3	Neither wooded nor farmable under natural conditions	0-3	
	(I) Carhart	Hydric	clay flats on strath terraces	2B3	Neither wooded nor farmable under natural conditions	0-1	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
679: Lucksev-Butteside-Carhart complex, 2 to 15 percent slopes	(C) Carhart clay	Hydric	footslopes and head slopes on volcanic ridges, buttes, and hills	2B3	Neither wooded nor farmable under natural conditions	15	
	(I) Anita taxadjunct	Hydric	clay flats on volcanic hills	2B3,3	Neither wooded nor farmable under natural conditions	0-2	
685: Bosquejo taxadjunct clay, 0 to 2 percent slopes	(I) Hamslough	Hydric	channels on stream terraces	2B3,3	Neither wooded nor farmable under natural conditions	0-5	
	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools in channels on stream terraces	3	Neither wooded nor farmable under natural conditions	0-1	
687: Xerorthents, shallow-Typic Haploxeralfs complex, 2 to 15 percent slopes	(I) Carhart	Hydric	around seeps on footslopes in canyons	2B3	Neither wooded nor farmable under natural conditions	0-2	
	(I) Aquic Durixeralfs	Hydric	drainages on footslopes in canyons	2B2	Wooded under natural conditions	0-2	
721: Haploxerands, granitic till, 2 to 15 percent slopes	(I) Aquic Xerofluvents	Hydric	meadows in mountain valleys	2B3	Wooded under natural conditions	0-3	
722: Haploxerands, granitic till, 15 to 30 percent slopes	(I) Aquic Xerofluvents	Hydric	meadows in mountain valleys	2B3	Wooded under natural conditions	0-2	
724: Haploxerands, volcanic till, 2 to 15 percent slopes	(I) Aquic Xerofluvents	Hydric	meadows in mountain valleys	2B3	Wooded under natural conditions	0-2	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
725: Haploxerands, volcanic till, 15 to 30 percent slopes	(I) Aquic Xerofluvents	Hydric	meadows in mountain valleys	2B3	Wooded under natural conditions	0-1	
727: Bonneyridge sandy loam, 1 to 15 percent slopes	(I) Aquic Xerofluvents	Hydric	meadows in mountains	2B3	Wooded under natural conditions	0-5	
728: Bonneyridge sandy loam, 15 to 30 percent slopes	(I) Aquic Xerofluvents	Hydric	meadows in mountains	2B3	Wooded under natural conditions	0-2	
732: Bonpile taxadjunct, 2 to 8 percent slopes	(I) Endoaquolls	Hydric	meadows in mountains	2B3	Neither wooded nor farmable under natural conditions	0-2	
734: Haploxerands-Aquic Xerofluvents complex, 0 to 15 percent slopes	(C) Aquic Xerofluvents peaty very fine sandy loam	Hydric	meadows in mountain valleys	2B3	Neither wooded nor farmable under natural conditions	35	
735: Fluvaquents, loamy, 0 to 3 percent slopes	(C) Fluvaquents, loamy	Hydric	stream terraces in mountain valleys	2B3	Wooded under natural conditions	80	
	(I) Fluvaquents, gravelly	Hydric	terraces in mountain valleys	2B3	Wooded under natural conditions	0-10	
811: Powellton-Toadtown complex, 3 to 15 percent slopes	(I) Endoaquolls loam	Hydric	meadows in mountains	2B2	Neither wooded nor farmable under natural conditions	0-2	
902: Lava flows-Lumpkin complex, 0 to 15 percent slopes	(I) Springs and riparian areas	Hydric	ridgetops on basalt ridges	4	---	0-1	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
904: Lava flows-Lavatop complex, 15 to 30 percent slopes	(I) Springs and riparian areas	Hydric	side slopes on basalt ridges	4	---	0-2	
905: Lava flows-Lumpkin complex, 30 to 50 percent slopes	(I) Springs and riparian areas	Hydric	backslopes on basalt ridges	4	---	0-1	
911: Endoaquolls, 0 to 8 percent slopes	(C) Endoaquolls loam	Hydric	meadows in volcanic and metamorphic mountains	2B2	Neither wooded nor farmable under natural conditions	75	
	(I) Endoaquolls that are frequently flooded for long periods	Hydric	seeps and channels in meadows in volcanic and metamorphic mountains	2B2,4	Neither wooded nor farmable under natural conditions	0-12	
	(I) Endoaquolls, very gravelly substratum	Hydric	meadows in volcanic and metamorphic mountains	2B2	Neither wooded nor farmable under natural conditions	0-3	
	(I) Aquic Xerofluvents	Hydric	meadows in volcanic and metamorphic mountains	2B3	Wooded under natural conditions	0-3	
	(I) Xerofluvents	Hydric	channels in meadows in volcanic and metamorphic mountains	4	---	0-2	
931: Shakeridge-Mudwash-Timberisland complex, 15 to 30 percent slopes	(I) Springs and riparian areas	Hydric	side slopes on basalt ridges	4	Wooded under natural conditions	0-2	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altered hydrology notes
934: Mudwash gravelly medial sandy loam, 0 to 15 percent slopes	(I) Springs and riparian areas	Hydric	ridgetops on basalt ridges	4	Wooded under natural conditions	0-4	
939: Fluvaquentic Humaquepts, 0 to 15 percent slopes	(C) Fluvaquentic Humaquepts very fine sandy loam	Hydric	meadows in granitic mountains	2B3	Wooded under natural conditions	85	
	(I) At an elevation of more than 4,800 feet, soils with a frigid soil temperature regime	Hydric	meadows in metamorphic mountains	2B3	Wooded under natural conditions	0-10	
990: Riverwash, 0 to 2 percent slopes, frequently flooded	(C) Riverwash, frequently flooded	Hydric	gravel bars in river channels	4	Neither wooded nor farmable under natural conditions	100	Flood-control structures have altered natural flooding frequency, duration, and timing.
991: Xerofluvents, 0 to 4 percent slopes, frequently flooded	(I) Xerofluvents that are frequently flooded for long periods	Hydric	channels on flood plains	4	Neither wooded nor farmable under natural conditions	0-13	

Table 10.--Site Index and Annual Productivity

(Only the soils for which site index productivity information is available are listed. RV means representative value, or the value that occurs most commonly)

Map symbol and soil name	Potential productivity			Trees to manage	
	Common trees	Site index base	Site index (low-RV-high)		Annual production* (low-RV-high)
165yu:					
Holland loam-----	Douglas-fir-----	790	__-112-__	__-101-__	Douglas-fir, white fir, incense cedar, California black oak, tanoak, ponderosa pine, sugar pine
	Ponderosa pine-----	600	__-105-__	__-112-__	
Hoda loam-----	Douglas-fir-----	790	__-140-__	__-145-__	Douglas-fir, white fir, incense cedar, California black oak, tanoak, ponderosa pine, sugar pine
	Ponderosa pine-----	600	__-141-__	__-190-__	
Hotaw loam-----	Douglas-fir-----	790	__-130-__	__-129-__	Douglas-fir, white fir, ponderosa pine, sugar pine, California black oak, tanoak, incense cedar
	Ponderosa pine-----	600	__-102-__	__-106-__	
173yu:					
Hotaw loam-----	Ponderosa pine-----	600	__-102-__	__-106-__	California black oak, ponderosa pine
Chawanakee gravelly sandy loam-----	Ponderosa pine-----	600	__-81-__	__-70-__	California black oak, ponderosa pine
Holland loam-----	Ponderosa pine-----	600	__-110-__	__-122-__	Ponderosa pine, California black oak, incense cedar, tanoak
176yu:					
Jocal loam-----	Douglas-fir-----	790	__-147-__	__-154-__	Douglas-fir, white fir, incense cedar, California black oak, tanoak, ponderosa pine, sugar pine
	Ponderosa pine-----	600	__-145-__	__-199-__	
	White fir-----	30	__-97-__	__-217-__	

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Annual production* (low-RV-high)	Trees to manage
	Common trees	Site index base	Site index (low-RV-high)		
188yu: Mariposa taxadjunct gravelly loam-----	Douglas-fir-----	790	___-110-__	___-98-__	Douglas-fir, white fir, ponderosa pine, sugar pine, California black oak, tanoak, incense cedar
	Ponderosa pine-----	600	___-105-__	___-112-__	
189yu: Mariposa taxadjunct gravelly loam-----	Douglas-fir-----	790	___-110-__	___-98-__	Douglas-fir, white fir, ponderosa pine, sugar pine, California black oak, tanoak, incense cedar
	Ponderosa pine-----	600	___-105-__	___-112-__	
206: Islandbar sandy loam----	Ponderosa pine-----	600	111-112-113	124-126-128	Ponderosa pine, incense cedar, Douglas-fir, California black oak
	Ponderosa pine-----	605	175-175-175		
Chawanakee gravelly sandy loam-----	Ponderosa pine-----	600	80-90-107	69-85-116	Ponderosa pine, Douglas-fir, sugar pine, incense cedar, California black oak
	Ponderosa pine-----	605	135-147-170		
207: Islandbar sandy loam----	Ponderosa pine-----	600	111-112-113	124-126-128	Ponderosa pine, incense cedar, Douglas-fir, California black oak
	Ponderosa pine-----	605	175-175-175		
Chawanakee gravelly sandy loam-----	Ponderosa pine-----	600	80-90-107	69-85-116	Ponderosa pine, Douglas-fir, sugar pine, incense cedar, California black oak
	Ponderosa pine-----	605	135-147-170		
208: Islandbar sandy loam----	Ponderosa pine-----	600	111-112-113	124-126-128	Ponderosa pine, incense cedar, Douglas-fir, California black oak
	Ponderosa pine-----	605	175-175-175		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage	
	Common trees	Site index base	Site index (low-RV-high)		Annual production* (low-RV-high)
208: Chawanakee gravelly sandy loam-----	Ponderosa pine-----	600	80-90-107	69-85-116	Ponderosa pine, Douglas-fir, sugar pine, incense cedar, California black oak
	Ponderosa pine-----	605	135-147-170		
209: Islandbar sandy loam---	Ponderosa pine-----	600	111-112-113	124-126-128	Ponderosa pine, incense cedar, Douglas-fir, California black oak
	Ponderosa pine-----	605	175-175-175		
Chawanakee gravelly sandy loam-----	Ponderosa pine-----	600	80-90-107	69-85-116	Ponderosa pine, Douglas-fir, sugar pine, incense cedar, California black oak
	Ponderosa pine-----	605	135-147-170		
210: Featherfalls sandy loam	Ponderosa pine-----	600	116-123-129	134-149-164	Ponderosa pine, Douglas-fir, incense cedar, California black oak
	Douglas-fir-----	790	122-125-128	118-122-127	
	Ponderosa pine-----	605	182-192-200		
	Douglas-fir-----	605	194-194-194		
Islandbar sandy loam---	Ponderosa pine-----	600	126-131-137	156-168-181	Ponderosa pine, Douglas-fir, incense cedar, California black oak
	Douglas-fir-----	790	72-72-72	58-58-58	
	Ponderosa pine-----	605	195-197-200		
	Douglas-fir-----	605	155-155-155		
211: Featherfalls sandy loam	Ponderosa pine-----	600	116-123-129	134-149-164	Ponderosa pine, Douglas-fir, incense cedar, California black oak
	Douglas-fir-----	790	122-125-128	118-122-127	
	Ponderosa pine-----	605	182-192-200		
	Douglas-fir-----	605	194-194-194		
Islandbar sandy loam---	Ponderosa pine-----	600	126-131-137	156-168-181	Ponderosa pine, Douglas-fir, incense cedar, California black oak
	Douglas-fir-----	790	72-72-72	58-58-58	
	Ponderosa pine-----	605	195-197-200		
	Douglas-fir-----	605	155-155-155		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage	
	Common trees	Site index base	Site index (low-RV-high)		Annual production* (low-RV-high)
212:					
Featherfalls sandy loam	Ponderosa pine-----	600	116-123-129	134-149-164	Ponderosa pine, Douglas-fir, incense cedar, California black oak
	Douglas-fir-----	790	122-125-128	118-122-127	
	Ponderosa pine-----	605	182-192-200		
	Douglas-fir-----	605	194-194-194		
Islandbar sandy loam----	Ponderosa pine-----	600	126-131-137	156-168-181	Ponderosa pine, Douglas-fir, incense cedar, California black oak
	Douglas-fir-----	790	72-72-72	58-58-58	
	Ponderosa pine-----	605	195-197-200		
	Douglas-fir-----	605	155-155-155		
213:					
Featherfalls sandy loam	Ponderosa pine-----	600	116-123-129	134-149-164	Ponderosa pine, Douglas-fir, incense cedar, California black oak
	Douglas-fir-----	790	122-125-128	118-122-127	
	Ponderosa pine-----	605	182-192-200		
	Douglas-fir-----	605	194-194-194		
Islandbar sandy loam----	Ponderosa pine-----	600	126-131-137	156-168-181	Ponderosa pine, Douglas-fir, incense cedar, California black oak
	Douglas-fir-----	790	72-72-72	58-58-58	
	Ponderosa pine-----	605	195-197-200		
	Douglas-fir-----	605	155-155-155		
214:					
Crystalhill gravelly coarse sandy loam-----	Ponderosa pine-----	600	110-114-118	122-130-137	Ponderosa pine, incense cedar, California black oak
	Ponderosa pine-----	605	172-176-180		
Oregongulch gravelly sandy loam-----	Ponderosa pine-----	600	115-125-131	132-154-168	Ponderosa pine, incense cedar, California black oak
	Ponderosa pine-----	605	181-194-200		
Craigsaddle coarse sandy loam-----	Ponderosa pine-----	600	110-117-122	122-136-146	Ponderosa pine, incense cedar, California black oak
	Ponderosa pine-----	605	171-180-188		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage	
	Common trees	Site index base	Site index (low-RV-high)		
215:					
Crystalhill gravelly coarse sandy loam-----	Ponderosa pine-----	600	110-114-118	122-130-137	Ponderosa pine, incense cedar, California black oak
	Ponderosa pine-----	605	172-176-180		
Oregongulch gravelly sandy loam-----	Ponderosa pine-----	600	115-125-131	132-154-168	Ponderosa pine, incense cedar, California black oak
	Ponderosa pine-----	605	181-194-200		
Craigsaddle coarse sandy loam-----	Ponderosa pine-----	600	110-117-122	122-136-146	Ponderosa pine, incense cedar, California black oak
	Ponderosa pine-----	605	171-180-188		
216:					
Crystalhill gravelly coarse sandy loam-----	Ponderosa pine-----	600	110-114-118	122-130-137	Ponderosa pine, incense cedar, California black oak
	Ponderosa pine-----	605	172-176-180		
Oregongulch gravelly sandy loam-----	Ponderosa pine-----	600	115-125-131	132-154-168	Ponderosa pine, incense cedar, California black oak
	Ponderosa pine-----	605	181-194-200		
Craigsaddle coarse sandy loam-----	Ponderosa pine-----	600	110-117-122	122-136-146	Ponderosa pine, incense cedar, California black oak
	Ponderosa pine-----	605	171-180-188		
217:					
Crystalhill gravelly coarse sandy loam-----	Ponderosa pine-----	600	110-114-118	122-130-137	Ponderosa pine, incense cedar, California black oak
	Ponderosa pine-----	605	172-176-180		
Oregongulch gravelly sandy loam-----	Ponderosa pine-----	600	115-125-131	132-154-168	Ponderosa pine, incense cedar, California black oak
	Ponderosa pine-----	605	181-194-200		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage	
	Common trees	Site index base	Site index (low-RV-high)		Annual production* (low-RV-high)
217: Craigsaddle coarse sandy loam-----	Ponderosa pine-----	600	110-117-122	122-136-146	Ponderosa pine, incense cedar, California black oak
	Ponderosa pine-----	605	171-180-188		
218: Chawanakee gravelly sandy loam-----	Ponderosa pine-----	600	80-90-107	69-85-116	Ponderosa pine, Douglas-fir, sugar pine, incense cedar, California black oak
	Ponderosa pine-----	605	135-147-170		
219: Chawanakee gravelly sandy loam-----	Ponderosa pine-----	600	80-90-107	69-85-116	Ponderosa pine, Douglas-fir, sugar pine, incense cedar, California black oak
	Ponderosa pine-----	605	135-147-170		
221yu: Sites loam-----	Douglas-fir-----	790	-140-	-145-	Douglas-fir, white fir, incense cedar, California black oak, tanoak, ponderosa pine, sugar pine
	Ponderosa pine-----	600	-160-	-234-	
	White fir-----	30	-98-	-217-	
222yu: Sites loam-----	Douglas-fir-----	790	-140-	-145-	Douglas-fir, white fir, incense cedar, California black oak, tanoak, ponderosa pine, sugar pine
	Ponderosa pine-----	600	-160-	-234-	
	White fir-----	30	-98-	-217-	
225yu: Sites gravelly loam, bedrock substratum-----	Douglas-fir-----	790	-140-	-145-	Douglas-fir, white fir, incense cedar, California black oak, tanoak, ponderosa pine, sugar pine
	Ponderosa pine-----	600	-145-	-199-	

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage	
	Common trees	Site index base	Site index (low-RV-high)		Annual production* (low-RV-high)
226yu: Sites gravelly loam, bedrock substratum-----	Douglas-fir-----	790	__-140-__	__-145-__	Douglas-fir, white fir, incense cedar, California black oak, tanoak, ponderosa pine, sugar pine
	Ponderosa pine-----	600	__-145-__	__-199-__	
227yu: Sites gravelly loam, bedrock substratum-----	Douglas-fir-----	790	__-140-__	__-145-__	Douglas-fir, white fir, incense cedar, California black oak, tanoak, ponderosa pine, sugar pine
	Ponderosa pine-----	600	__-145-__	__-199-__	
242yu: Surnuf loam-----	Ponderosa pine-----	600	__-118-__	__-137-__	Ponderosa pine, California black oak, incense cedar, Pacific madrone, interior live oak, tanoak
243yu: Surnuf loam-----	Ponderosa pine-----	600	__-118-__	__-137-__	Ponderosa pine, California black oak, incense cedar, Pacific madrone, interior live oak, tanoak
244yu: Surnuf loam-----	Ponderosa pine-----	600	__-118-__	__-137-__	Ponderosa pine, California black oak, incense cedar, Pacific madrone, interior live oak, tanoak
245: Surnuf loam-----	Ponderosa pine-----	600	__-118-__	__-137-__	Ponderosa pine, California black oak, incense cedar, Pacific madrone, interior live oak, tanoak
252yu: Woodleaf gravelly loam--	Ponderosa pine-----	600	__-79-__	__-67-__	Ponderosa pine, incense cedar, Douglas-fir

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage	
	Common trees	Site index base	Site index (low-RV-high)		Annual production* (low-RV-high)
253yu: Woodleaf gravelly loam--	Ponderosa pine-----	600	__-79-__	__-67-__	Ponderosa pine, incense cedar, Douglas-fir
561: Bigridge loam-----	Ponderosa pine-----	600	123-126-130	149-156-166	Ponderosa pine, Douglas-fir, California black oak
	Ponderosa pine-----	605	189-194-200		
562: Bigridge loam-----	Ponderosa pine-----	600	123-126-130	149-156-166	Ponderosa pine, Douglas-fir, California black oak
	Ponderosa pine-----	605	189-194-200		
563: Bigridge loam-----	Ponderosa pine-----	600	123-126-130	149-156-166	Ponderosa pine, Douglas-fir, California black oak
	Ponderosa pine-----	605	189-194-200		
564: Bigridge loam-----	Ponderosa pine-----	600	123-126-130	149-156-166	Ponderosa pine, Douglas-fir, California black oak
	Ponderosa pine-----	605	189-194-200		
580: Surnuf taxadjunct loam--	Ponderosa pine-----	600	135-138-140	177-183-188	Ponderosa pine, Douglas-fir, California black oak
	Ponderosa pine-----	605	200-200-200		
Griffgulch very gravelly silt loam-----	Ponderosa pine-----	600	111-118-123	124-137-149	Ponderosa pine, Douglas-fir, sugar pine, California black oak
	Douglas-fir-----	790	90-107-125	70-94-122	
	Ponderosa pine-----	605	175-183-187		
	Douglas-fir-----	605	155-177-200		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Annual production* (low-RV-high)	Trees to manage
	Common trees	Site index base	Site index (low-RV-high)		
581: Surnuf taxadjunct loam--	Ponderosa pine-----	600	135-138-140	177-183-188	Ponderosa pine, Douglas-fir, California black oak
	Ponderosa pine-----	605	200-200-200		
Griffgulch very gravelly silt loam----	Ponderosa pine-----	600	111-118-123	124-137-149 70-94-122	Ponderosa pine, Douglas-fir, sugar pine, California black oak
	Douglas-fir-----	790	90-107-125		
	Ponderosa pine-----	605	175-183-187		
	Douglas-fir-----	605	155-177-200		
582: Surnuf taxadjunct loam--	Ponderosa pine-----	600	135-138-140	177-183-188	Ponderosa pine, Douglas-fir, California black oak
	Ponderosa pine-----	605	200-200-200		
Griffgulch very gravelly silt loam----	Ponderosa pine-----	600	111-118-123	124-137-149 70-94-122	Ponderosa pine, Douglas-fir, sugar pine, California black oak
	Douglas-fir-----	790	90-107-125		
	Ponderosa pine-----	605	175-183-187		
	Douglas-fir-----	605	155-177-200		
583: Surnuf taxadjunct loam--	Ponderosa pine-----	600	135-138-140	177-183-188	Ponderosa pine, Douglas-fir, California black oak
	Ponderosa pine-----	605	200-200-200		
Griffgulch very gravelly silt loam----	Ponderosa pine-----	600	111-118-123	124-137-149 70-94-122	Ponderosa pine, Douglas-fir, sugar pine, California black oak
	Douglas-fir-----	790	90-107-125		
	Ponderosa pine-----	605	175-183-187		
	Douglas-fir-----	605	155-177-200		
629: Slideland gravelly loam	Ponderosa pine-----	600	145-145-145	199-199-199	Ponderosa pine, incense cedar, California black oak
	Ponderosa pine-----	605	200-200-200		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Annual production* (low-RV-high)	Trees to manage
	Common trees	Site index base	Site index (low-RV-high)		
630: Slideland gravelly loam	Ponderosa pine-----	600	145-145-145	199-199-199	Ponderosa pine, incense cedar, California black oak
	Ponderosa pine-----	605	200-200-200		
631: Slideland gravelly loam	Ponderosa pine-----	600	145-145-145	199-199-199	Ponderosa pine, incense cedar, California black oak
	Ponderosa pine-----	605	200-200-200		
650: Schott very gravelly loam-----	Ponderosa pine-----	600	90-95-100	85-94-102	Ponderosa pine, Douglas-fir, incense cedar, California black oak
	Ponderosa pine-----	605	150-155-161		
651: Schott very gravelly loam-----	Ponderosa pine-----	600	90-95-100	85-94-102	Ponderosa pine, Douglas-fir, incense cedar, California black oak
	Ponderosa pine-----	605	150-155-161		
652: Schott very gravelly loam-----	Ponderosa pine-----	600	90-95-100	85-94-102	Ponderosa pine, Douglas-fir, incense cedar, California black oak
	Ponderosa pine-----	605	150-155-161		
657: Bonneyridge sandy loam--	Ponderosa pine-----	600	119-131-143	139-168-194 103-127-145 149-170-204	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	113-128-140		
	White fir-----	30	66-72-84		
	Ponderosa pine-----	605	186-196-200		
	Douglas-fir-----	605	174-193-200		
	White fir-----	605	175-184-200		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage	
	Common trees	Site index base	Site index (low-RV-high)		
657: Chawanakee gravelly sandy loam-----	Ponderosa pine-----	600	73-79-84	59-67-75	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	White fir-----	30	54-54-54	106-106-106	
	Ponderosa pine-----	605	120-129-137		
	White fir-----	605	150-150-150		
658: Bonneyridge sandy loam--	Ponderosa pine-----	600	119-131-143	139-168-194	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	113-128-140	103-127-145	
	White fir-----	30	66-72-84	149-170-204	
	Ponderosa pine-----	605	186-196-200		
	Douglas-fir-----	605	174-193-200		
	White fir-----	605	175-184-200		
Chawanakee gravelly sandy loam-----	Ponderosa pine-----	600	73-79-84	59-67-75	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	White fir-----	30	54-54-54	106-106-106	
	Ponderosa pine-----	605	120-129-137		
	White fir-----	605	150-150-150		
659: Bonneyridge sandy loam--	Ponderosa pine-----	600	119-131-143	139-168-194	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	113-128-140	103-127-145	
	White fir-----	30	66-72-84	149-170-204	
	Ponderosa pine-----	605	186-196-200		
	Douglas-fir-----	605	174-193-200		
	White fir-----	605	175-184-200		
Chawanakee gravelly sandy loam-----	Ponderosa pine-----	600	73-79-84	59-67-75	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	White fir-----	30	54-54-54	106-106-106	
	Ponderosa pine-----	605	120-129-137		
	White fir-----	605	150-150-150		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Annual production* (low-RV-high)	Trees to manage
	Common trees	Site index base	Site index (low-RV-high)		
660:					
Bonneyridge sandy loam--	Ponderosa pine-----	600	119-131-143	139-168-194	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	113-128-140	103-127-145	
	White fir-----	30	66-72-84	149-170-204	
	Ponderosa pine-----	605	186-196-200		
	Douglas-fir-----	605	174-193-200		
	White fir-----	605	175-184-200		
Chawanakee gravelly sandy loam-----	Ponderosa pine-----	600	73-79-84	59-67-75	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	White fir-----	30	54-54-54	106-106-106	
	Ponderosa pine-----	605	120-129-137		
	White fir-----	605	150-150-150		
665:					
Surnuf gravelly loam---	Ponderosa pine-----	600	119-121-125	139-144-154	Ponderosa pine, Douglas-fir, California black oak
	Douglas-fir-----	790	87-103-119	67-88-113	
	Ponderosa pine-----	605	178-187-198		
	Douglas-fir-----	605	142-166-191		
Bigridge loam-----	Ponderosa pine-----	600	123-126-130	149-156-166	Ponderosa pine, Douglas-fir, California black oak
	Ponderosa pine-----	605	189-194-200		
666:					
Surnuf gravelly loam---	Ponderosa pine-----	600	119-121-125	139-144-154	Ponderosa pine, Douglas-fir, California black oak
	Douglas-fir-----	790	87-103-119	67-88-113	
	Ponderosa pine-----	605	178-187-198		
	Douglas-fir-----	605	142-166-191		
Bigridge loam-----	Ponderosa pine-----	600	123-126-130	149-156-166	Ponderosa pine, Douglas-fir, California black oak
	Ponderosa pine-----	605	189-194-200		
667:					
Surnuf gravelly loam---	Ponderosa pine-----	600	119-121-125	139-144-154	Ponderosa pine, Douglas-fir, California black oak
	Douglas-fir-----	790	87-103-119	67-88-113	
	Ponderosa pine-----	605	178-187-198		
	Douglas-fir-----	605	142-166-191		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage	
	Common trees	Site index base	Site index (low-RV-high)		Annual production* (low-RV-high)
667: Bigridge loam-----	Ponderosa pine-----	600	123-126-130	149-156-166	Ponderosa pine, Douglas-fir, California black oak
	Ponderosa pine-----	605	189-194-200		
668: Surnuf gravelly loam---	Ponderosa pine-----	600	119-121-125	139-144-154	Ponderosa pine, Douglas-fir, California black oak
	Douglas-fir-----	790	87-103-119	67-88-113	
	Ponderosa pine-----	605	178-187-198		
	Douglas-fir-----	605	142-166-191		
Bigridge loam-----	Ponderosa pine-----	600	123-126-130	149-156-166	Ponderosa pine, Douglas-fir, California black oak
	Ponderosa pine-----	605	189-194-200		
674: Chawanakee gravelly sandy loam-----	Ponderosa pine-----	600	73-79-84	59-67-75	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	White fir-----	30	54-54-54	106-106-106	
	Ponderosa pine-----	605	120-129-137		
	White fir-----	605	150-150-150		
Bonneyridge sandy loam--	Ponderosa pine-----	600	119-131-143	139-168-194	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	113-128-140	103-127-145	
	White fir-----	30	66-72-84	149-170-204	
	Ponderosa pine-----	605	186-196-200		
	Douglas-fir-----	605	174-193-200		
	White fir-----	605	175-184-200		
700: Flumewall gravelly sandy loam-----	Douglas-fir-----	790	110-110-110	98-98-98	Douglas-fir, ponderosa pine, incense cedar, California black oak
	Ponderosa pine-----	600	83-98-113	74-99-128	
	Douglas-fir-----	605	169-176-184		
	Ponderosa pine-----	605	138-156-175		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Annual production* (low-RV-high)	Trees to manage
	Common trees	Site index base	Site index (low-RV-high)		
701:					
Powellton gravelly loam	Ponderosa pine-----	600	140-147-154	188-203-220	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar
	Douglas-fir-----	790	120-129-138	115-128-142	
	White fir-----	30	91-91-91	217-217-217	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	190-195-200		
	White fir-----	605	200-200-200		
Obstruction gravelly sandy loam-----					
	Ponderosa pine-----	600	121-131-144	144-168-197	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	134-137-142	136-140-148	
	White fir-----	30	72-86-95	170-209-217	
	Ponderosa pine-----	605	185-191-200		
	Douglas-fir-----	605	200-200-200		
	White fir-----	605	188-197-200		
702:					
Cerpone gravelly loam---	Jeffrey pine-----	600	63-69-75	49-54-62	Jeffrey pine, ponderosa pine, Douglas-fir, incense cedar
	Ponderosa pine-----	600	63-69-75	49-54-62	
	Douglas-fir-----	790	84-84-84	63-63-63	
	Jeffrey pine-----	605	101-113-125		
	Ponderosa pine-----	605	101-113-125		
	Douglas-fir-----	605	130-130-130		
703:					
Cerpone gravelly loam---	Jeffrey pine-----	600	63-69-75	49-54-62	Jeffrey pine, ponderosa pine, Douglas-fir, incense cedar
	Ponderosa pine-----	600	63-69-75	49-54-62	
	Douglas-fir-----	790	84-84-84	63-63-63	
	Jeffrey pine-----	605	101-113-125		
	Ponderosa pine-----	605	101-113-125		
	Douglas-fir-----	605	130-130-130		
704:					
Cerpone gravelly loam---	Jeffrey pine-----	600	63-69-75	49-54-62	Jeffrey pine, ponderosa pine, Douglas-fir, incense cedar
	Ponderosa pine-----	600	63-69-75	49-54-62	
	Douglas-fir-----	790	84-84-84	63-63-63	
	Jeffrey pine-----	605	101-113-125		
	Ponderosa pine-----	605	101-113-125		
	Douglas-fir-----	605	130-130-130		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage	
	Common trees	Site index base	Site index (low-RV-high)		Annual production* (low-RV-high)
705:					
Cerpone gravelly loam---	Jeffrey pine-----	600	63-69-75	49-54-62	Jeffrey pine, ponderosa pine, Douglas-fir, incense cedar
	Ponderosa pine-----	600	63-69-75	49-54-62	
	Douglas-fir-----	790	84-84-84	63-63-63	
	Jeffrey pine-----	605	101-113-125		
	Ponderosa pine-----	605	101-113-125		
	Douglas-fir-----	605	130-130-130		
711:					
Dixmine very gravelly loam-----	Douglas-fir-----	790	120-126-134	115-124-136	Douglas-fir, ponderosa pine, sugar pine, white fir, incense cedar, California black oak
	White fir-----	30	85-85-85	206-206-206	
	Ponderosa pine-----	600	114-131-148	130-168-205	
	Douglas-fir-----	605	180-193-200		
	White fir-----	605	200-200-200		
	Ponderosa pine-----	605	175-187-200		
Toadtown loam-----	Ponderosa pine-----	600	140-146-148	188-201-205	Ponderosa pine, sugar pine, Douglas-fir, tanoak, white fir, incense cedar
	Douglas-fir-----	790	130-130-130	129-129-129	
	White fir-----	30	65-65-65	145-145-145	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	200-200-200		
	White fir-----	605	170-170-170		
712:					
Dixmine very gravelly loam-----	Douglas-fir-----	790	120-126-134	115-124-136	Douglas-fir, ponderosa pine, sugar pine, white fir, incense cedar, California black oak
	White fir-----	30	85-85-85	206-206-206	
	Ponderosa pine-----	600	114-131-148	130-168-205	
	Douglas-fir-----	605	180-193-200		
	White fir-----	605	200-200-200		
	Ponderosa pine-----	605	175-187-200		
Toadtown loam-----	Ponderosa pine-----	600	140-146-148	188-201-205	Ponderosa pine, sugar pine, Douglas-fir, tanoak, white fir, incense cedar
	Douglas-fir-----	790	130-130-130	129-129-129	
	White fir-----	30	65-65-65	145-145-145	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	200-200-200		
	White fir-----	605	170-170-170		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Annual production* (low-RV-high)	Trees to manage
	Common trees	Site index base	Site index (low-RV-high)		
713: Dixmine very gravelly loam-----	Douglas-fir-----	790	120-126-134	115-124-136	Douglas-fir, ponderosa pine, sugar pine, white fir, incense cedar, California black oak
	White fir-----	30	85-85-85	206-206-206	
	Ponderosa pine-----	600	114-131-148	130-168-205	
	Douglas-fir-----	605	180-193-200		
	White fir-----	605	200-200-200		
	Ponderosa pine-----	605	175-187-200		
Toadtown loam-----	Ponderosa pine-----	600	140-146-148	188-201-205	Ponderosa pine, sugar pine, Douglas-fir, tanoak, white fir, incense cedar
	Douglas-fir-----	790	130-130-130	129-129-129	
	White fir-----	30	65-65-65	145-145-145	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	200-200-200		
	White fir-----	605	170-170-170		
714: Dixmine very gravelly loam-----	Douglas-fir-----	790	120-126-134	115-124-136	Douglas-fir, ponderosa pine, sugar pine, white fir, incense cedar, California black oak
	White fir-----	30	85-85-85	206-206-206	
	Ponderosa pine-----	600	114-131-148	130-168-205	
	Douglas-fir-----	605	180-193-200		
	White fir-----	605	200-200-200		
	Ponderosa pine-----	605	175-187-200		
Toadtown loam-----	Ponderosa pine-----	600	140-146-148	188-201-205	Ponderosa pine, sugar pine, Douglas-fir, tanoak, white fir, incense cedar
	Douglas-fir-----	790	130-130-130	129-129-129	
	White fir-----	30	65-65-65	145-145-145	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	200-200-200		
	White fir-----	605	170-170-170		
715: Logtrain gravelly loam--	Ponderosa pine-----	600	115-123-128	132-149-161	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	90-98-106	70-81-92	
	White fir-----	30	70-70-70	163-163-163	
	Ponderosa pine-----	605	180-193-200		
	Douglas-fir-----	605	155-162-169		
	White fir-----	605	170-170-170		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage	
	Common trees	Site index base	Site index (low-RV-high)		Annual production* (low-RV-high)
715: Bottlehill very gravelly loam-----	Ponderosa pine-----	600	85-93-108	77-90-118	Ponderosa pine, Douglas-fir, sugar pine, white fir, California black oak
	Douglas-fir-----	790	80-95-111	58-77-100	
	White fir-----	30	51-58-66	95-121-149	
	Ponderosa pine-----	605	135-146-165		
	Douglas-fir-----	605	135-157-180		
	White fir-----	605	140-155-170		
Walkermine very gravelly loam-----	Ponderosa pine-----	600	75-75-75	62-62-62	Douglas-fir, ponderosa pine, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	90-90-90	70-70-70	
	White fir-----	30	55-55-55	109-109-109	
	Ponderosa pine-----	605	125-125-125		
	Douglas-fir-----	605	155-155-155		
	White fir-----	605	150-150-150		
716: Griffgulch very gravelly silt loam----	Ponderosa pine-----	600	111-118-123	124-137-149	Ponderosa pine, Douglas-fir, sugar pine, California black oak
	Douglas-fir-----	790	90-107-125	70-94-122	
	Ponderosa pine-----	605	175-183-187		
	Douglas-fir-----	605	155-177-200		
Surnuf gravelly loam----	Ponderosa pine-----	600	119-121-125	139-144-154	Ponderosa pine, Douglas-fir, California black oak
	Douglas-fir-----	790	87-103-119	67-88-113	
	Ponderosa pine-----	605	178-187-198		
	Douglas-fir-----	605	142-166-191		
717: Griffgulch very gravelly silt loam----	Ponderosa pine-----	600	111-118-123	124-137-149	Ponderosa pine, Douglas-fir, sugar pine, California black oak
	Douglas-fir-----	790	90-107-125	70-94-122	
	Ponderosa pine-----	605	175-183-187		
	Douglas-fir-----	605	155-177-200		
Surnuf gravelly loam----	Ponderosa pine-----	600	119-121-125	139-144-154	Ponderosa pine, Douglas-fir, California black oak
	Douglas-fir-----	790	87-103-119	67-88-113	
	Ponderosa pine-----	605	178-187-198		
	Douglas-fir-----	605	142-166-191		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage	
	Common trees	Site index base	Site index (low-RV-high)		Annual production* (low-RV-high)
718:					
Griffgulch very gravelly silt loam----	Ponderosa pine-----	600	111-118-123	124-137-149	Ponderosa pine, Douglas-fir, sugar pine, California black oak
	Douglas-fir-----	790	90-107-125	70-94-122	
	Ponderosa pine-----	605	175-183-187		
	Douglas-fir-----	605	155-177-200		
Surnuf gravelly loam----	Ponderosa pine-----	600	119-121-125	139-144-154	Ponderosa pine, Douglas-fir, California black oak
	Douglas-fir-----	790	87-103-119	67-88-113	
	Ponderosa pine-----	605	178-187-198		
	Douglas-fir-----	605	142-166-191		
719:					
Griffgulch very gravelly silt loam----	Ponderosa pine-----	600	111-118-123	124-137-149	Ponderosa pine, Douglas-fir, sugar pine, California black oak
	Douglas-fir-----	790	90-107-125	70-94-122	
	Ponderosa pine-----	605	175-183-187		
	Douglas-fir-----	605	155-177-200		
Surnuf gravelly loam----	Ponderosa pine-----	600	119-121-125	139-144-154	Ponderosa pine, Douglas-fir, California black oak
	Douglas-fir-----	790	87-103-119	67-88-113	
	Ponderosa pine-----	605	178-187-198		
	Douglas-fir-----	605	142-166-191		
721:					
Haploxerands, granitic till, medial sandy loam	White fir-----	30	55-61-67	109-131-152	White fir, California red fir, ponderosa pine, sugar pine, incense cedar
	Ponderosa pine-----	600	111-117-121	124-136-144	
	California red fir--	50	52-52-52	180-180-180	
	Douglas-fir-----	790	122-122-122	118-118-118	
	White fir-----	605	150-162-175		
	Ponderosa pine-----	605	175-183-187		
	California red fir--	605	164-164-164		
	Douglas-fir-----	605	186-186-186		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage	
	Common trees	Site index base	Site index (low-RV-high)		
722: Haploxerands, granitic till, medial sandy loam	White fir-----	30	55-61-67	109-131-152 124-136-144 180-180-180 118-118-118	White fir, California red fir, ponderosa pine, sugar pine, incense cedar
	Ponderosa pine-----	600	111-117-121		
	California red fir--	50	52-52-52		
	Douglas-fir-----	790	122-122-122		
	White fir-----	605	150-162-175		
	Ponderosa pine-----	605	175-183-187		
	California red fir--	605	164-164-164		
	Douglas-fir-----	605	186-186-186		
723: Haploxerands, granitic till, medial sandy loam	White fir-----	30	55-61-67	109-131-152 124-136-144 180-180-180 118-118-118	White fir, California red fir, ponderosa pine, sugar pine, incense cedar
	Ponderosa pine-----	600	111-117-121		
	California red fir--	50	52-52-52		
	Douglas-fir-----	790	122-122-122		
	White fir-----	605	150-162-175		
	Ponderosa pine-----	605	175-183-187		
	California red fir--	605	164-164-164		
	Douglas-fir-----	605	186-186-186		
724: Haploxerands, volcanic till, cobbly medial sandy loam-----	White fir-----	30	55-61-67	109-131-152 124-136-144 180-180-180 118-118-118	White fir, California red fir, ponderosa pine, sugar pine, incense cedar
	Ponderosa pine-----	600	111-117-121		
	California red fir--	50	52-52-52		
	Douglas-fir-----	790	122-122-122		
	White fir-----	605	150-162-175		
	Ponderosa pine-----	605	175-183-187		
	California red fir--	605	164-164-164		
	Douglas-fir-----	605	186-186-186		
725: Haploxerands, volcanic till, cobbly medial sandy loam-----	White fir-----	30	55-61-67	109-131-152 124-136-144 180-180-180 118-118-118	White fir, California red fir, ponderosa pine, sugar pine, incense cedar
	Ponderosa pine-----	600	111-117-121		
	California red fir--	50	52-52-52		
	Douglas-fir-----	790	122-122-122		
	White fir-----	605	150-162-175		
	Ponderosa pine-----	605	175-183-187		
	California red fir--	605	164-164-164		
	Douglas-fir-----	605	186-186-186		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage	
	Common trees	Site index base	Site index (low-RV-high)		Annual production* (low-RV-high)
726: Haploxerands, volcanic till, cobbly medial sandy loam-----	White fir-----	30	55-61-67	109-131-152	White fir, California red fir, ponderosa pine, sugar pine, incense cedar
	Ponderosa pine-----	600	111-117-121	124-136-144	
	California red fir--	50	52-52-52	180-180-180	
	Douglas-fir-----	790	122-122-122	118-118-118	
	White fir-----	605	150-162-175		
	Ponderosa pine-----	605	175-183-187		
	California red fir--	605	164-164-164		
	Douglas-fir-----	605	186-186-186		
727: Bonneyridge sandy loam--	Ponderosa pine-----	600	119-131-143	139-168-194	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	113-128-140	103-127-145	
	White fir-----	30	66-72-84	149-170-204	
	Ponderosa pine-----	605	186-196-200		
	Douglas-fir-----	605	174-193-200		
	White fir-----	605	175-184-200		
728: Bonneyridge sandy loam--	Ponderosa pine-----	600	119-131-143	139-168-194	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	113-128-140	103-127-145	
	White fir-----	30	66-72-84	149-170-204	
	Ponderosa pine-----	605	186-196-200		
	Douglas-fir-----	605	174-193-200		
	White fir-----	605	175-184-200		
729: Bonneyridge sandy loam--	Ponderosa pine-----	600	119-131-143	139-168-194	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	113-128-140	103-127-145	
	White fir-----	30	66-72-84	149-170-204	
	Ponderosa pine-----	605	186-196-200		
	Douglas-fir-----	605	174-193-200		
	White fir-----	605	175-184-200		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Annual production* (low-RV-high)	Trees to manage
	Common trees	Site index base	Site index (low-RV-high)		
730:					
Tusccoll gravelly loam--	Ponderosa pine-----	600	102-114-126	106-130-156	Douglas-fir, ponderosa pine, incense cedar, California black oak
	Douglas-fir-----	790	116-124-134	108-121-136	
	Ponderosa pine-----	605	162-180-198		
	Douglas-fir-----	605	175-183-200		
Schott very gravelly loam-----	Ponderosa pine-----	600	90-95-100	85-94-102	Ponderosa pine, Douglas-fir, incense cedar, California black oak
	Ponderosa pine-----	605	150-155-161		
731:					
Tusccoll gravelly loam--	Ponderosa pine-----	600	102-114-126	106-130-156	Douglas-fir, ponderosa pine, incense cedar, California black oak
	Douglas-fir-----	790	116-124-134	108-121-136	
	Ponderosa pine-----	605	162-180-198		
	Douglas-fir-----	605	175-183-200		
Schott very gravelly loam-----	Ponderosa pine-----	600	90-95-100	85-94-102	Ponderosa pine, Douglas-fir, incense cedar, California black oak
	Ponderosa pine-----	605	150-155-161		
732:					
Bonepile taxadjunct, duripan substratum----	Ponderosa pine-----	600	95-104-113	94-110-128	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	88-92-96	68-73-78	
	White fir-----	30	47-50-54	83-91-106	
	Ponderosa pine-----	605	162-169-176		
	Douglas-fir-----	605	139-140-142		
	White fir-----	605	135-142-149		
734:					
Haploxerands medial sandy loam-----	White fir-----	30	65-66-67	145-149-152	White fir, California red fir, ponderosa pine, sugar pine, incense cedar
	California red fir--	50	52-56-60	171-197-214	
	Ponderosa pine-----	600	105-107-110	112-116-122	
	White fir-----	605	169-172-175		
	California red fir--	605	173-177-181		
	Ponderosa pine-----	605	169-172-175		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage	
	Common trees	Site index base	Site index (low-RV-high)		Annual production* (low-RV-high)
801: Obstruction gravelly sandy loam-----	Ponderosa pine-----	600	121-131-144	144-168-197	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	134-137-142	136-140-148	
	White fir-----	30	72-86-95	170-209-217	
	Ponderosa pine-----	605	185-191-200		
	Douglas-fir-----	605	200-200-200		
	White fir-----	605	188-197-200		
802: Obskel very gravelly sandy loam-----	Ponderosa pine-----	600	135-141-150	177-190-210	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	130-142-150	129-148-158	
	White fir-----	30	80-85-91	196-206-217	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	200-200-200		
	White fir-----	605	200-200-200		
Obstruction gravelly sandy loam-----	Ponderosa pine-----	600	121-131-144	144-168-197	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	134-137-142	136-140-148	
	White fir-----	30	72-86-95	170-209-217	
	Ponderosa pine-----	605	185-191-200		
	Douglas-fir-----	605	200-200-200		
	White fir-----	605	188-197-200		
803: Obskel very gravelly sandy loam-----	Ponderosa pine-----	600	135-141-150	177-190-210	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	130-142-150	129-148-158	
	White fir-----	30	80-85-91	196-206-217	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	200-200-200		
	White fir-----	605	200-200-200		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage		
	Common trees	Site index base	Site index (low-RV-high)		Annual production* (low-RV-high)	
803: Obstruction gravelly sandy loam-----	Ponderosa pine-----	600	121-131-144	144-168-197	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak	
	Douglas-fir-----	790	134-137-142	136-140-148		
	White fir-----	30	72-86-95	170-209-217		
	Ponderosa pine-----	605	185-191-200			
	Douglas-fir-----	605	200-200-200			
	White fir-----	605	188-197-200			
804: Obskel very gravelly sandy loam-----	Ponderosa pine-----	600	135-141-150	177-190-210		Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	130-142-150	129-148-158		
	White fir-----	30	80-85-91	196-206-217		
	Ponderosa pine-----	605	200-200-200			
	Douglas-fir-----	605	200-200-200			
	White fir-----	605	200-200-200			
Obstruction gravelly sandy loam-----	Ponderosa pine-----	600	121-131-144	144-168-197	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak	
	Douglas-fir-----	790	134-137-142	136-140-148		
	White fir-----	30	72-86-95	170-209-217		
	Ponderosa pine-----	605	185-191-200			
	Douglas-fir-----	605	200-200-200			
	White fir-----	605	188-197-200			
805: Bottlehill very gravelly loam-----	Ponderosa pine-----	600	85-93-108	77-90-118		Ponderosa pine, Douglas-fir, sugar pine, white fir, California black oak
	Douglas-fir-----	790	80-95-111	58-77-100		
	White fir-----	30	51-58-66	95-121-149		
	Ponderosa pine-----	605	135-146-165			
	Douglas-fir-----	605	135-157-180			
	White fir-----	605	140-155-170			

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage	
	Common trees	Site index base	Site index (low-RV-high)		Annual production* (low-RV-high)
805: Walkermine very gravelly loam-----	Ponderosa pine-----	600	75-75-75	62-62-62	---
	Douglas-fir-----	790	90-90-90	70-70-70	
	White fir-----	30	55-55-55	109-109-109	
	Ponderosa pine-----	605	125-125-125		
	Douglas-fir-----	605	155-155-155		
	White fir-----	605	150-150-150		
Logtrain gravelly loam--	Ponderosa pine-----	600	115-123-128	132-149-161	---
	Douglas-fir-----	790	90-98-106	70-81-92	
	White fir-----	30	70-70-70	163-163-163	
	Ponderosa pine-----	605	180-193-200		
	Douglas-fir-----	605	155-162-169		
	White fir-----	605	170-170-170		
806: Bottlehill very gravelly loam-----	Ponderosa pine-----	600	85-93-108	77-90-118	Ponderosa pine, Douglas-fir, sugar pine, white fir, California black oak
	Douglas-fir-----	790	80-95-111	58-77-100	
	White fir-----	30	51-58-66	95-121-149	
	Ponderosa pine-----	605	135-146-165		
	Douglas-fir-----	605	135-157-180		
	White fir-----	605	140-155-170		
Logtrain gravelly loam--	Ponderosa pine-----	600	115-123-128	132-149-161	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	90-98-106	70-81-92	
	White fir-----	30	70-70-70	163-163-163	
	Ponderosa pine-----	605	180-193-200		
	Douglas-fir-----	605	155-162-169		
	White fir-----	605	170-170-170		
807: Bottlehill very gravelly loam-----	Ponderosa pine-----	600	85-93-108	77-90-118	Ponderosa pine, Douglas-fir, sugar pine, white fir, California black oak
	Douglas-fir-----	790	80-95-111	58-77-100	
	White fir-----	30	51-58-66	95-121-149	
	Ponderosa pine-----	605	135-146-165		
	Douglas-fir-----	605	135-157-180		
	White fir-----	605	140-155-170		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage		
	Common trees	Site index base	Site index (low-RV-high)		Annual production* (low-RV-high)	
807:						
Logtrain gravelly loam--	Ponderosa pine-----	600	115-123-128	132-149-161	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak	
	Douglas-fir-----	790	90-98-106	70-81-92		
	White fir-----	30	70-70-70	163-163-163		
	Ponderosa pine-----	605	180-193-200			
	Douglas-fir-----	605	155-162-169			
	White fir-----	605	170-170-170			
808:						
Bottlehill very gravelly loam-----	Ponderosa pine-----	600	85-93-108	77-90-118		Ponderosa pine, Douglas-fir, sugar pine, white fir, California black oak
	Douglas-fir-----	790	80-95-111	58-77-100		
	White fir-----	30	51-58-66	95-121-149		
	Ponderosa pine-----	605	135-146-165			
	Douglas-fir-----	605	135-157-180			
	White fir-----	605	140-155-170			
Walkermine very gravelly loam-----	Ponderosa pine-----	600	75-75-75	62-62-62	Douglas-fir, ponderosa pine, sugar pine, white fir, incense cedar, California black oak	
	Douglas-fir-----	790	90-90-90	70-70-70		
	White fir-----	30	55-55-55	109-109-109		
	Ponderosa pine-----	605	125-125-125			
	Douglas-fir-----	605	155-155-155			
	White fir-----	605	150-150-150			
Logtrain gravelly loam--	Ponderosa pine-----	600	115-123-128	132-149-161		Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	90-98-106	70-81-92		
	White fir-----	30	70-70-70	163-163-163		
	Ponderosa pine-----	605	180-193-200			
	Douglas-fir-----	605	155-162-169			
	White fir-----	605	170-170-170			

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage	
	Common trees	Site index base	Site index (low-RV-high)		Annual production* (low-RV-high)
809:					
Walkermine very gravelly loam-----	Ponderosa pine-----	600	75-75-75	62-62-62	Douglas-fir, ponderosa pine, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	90-90-90	70-70-70	
	White fir-----	30	55-55-55	109-109-109	
	Ponderosa pine-----	605	125-125-125		
	Douglas-fir-----	605	155-155-155		
	White fir-----	605	150-150-150		
Bottlehill very gravelly loam-----	Ponderosa pine-----	600	85-93-108	77-90-118	Ponderosa pine, Douglas-fir, sugar pine, white fir, California black oak
	Douglas-fir-----	790	80-95-111	58-77-100	
	White fir-----	30	51-58-66	95-121-149	
	Ponderosa pine-----	605	135-146-165		
	Douglas-fir-----	605	135-157-180		
	White fir-----	605	140-155-170		
Logtrain gravelly loam--	Ponderosa pine-----	600	115-123-128	132-149-161	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	90-98-106	70-81-92	
	White fir-----	30	70-70-70	163-163-163	
	Ponderosa pine-----	605	180-193-200		
	Douglas-fir-----	605	155-162-169		
	White fir-----	605	170-170-170		
810:					
Dixmine very gravelly loam-----	Douglas-fir-----	790	120-126-134	115-124-136	Douglas-fir, ponderosa pine, sugar pine, white fir, incense cedar, California black oak
	White fir-----	30	85-85-85	206-206-206	
	Ponderosa pine-----	600	114-131-148	130-168-205	
	Douglas-fir-----	605	180-193-200		
	White fir-----	605	200-200-200		
	Ponderosa pine-----	605	175-187-200		
Mac gravelly loam-----	Douglas-fir-----	790	90-104-113	70-89-103	Douglas-fir, ponderosa pine, sugar pine, white fir, California black oak
	Ponderosa pine-----	600	121-121-121	144-144-144	
	White fir-----	30	64-64-64	142-142-142	
	Douglas-fir-----	605	158-167-173		
	Ponderosa pine-----	605	188-188-188		
	White fir-----	605	166-166-166		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage	
	Common trees	Site index base	Site index (low-RV-high)		Annual production* (low-RV-high)
810: Spine very gravelly loam-----	Ponderosa pine-----	600	72-86-100	58-78-102	Douglas-fir, ponderosa pine, sugar pine, incense cedar, California black oak, white fir
	Douglas-fir-----	790	70-78-85	58-66-84	
	White fir-----	30	44-44-44	75-75-75	
	Ponderosa pine-----	605	125-142-160		
	Douglas-fir-----	605	125-135-145		
	White fir-----	605	125-125-125		
811: Powellton gravelly loam	Ponderosa pine-----	600	140-147-154	188-203-220	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar
	Douglas-fir-----	790	120-129-138	115-128-142	
	White fir-----	30	91-91-91	217-217-217	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	190-195-200		
	White fir-----	605	200-200-200		
Toadtown loam-----	Ponderosa pine-----	600	140-146-148	188-201-205	Ponderosa pine, sugar pine, Douglas-fir, tanoak, white fir, incense cedar
	Douglas-fir-----	790	130-130-130	129-129-129	
	White fir-----	30	65-65-65	145-145-145	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	200-200-200		
	White fir-----	605	170-170-170		
812: Powellton gravelly loam	Ponderosa pine-----	600	140-147-154	188-203-220	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar
	Douglas-fir-----	790	120-129-138	115-128-142	
	White fir-----	30	91-91-91	217-217-217	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	190-195-200		
	White fir-----	605	200-200-200		
Toadtown loam-----	Ponderosa pine-----	600	140-146-148	188-201-205	Ponderosa pine, sugar pine, Douglas-fir, tanoak, white fir, incense cedar
	Douglas-fir-----	790	130-130-130	129-129-129	
	White fir-----	30	65-65-65	145-145-145	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	200-200-200		
	White fir-----	605	170-170-170		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				Trees to manage
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
813:					
Powellton gravelly loam	Ponderosa pine-----	600	140-147-154	188-203-220	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar
	Douglas-fir-----	790	120-129-138	115-128-142	
	White fir-----	30	91-91-91	217-217-217	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	190-195-200		
	White fir-----	605	200-200-200		
Toadtown loam-----	Ponderosa pine-----	600	140-146-148	188-201-205	Ponderosa pine, sugar pine, Douglas-fir, tanoak, white fir, incense cedar
	Douglas-fir-----	790	130-130-130	129-129-129	
	White fir-----	30	65-65-65	145-145-145	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	200-200-200		
	White fir-----	605	170-170-170		
814:					
Mountyana gravelly loam	Ponderosa pine-----	600	120-123-126	141-149-156	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	100-103-110	84-88-98	
	White fir-----	30	65-66-67	145-149-152	
	Ponderosa pine-----	605	185-187-190		
	Douglas-fir-----	605	160-162-165		
	White fir-----	605	165-168-170		
815:					
Mountyana gravelly loam	Ponderosa pine-----	600	120-123-126	141-149-156	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	100-103-110	84-88-98	
	White fir-----	30	65-66-67	145-149-152	
	Ponderosa pine-----	605	185-187-190		
	Douglas-fir-----	605	160-162-165		
	White fir-----	605	165-168-170		
817:					
Lydon very gravelly medial coarse sandy loam-----	Ponderosa pine-----	600	82-92-102	72-88-106	Ponderosa pine, Douglas-fir, incense cedar, California black oak
	Douglas-fir-----	790	94-103-113	75-88-103	
	Ponderosa pine-----	605	135-147-160		
	Douglas-fir-----	605	155-167-180		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage	
	Common trees	Site index base	Site index (low-RV-high)		Annual production* (low-RV-high)
818: Lydon very gravelly medial coarse sandy loam-----	Ponderosa pine-----	600	82-92-102	72-88-106	Ponderosa pine, Douglas-fir, incense cedar, California black oak
	Douglas-fir-----	790	94-103-113	75-88-103	
	Ponderosa pine-----	605	135-147-160		
	Douglas-fir-----	605	155-167-180		
819: Lydon very gravelly medial coarse sandy loam-----	Ponderosa pine-----	600	82-92-102	72-88-106	
	Douglas-fir-----	790	94-103-113	75-88-103	
	Ponderosa pine-----	605	135-147-160		
	Douglas-fir-----	605	155-167-180		
820: Lydon very gravelly medial coarse sandy loam-----	Ponderosa pine-----	600	82-92-102	72-88-106	Ponderosa pine, Douglas-fir, incense cedar, California black oak
	Douglas-fir-----	790	94-103-113	75-88-103	
	Ponderosa pine-----	605	135-147-160		
	Douglas-fir-----	605	155-167-180		
821: Lydon very gravelly medial coarse sandy loam-----	Ponderosa pine-----	600	82-92-102	72-88-106	Ponderosa pine, Douglas-fir, incense cedar, California black oak
	Douglas-fir-----	790	94-103-113	75-88-103	
	Ponderosa pine-----	605	135-147-160		
	Douglas-fir-----	605	155-167-180		
822: Bonpile gravelly medial loam-----	Ponderosa pine-----	600	104-109-115	110-120-132	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	96-96-96	78-78-78	
	White fir-----	30	60-64-70	128-142-163	
	Ponderosa pine-----	605	165-172-175		
	Douglas-fir-----	605	160-160-160		
	White fir-----	605	160-169-175		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage	
	Common trees	Site index base	Site index (low-RV-high)		Annual production* (low-RV-high)
823: Bonpile gravelly medial loam-----	Ponderosa pine-----	600	104-109-115	110-120-132	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	96-96-96	78-78-78	
	White fir-----	30	60-64-70	128-142-163	
	Ponderosa pine-----	605	165-172-175		
	Douglas-fir-----	605	160-160-160		
	White fir-----	605	160-169-175		
824: Beecee very gravelly medial loam-----	Ponderosa pine-----	600	130-135-140	166-177-188	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	102-109-122	86-97-118	
	White fir-----	30	68-68-69	156-156-156	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	175-181-200		
	White fir-----	605	160-170-175		
825: Beecee very gravelly medial loam-----	Ponderosa pine-----	600	130-135-140	166-177-188	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	102-109-122	86-97-118	
	White fir-----	30	68-68-69	156-156-156	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	175-181-200		
	White fir-----	605	160-170-175		
Lydon very gravelly medial coarse sandy loam-----	Ponderosa pine-----	600	82-92-102	72-88-106	Ponderosa pine, Douglas-fir, incense cedar, California black oak
	Douglas-fir-----	790	94-103-113	75-88-103	
	Ponderosa pine-----	605	135-147-160		
	Douglas-fir-----	605	155-167-180		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage		
	Common trees	Site index base	Site index (low-RV-high)		Annual production* (low-RV-high)	
826: Redbone gravelly medial sandy loam-----	Ponderosa pine-----	600	100-103-107	102-108-116	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak	
	Douglas-fir-----	790	98-104-115	81-89-106		
	White fir-----	30	45-52-56	77-98-113		
	Ponderosa pine-----	605	160-160-160			
	Douglas-fir-----	605	160-168-185			
	White fir-----	605	125-145-160			
827: Redbone gravelly medial sandy loam-----	Ponderosa pine-----	600	100-103-107	102-108-116		Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	98-104-115	81-89-106		
	White fir-----	30	45-52-56	77-98-113		
	Ponderosa pine-----	605	160-160-160			
	Douglas-fir-----	605	160-168-185			
	White fir-----	605	125-145-160			
829: Paradiso loam-----	Ponderosa pine-----	600	114-119-126	130-139-156	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak	
	Douglas-fir-----	790	109-109-110	97-97-98		
	White fir-----	30	64-64-64	142-142-142		
	Ponderosa pine-----	605	180-187-195			
	Douglas-fir-----	605	160-162-165			
	White fir-----	605	160-160-160			
830: Paradiso loam-----	Ponderosa pine-----	600	114-119-126	130-139-156		Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	109-109-110	97-97-98		
	White fir-----	30	64-64-64	142-142-142		
	Ponderosa pine-----	605	180-187-195			
	Douglas-fir-----	605	160-162-165			
	White fir-----	605	160-160-160			

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Annual production* (low-RV-high)	Trees to manage
	Common trees	Site index base	Site index (low-RV-high)		
831:					
Surnuf gravelly loam----	Ponderosa pine-----	600	103-112-117	108-126-136	Douglas-fir, ponderosa pine, sugar pine, white fir, California black oak
	Douglas-fir-----	790	94-102-106	75-86-92	
	White fir-----	30	65-67-70	145-152-163	
	Ponderosa pine-----	605	150-169-180		
	Douglas-fir-----	605	155-158-160		
Bigridge loam-----	White fir-----	605	170-175-181		Ponderosa pine, Douglas-fir, California black oak
	Ponderosa pine-----	600	123-126-130	149-156-166	
Spine very gravelly loam-----	Ponderosa pine-----	605	189-194-200		Douglas-fir, ponderosa pine, sugar pine, incense cedar, California black oak, white fir
	Ponderosa pine-----	600	72-86-100	58-78-102	
	Douglas-fir-----	790	70-78-85	58-66-84	
	White fir-----	30	44-44-44	75-75-75	
	Ponderosa pine-----	605	125-142-160		
832:	Douglas-fir-----	605	125-135-145		Douglas-fir, ponderosa pine, sugar pine, white fir, California black oak
	White fir-----	605	125-125-125		
	Ponderosa pine-----	600	103-112-117	108-126-136	
	Douglas-fir-----	790	94-102-106	75-86-92	
	White fir-----	30	65-67-70	145-152-163	
Surnuf gravelly loam----	Ponderosa pine-----	605	150-169-180		Douglas-fir, ponderosa pine, sugar pine, incense cedar, California black oak, white fir
	Douglas-fir-----	605	155-158-160		
	White fir-----	605	170-175-181		
	Ponderosa pine-----	600	123-126-130	149-156-166	
	Ponderosa pine-----	605	189-194-200		
Bigridge loam-----	Ponderosa pine-----	600	72-86-100	58-78-102	Douglas-fir, ponderosa pine, sugar pine, incense cedar, California black oak, white fir
	Douglas-fir-----	790	70-78-85	58-66-84	
	White fir-----	30	44-44-44	75-75-75	
	Ponderosa pine-----	605	125-142-160		
	Douglas-fir-----	605	125-135-145		
Spine very gravelly loam-----	White fir-----	605	125-125-125		Douglas-fir, ponderosa pine, sugar pine, incense cedar, California black oak, white fir
	Ponderosa pine-----	600	103-112-117	108-126-136	
	Douglas-fir-----	790	94-102-106	75-86-92	
	White fir-----	30	65-67-70	145-152-163	
	Ponderosa pine-----	605	150-169-180		
Surnuf gravelly loam----	Douglas-fir-----	605	155-158-160		Douglas-fir, ponderosa pine, sugar pine, incense cedar, California black oak, white fir
	White fir-----	605	170-175-181		
	Ponderosa pine-----	600	123-126-130	149-156-166	
	Ponderosa pine-----	605	189-194-200		
	Ponderosa pine-----	600	72-86-100	58-78-102	
Bigridge loam-----	Douglas-fir-----	790	70-78-85	58-66-84	Douglas-fir, ponderosa pine, sugar pine, incense cedar, California black oak, white fir
	White fir-----	30	44-44-44	75-75-75	
	Ponderosa pine-----	605	125-142-160		
	Douglas-fir-----	605	125-135-145		
	White fir-----	605	125-125-125		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Annual production* (low-RV-high)	Trees to manage
	Common trees	Site index base	Site index (low-RV-high)		
833:					
Surnuf gravelly loam----	Ponderosa pine-----	600	103-112-117	108-126-136	Douglas-fir, ponderosa pine, sugar pine, white fir, California black oak
	Douglas-fir-----	790	94-102-106	75-86-92	
	White fir-----	30	65-67-70	145-152-163	
	Ponderosa pine-----	605	150-169-180		
	Douglas-fir-----	605	155-158-160		
	White fir-----	605	170-175-181		
Bigridge loam-----	Ponderosa pine-----	600	123-126-130	149-156-166	Ponderosa pine, Douglas-fir, California black oak
	Ponderosa pine-----	605	189-194-200		
Spine very gravelly loam-----	Ponderosa pine-----	600	72-86-100	58-78-102	Douglas-fir, ponderosa pine, sugar pine, incense cedar, California black oak, white fir
	Douglas-fir-----	790	70-78-85	58-66-84	
	White fir-----	30	44-44-44	75-75-75	
	Ponderosa pine-----	605	125-142-160		
	Douglas-fir-----	605	125-135-145		
	White fir-----	605	125-125-125		
834:					
Hietanen gravelly loam--	Ponderosa pine-----	600	140-145-150	188-199-210	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	116-122-130	108-118-129	
	White fir-----	30	62-72-90	135-170-217	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	181-192-200		
	White fir-----	605	162-174-195		
Mac gravelly loam-----	Douglas-fir-----	790	90-104-113	70-89-103	Douglas-fir, ponderosa pine, sugar pine, white fir, California black oak
	Ponderosa pine-----	600	121-121-121	144-144-144	
	White fir-----	30	64-64-64	142-142-142	
	Douglas-fir-----	605	158-167-173		
	Ponderosa pine-----	605	188-188-188		
	White fir-----	605	166-166-166		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage	
	Common trees	Site index base	Site index (low-RV-high)		Annual production* (low-RV-high)
835:					
Hietanen gravelly loam--	Ponderosa pine-----	600	140-145-150	188-199-210	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	116-122-130	108-118-129	
	White fir-----	30	62-72-90	135-170-217	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	181-192-200		
	White fir-----	605	162-174-195		
Mac gravelly loam-----	Douglas-fir-----	790	90-104-113	70-89-103	Douglas-fir, ponderosa pine, sugar pine, white fir, California black oak
	Ponderosa pine-----	600	121-121-121	144-144-144	
	White fir-----	30	64-64-64	142-142-142	
	Douglas-fir-----	605	158-167-173		
	Ponderosa pine-----	605	188-188-188		
	White fir-----	605	166-166-166		
836:					
Hietanen gravelly loam--	Ponderosa pine-----	600	140-145-150	188-199-210	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	116-122-130	108-118-129	
	White fir-----	30	62-72-90	135-170-217	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	181-192-200		
	White fir-----	605	162-174-195		
Mac gravelly loam-----	Douglas-fir-----	790	90-104-113	70-89-103	Douglas-fir, ponderosa pine, sugar pine, white fir, California black oak
	Ponderosa pine-----	600	121-121-121	144-144-144	
	White fir-----	30	64-64-64	142-142-142	
	Douglas-fir-----	605	158-167-173		
	Ponderosa pine-----	605	188-188-188		
	White fir-----	605	166-166-166		
Spine very gravelly loam-----	Ponderosa pine-----	600	72-86-100	58-78-102	Douglas-fir, ponderosa pine, sugar pine, incense cedar, California black oak, white fir
	Douglas-fir-----	790	70-78-85	58-66-84	
	White fir-----	30	44-44-44	75-75-75	
	Ponderosa pine-----	605	125-142-160		
	Douglas-fir-----	605	125-135-145		
	White fir-----	605	125-125-125		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Annual production* (low-RV-high)	Trees to manage	
	Common trees	Site index base	Site index (low-RV-high)			
837:						
Hietanen gravelly loam--	Ponderosa pine-----	600	140-145-150	188-199-210	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak	
	Douglas-fir-----	790	116-122-130	108-118-129		
	White fir-----	30	62-72-90	135-170-217		
	Ponderosa pine-----	605	200-200-200			
	Douglas-fir-----	605	181-192-200			
	White fir-----	605	162-174-195			
Spine very gravelly loam-----	Ponderosa pine-----	600	72-86-100	58-78-102		Douglas-fir, ponderosa pine, sugar pine, incense cedar, California black oak, white fir
	Douglas-fir-----	790	70-78-85	58-66-84		
	White fir-----	30	44-44-44	75-75-75		
	Ponderosa pine-----	605	125-142-160			
	Douglas-fir-----	605	125-135-145			
	White fir-----	605	125-125-125			
Mac gravelly loam-----	Douglas-fir-----	790	90-104-113	70-89-103	Douglas-fir, ponderosa pine, sugar pine, white fir, California black oak	
	Ponderosa pine-----	600	121-121-121	144-144-144		
	White fir-----	30	64-64-64	142-142-142		
	Douglas-fir-----	605	158-167-173			
	Ponderosa pine-----	605	188-188-188			
	White fir-----	605	166-166-166			
838:						
Dixmine very gravelly loam-----	Douglas-fir-----	790	120-126-134	115-124-136	Douglas-fir, ponderosa pine, sugar pine, white fir, incense cedar, California black oak	
	White fir-----	30	85-85-85	206-206-206		
	Ponderosa pine-----	600	114-131-148	130-168-205		
	Douglas-fir-----	605	180-193-200			
	White fir-----	605	200-200-200			
	Ponderosa pine-----	605	175-187-200			

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage	
	Common trees	Site index base	Site index (low-RV-high)		Annual production* (low-RV-high)
838:					
Spine very gravelly loam-----	Ponderosa pine-----	600	72-86-100	58-78-102	Douglas-fir, ponderosa pine, sugar pine, incense cedar, California black oak, white fir
	Douglas-fir-----	790	70-78-85	58-66-84	
	White fir-----	30	44-44-44	75-75-75	
	Ponderosa pine-----	605	125-142-160		
	Douglas-fir-----	605	125-135-145		
	White fir-----	605	125-125-125		
Mac gravelly loam-----	Douglas-fir-----	790	90-104-113	70-89-103	Douglas-fir, ponderosa pine, sugar pine, white fir, California black oak
	Ponderosa pine-----	600	121-121-121	144-144-144	
	White fir-----	30	64-64-64	142-142-142	
	Douglas-fir-----	605	158-167-173		
	Ponderosa pine-----	605	188-188-188		
	White fir-----	605	166-166-166		
839:					
Chawanakee gravelly sandy loam-----	Ponderosa pine-----	600	73-79-84	59-67-75	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	White fir-----	30	54-54-54	106-106-106	
	Ponderosa pine-----	605	120-129-137		
	White fir-----	605	150-150-150		
Billscabin gravelly sandy loam-----	Ponderosa pine-----	600	126-135-145	156-177-199	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	122-129-135	118-128-138	
	White fir-----	30	66-71-77	149-166-186	
	Ponderosa pine-----	605	194-198-200		
	Douglas-fir-----	605	192-197-200		
	White fir-----	605	176-185-193		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Annual production* (low-RV-high)	Trees to manage	
	Common trees	Site index base	Site index (low-RV-high)			
841: Billscabin gravelly sandy loam-----	Ponderosa pine-----	600	126-135-145	156-177-199	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak	
	Douglas-fir-----	790	122-129-135	118-128-138		
	White fir-----	30	66-71-77	149-166-186		
	Ponderosa pine-----	605	194-198-200			
	Douglas-fir-----	605	192-197-200			
	White fir-----	605	176-185-193			
Bonneyridge sandy loam--	Ponderosa pine-----	600	119-131-143	139-168-194		Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	113-128-140	103-127-145		
	White fir-----	30	66-72-84	149-170-204		
	Ponderosa pine-----	605	186-196-200			
	Douglas-fir-----	605	174-193-200			
	White fir-----	605	175-184-200			
842: Billscabin gravelly sandy loam-----	Ponderosa pine-----	600	126-135-145	156-177-199	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak	
	Douglas-fir-----	790	122-129-135	118-128-138		
	White fir-----	30	66-71-77	149-166-186		
	Ponderosa pine-----	605	194-198-200			
	Douglas-fir-----	605	192-197-200			
	White fir-----	605	176-185-193			
Bonneyridge sandy loam--	Ponderosa pine-----	600	119-131-143	139-168-194		Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	113-128-140	103-127-145		
	White fir-----	30	66-72-84	149-170-204		
	Ponderosa pine-----	605	186-196-200			
	Douglas-fir-----	605	174-193-200			
	White fir-----	605	175-184-200			

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage	
	Common trees	Site index base	Site index (low-RV-high)		Annual production* (low-RV-high)
846:					
Bonneyridge sandy loam--	Ponderosa pine-----	600	119-131-143	139-168-194	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	113-128-140	103-127-145	
	White fir-----	30	66-72-84	149-170-204	
	Ponderosa pine-----	605	186-196-200		
	Douglas-fir-----	605	174-193-200		
	White fir-----	605	175-184-200		
Lewisflat loam-----	Ponderosa pine-----	600	135-150-160	177-210-234	
	Douglas-fir-----	790	115-123-135	106-119-138	
	White fir-----	30	93-103-110	217-217-217	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	185-191-200		
	White fir-----	605	200-200-200		
847:					
Bonneyridge sandy loam--	Ponderosa pine-----	600	119-131-143	139-168-194	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	113-128-140	103-127-145	
	White fir-----	30	66-72-84	149-170-204	
	Ponderosa pine-----	605	186-196-200		
	Douglas-fir-----	605	174-193-200		
	White fir-----	605	175-184-200		
Lewisflat loam-----	Ponderosa pine-----	600	135-150-160	177-210-234	
	Douglas-fir-----	790	115-123-135	106-119-138	
	White fir-----	30	93-103-110	217-217-217	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	185-191-200		
	White fir-----	605	200-200-200		
848:					
Bonneyridge sandy loam--	Ponderosa pine-----	600	119-131-143	139-168-194	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	113-128-140	103-127-145	
	White fir-----	30	66-72-84	149-170-204	
	Ponderosa pine-----	605	186-196-200		
	Douglas-fir-----	605	174-193-200		
	White fir-----	605	175-184-200		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Annual production* (low-RV-high)	Trees to manage	
	Common trees	Site index base	Site index (low-RV-high)			
848:						
Lewisflat loam-----	Ponderosa pine-----	600	135-150-160	177-210-234	Ponderosa pine, Douglas-fir, white fir, sugar pine, incense cedar, California black oak	
	Douglas-fir-----	790	115-123-135	106-119-138		
	White fir-----	30	93-103-110	217-217-217		
	Ponderosa pine-----	605	200-200-200			
	Douglas-fir-----	605	185-191-200			
	White fir-----	605	200-200-200			
850:						
Lewisflat loam-----	Ponderosa pine-----	600	135-150-160	177-210-234		Ponderosa pine, Douglas-fir, white fir, sugar pine, incense cedar, California black oak
	Douglas-fir-----	790	115-123-135	106-119-138		
	White fir-----	30	93-103-110	217-217-217		
	Ponderosa pine-----	605	200-200-200			
	Douglas-fir-----	605	185-191-200			
	White fir-----	605	200-200-200			
851:						
Lewisflat loam-----	Ponderosa pine-----	600	135-150-160	177-210-234	Ponderosa pine, Douglas-fir, white fir, sugar pine, incense cedar, California black oak	
	Douglas-fir-----	790	115-123-135	106-119-138		
	White fir-----	30	93-103-110	217-217-217		
	Ponderosa pine-----	605	200-200-200			
	Douglas-fir-----	605	185-191-200			
	White fir-----	605	200-200-200			
852:						
Lewisflat loam-----	Ponderosa pine-----	600	135-150-160	177-210-234		Ponderosa pine, Douglas-fir, white fir, sugar pine, incense cedar, California black oak
	Douglas-fir-----	790	115-123-135	106-119-138		
	White fir-----	30	93-103-110	217-217-217		
	Ponderosa pine-----	605	200-200-200			
	Douglas-fir-----	605	185-191-200			
	White fir-----	605	200-200-200			

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Annual production* (low-RV-high)	Trees to manage
	Common trees	Site index base	Site index (low-RV-high)		
860:					
Toadtown gravelly loam--	Ponderosa pine-----	600	147-155-160	203-222-234	Douglas-fir, ponderosa pine, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	126-132-140	124-133-145	
	White fir-----	30	74-82-88	176-200-213	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	200-200-200		
	White fir-----	605	191-198-200		
Powellton silt loam----	Ponderosa pine-----	600	153-154-155	217-220-222	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar
	Douglas-fir-----	790	125-136-145	122-139-152	
	White fir-----	30	75-83-90	179-202-217	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	200-200-200		
	White fir-----	605	191-197-200		
861:					
Toadtown gravelly loam--	Ponderosa pine-----	600	147-155-160	203-222-234	Douglas-fir, ponderosa pine, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	126-132-140	124-133-145	
	White fir-----	30	74-82-88	176-200-213	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	200-200-200		
	White fir-----	605	191-198-200		
Powellton silt loam----	Ponderosa pine-----	600	153-154-155	217-220-222	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar
	Douglas-fir-----	790	125-136-145	122-139-152	
	White fir-----	30	75-83-90	179-202-217	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	200-200-200		
	White fir-----	605	191-197-200		
862:					
Toadtown gravelly loam--	Ponderosa pine-----	600	147-155-160	203-222-234	Douglas-fir, ponderosa pine, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	126-132-140	124-133-145	
	White fir-----	30	74-82-88	176-200-213	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	200-200-200		
	White fir-----	605	191-198-200		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Annual production* (low-RV-high)	Trees to manage
	Common trees	Site index base	Site index (low-RV-high)		
862:					
Powellton silt loam----	Ponderosa pine-----	600	153-154-155	217-220-222	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar
	Douglas-fir-----	790	125-136-145	122-139-152	
	White fir-----	30	75-83-90	179-202-217	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	200-200-200		
	White fir-----	605	191-197-200		
863:					
Toadtown gravelly loam--	Ponderosa pine-----	600	147-155-160	203-222-234	Douglas-fir, ponderosa pine, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	126-132-140	124-133-145	
	White fir-----	30	74-82-88	176-200-213	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	200-200-200		
	White fir-----	605	191-198-200		
Powellton silt loam----	Ponderosa pine-----	600	153-154-155	217-220-222	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar
	Douglas-fir-----	790	125-136-145	122-139-152	
	White fir-----	30	75-83-90	179-202-217	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	200-200-200		
	White fir-----	605	191-197-200		
880:					
Sites taxadjunct					
gravelly loam-----	Ponderosa pine-----	600	141-154-160	190-220-234	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar
	Douglas-fir-----	790	126-136-148	124-139-156	
	White fir-----	30	74-74-74	176-176-176	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	200-200-200		
	White fir-----	605	187-187-187		
Jocal taxadjunct					
gravelly loam-----	Ponderosa pine-----	600	140-150-160	188-210-234	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	120-131-140	115-131-145	
	White fir-----	30	85-87-90	206-211-217	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	190-197-200		
	White fir-----	605	200-200-200		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage	
	Common trees	Site index base	Site index (low-RV-high)		Annual production* (low-RV-high)
881:					
Sites taxadjunct					
gravelly loam-----	Ponderosa pine-----	600	141-154-160	190-220-234	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar
	Douglas-fir-----	790	126-136-148	124-139-156	
	White fir-----	30	74-74-74	176-176-176	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	200-200-200		
	White fir-----	605	187-187-187		
Jocal taxadjunct					
gravelly loam-----	Ponderosa pine-----	600	140-150-160	188-210-234	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	120-131-140	115-131-145	
	White fir-----	30	85-87-90	206-211-217	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	190-197-200		
	White fir-----	605	200-200-200		
882:					
Sites taxadjunct					
gravelly loam-----	Ponderosa pine-----	600	141-154-160	190-220-234	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar
	Douglas-fir-----	790	126-136-148	124-139-156	
	White fir-----	30	74-74-74	176-176-176	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	200-200-200		
	White fir-----	605	187-187-187		
Jocal taxadjunct					
gravelly loam-----	Ponderosa pine-----	600	140-150-160	188-210-234	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	120-131-140	115-131-145	
	White fir-----	30	85-87-90	206-211-217	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	190-197-200		
	White fir-----	605	200-200-200		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Annual production* (low-RV-high)	Trees to manage
	Common trees	Site index base	Site index (low-RV-high)		
883:					
Sites taxadjunct					
gravelly loam-----	Ponderosa pine-----	600	141-154-160	190-220-234	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar
	Douglas-fir-----	790	126-136-148	124-139-156	
	White fir-----	30	74-74-74	176-176-176	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	200-200-200		
	White fir-----	605	187-187-187		
Jocal taxadjunct					
gravelly loam-----	Ponderosa pine-----	600	140-150-160	188-210-234	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	120-131-140	115-131-145	
	White fir-----	30	85-87-90	206-211-217	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	190-197-200		
	White fir-----	605	200-200-200		
885:					
Rogerville silt loam---	Ponderosa pine-----	600	120-132-143	141-170-194	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	120-127-135	115-125-138	
	White fir-----	30	66-75-84	149-179-204	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	193-197-200		
	White fir-----	605	175-190-200		
886:					
Rogerville silt loam---	Ponderosa pine-----	600	120-132-143	141-170-194	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	120-127-135	115-125-138	
	White fir-----	30	66-75-84	149-179-204	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	193-197-200		
	White fir-----	605	175-190-200		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Annual production* (low-RV-high)	Trees to manage	
	Common trees	Site index base	Site index (low-RV-high)			
892: Rogerville silt loam----	Ponderosa pine-----	600	120-132-143	141-170-194	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak	
	Douglas-fir-----	790	120-127-135	115-125-138		
	White fir-----	30	66-75-84	149-179-204		
	Ponderosa pine-----	605	200-200-200			
	Douglas-fir-----	605	193-197-200			
	White fir-----	605	175-190-200			
893: Rogerville silt loam----	Ponderosa pine-----	600	120-132-143	141-170-194		Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	120-127-135	115-125-138		
	White fir-----	30	66-75-84	149-179-204		
	Ponderosa pine-----	605	200-200-200			
	Douglas-fir-----	605	193-197-200			
	White fir-----	605	175-190-200			
902: Lumpkin gravelly medial sandy loam-----	Ponderosa pine-----	600	50-59-64	38-45-50	Ponderosa pine, incense cedar, California black oak	
	Ponderosa pine-----	605	84-95-101			
903: Mudwash gravelly medial sandy loam-----	Ponderosa pine-----	600	114-121-126	130-144-156	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak	
	Douglas-fir-----	790	100-110-120	84-98-115		
	White fir-----	30	52-58-72	98-121-170		
	Ponderosa pine-----	605	175-186-192			
	Douglas-fir-----	605	175-184-190			
	White fir-----	605	143-160-187			

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage		
	Common trees	Site index base	Site index (low-RV-high)		Annual production* (low-RV-high)	
903: Timberisland very gravelly medial sandy loam-----	Ponderosa pine-----	600	93-102-113	90-106-128	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak	
	Douglas-fir-----	790	107-107-107	94-94-94		
	White fir-----	30	78-84-90	189-204-217		
	Ponderosa pine-----	605	162-165-175			
	Douglas-fir-----	605	175-175-175			
	White fir-----	605	187-193-200			
Lavatop gravelly medial fine sandy loam-----	Ponderosa pine-----	600	94-95-95	92-94-94		Ponderosa pine, Douglas-fir, white fir, incense cedar, California black oak
	Douglas-fir-----	790	86-86-86	66-66-66		
	Ponderosa pine-----	605	142-149-152			
	Douglas-fir-----	605	153-153-153			
904: Lavatop gravelly medial fine sandy loam-----	Ponderosa pine-----	600	94-95-95	92-94-94	Ponderosa pine, Douglas-fir, white fir, incense cedar, California black oak	
	Douglas-fir-----	790	86-86-86	66-66-66		
	Ponderosa pine-----	605	142-149-152			
	Douglas-fir-----	605	153-153-153			
905: Lumpkin gravelly medial sandy loam-----	Ponderosa pine-----	600	50-59-64	38-45-50	Ponderosa pine, incense cedar, California black oak	
	Ponderosa pine-----	605	84-95-101			
906: Lumpkin gravelly medial sandy loam-----	Ponderosa pine-----	600	50-59-64	38-45-50	Ponderosa pine, incense cedar, California black oak	
	Ponderosa pine-----	605	84-95-101			

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage	
	Common trees	Site index base	Site index (low-RV-high)		Annual production* (low-RV-high)
923:					
Powderhouse medial sandy loam-----	White fir-----	30	46-57-68	80-117-156	White fir, ponderosa pine, sugar pine, incense cedar, California red fir
	California red fir--	50	45-52-55	153-180-192	
	Douglas-fir-----	790	121-121-121	116-116-116	
	Ponderosa pine-----	600	110-111-113	122-124-128	
	White fir-----	605	126-155-175		
	California red fir--	605	150-154-157		
	Douglas-fir-----	605	192-192-192		
	Ponderosa pine-----	605	165-170-175		
McNair medial coarse sandy loam-----	White fir-----	30	61-72-82	131-170-200	White fir, ponderosa pine, sugar pine, California red fir, incense cedar, California black oak
	California red fir--	50	50-65-75	171-214-214	
	Ponderosa pine-----	600	90-97-107	85-97-116	
	White fir-----	605	163-182-200		
	California red fir--	605	178-186-191		
	Ponderosa pine-----	605	150-158-170		
Greenwell medial sandy loam-----	White fir-----	30	50-61-68	91-131-156	White fir, ponderosa pine, sugar pine, California red fir, incense cedar, California black oak
	Ponderosa pine-----	600	110-113-114	122-128-130	
	California red fir--	50	48-51-55	164-175-192	
	White fir-----	605	145-165-175		
	Ponderosa pine-----	605	170-173-175		
	California red fir--	605	153-160-168		
924:					
Powderhouse medial sandy loam-----	White fir-----	30	46-57-68	80-117-156	White fir, ponderosa pine, sugar pine, incense cedar, California red fir
	California red fir--	50	45-52-55	153-180-192	
	Douglas-fir-----	790	121-121-121	116-116-116	
	Ponderosa pine-----	600	110-111-113	122-124-128	
	White fir-----	605	126-155-175		
	California red fir--	605	150-154-157		
	Douglas-fir-----	605	192-192-192		
	Ponderosa pine-----	605	165-170-175		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage	
	Common trees	Site index base	Site index (low-RV-high)		
924:					
McNair medial coarse sandy loam-----	White fir-----	30	61-72-82	131-170-200	White fir, ponderosa pine, sugar pine, California red fir, incense cedar, California black oak
	California red fir--	50	50-65-75	171-214-214	
	Ponderosa pine-----	600	90-97-107	85-97-116	
	White fir-----	605	163-182-200		
	California red fir--	605	178-186-191		
	Ponderosa pine-----	605	150-158-170		
Greenwell medial sandy loam-----	White fir-----	30	50-61-68	91-131-156	White fir, ponderosa pine, sugar pine, California red fir, incense cedar, California black oak
	Ponderosa pine-----	600	110-113-114	122-128-130	
	California red fir--	50	48-51-55	164-175-192	
	White fir-----	605	145-165-175		
	Ponderosa pine-----	605	170-173-175		
	California red fir--	605	153-160-168		
925:					
Powderhouse medial sandy loam-----	White fir-----	30	46-57-68	80-117-156	White fir, ponderosa pine, sugar pine, incense cedar, California red fir
	California red fir--	50	45-52-55	153-180-192	
	Douglas-fir-----	790	121-121-121	116-116-116	
	Ponderosa pine-----	600	110-111-113	122-124-128	
	White fir-----	605	126-155-175		
	California red fir--	605	150-154-157		
	Douglas-fir-----	605	192-192-192		
	Ponderosa pine-----	605	165-170-175		
McNair medial coarse sandy loam-----	White fir-----	30	61-72-82	131-170-200	White fir, ponderosa pine, sugar pine, California red fir, incense cedar, California black oak
	California red fir--	50	50-65-75	171-214-214	
	Ponderosa pine-----	600	90-97-107	85-97-116	
	White fir-----	605	163-182-200		
	California red fir--	605	178-186-191		
	Ponderosa pine-----	605	150-158-170		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Annual production* (low-RV-high)	Trees to manage	
	Common trees	Site index base	Site index (low-RV-high)			
925: Greenwell medial sandy loam-----	White fir-----	30	50-61-68	91-131-156	White fir, ponderosa pine, sugar pine, California red fir, incense cedar, California black oak	
	Ponderosa pine-----	600	110-113-114	122-128-130		
	California red fir--	50	48-51-55	164-175-192		
	White fir-----	605	145-165-175			
	Ponderosa pine-----	605	170-173-175			
	California red fir--	605	153-160-168			
930: Timberisland very gravelly medial sandy loam-----	Ponderosa pine-----	600	93-102-113	90-106-128		Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	107-107-107	94-94-94		
	White fir-----	30	78-84-90	189-204-217		
	Ponderosa pine-----	605	162-165-175			
	Douglas-fir-----	605	175-175-175			
	White fir-----	605	187-193-200			
931: Mudwash gravelly medial sandy loam-----	Ponderosa pine-----	600	114-121-126	130-144-156	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak	
	Douglas-fir-----	790	100-110-120	84-98-115		
	White fir-----	30	52-58-72	98-121-170		
	Ponderosa pine-----	605	175-186-192			
	Douglas-fir-----	605	175-184-190			
	White fir-----	605	143-160-187			
Timberisland very gravelly medial sandy loam-----	Ponderosa pine-----	600	93-102-113	90-106-128	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak	
	Douglas-fir-----	790	107-107-107	94-94-94		
	White fir-----	30	78-84-90	189-204-217		
	Ponderosa pine-----	605	162-165-175			
	Douglas-fir-----	605	175-175-175			
	White fir-----	605	187-193-200			

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage		
	Common trees	Site index base	Site index (low-RV-high)		Annual production* (low-RV-high)	
932: Mudwash gravelly medial sandy loam-----	Ponderosa pine-----	600	114-121-126	130-144-156	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak	
	Douglas-fir-----	790	100-110-120	84-98-115		
	White fir-----	30	52-58-72	98-121-170		
	Ponderosa pine-----	605	175-186-192			
	Douglas-fir-----	605	175-184-190			
	White fir-----	605	143-160-187			
934: Mudwash gravelly medial sandy loam-----	Ponderosa pine-----	600	114-121-126	130-144-156		Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak
	Douglas-fir-----	790	100-110-120	84-98-115		
	White fir-----	30	52-58-72	98-121-170		
	Ponderosa pine-----	605	175-186-192			
	Douglas-fir-----	605	175-184-190			
	White fir-----	605	143-160-187			
940: Dejonah gravelly loam---	White fir-----	30	60-77-90	128-186-217	White fir, California red fir, sugar pine, Jeffrey pine, incense cedar	
	California red fir--	50	50-62-69	171-214-214		
	White fir-----	605	160-185-200			
	California red fir--	605	162-179-200			
Stagpoint loam-----	California red fir--	50	65-73-83	214-214-214		
	White fir-----	30	60-65-70	128-145-163		
	Ponderosa pine-----	600	100-115-130	102-132-166		
	California red fir--	605	175-188-200			
	White fir-----	605	184-187-190			
	Ponderosa pine-----	605	160-180-200			
941: Dejonah gravelly loam---	White fir-----	30	60-77-90	128-186-217	White fir, California red fir, sugar pine, Jeffrey pine, incense cedar	
	California red fir--	50	50-62-69	171-214-214		
	White fir-----	605	160-185-200			
	California red fir--	605	162-179-200			

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage	
	Common trees	Site index base	Site index (low-RV-high)		Annual production* (low-RV-high)
941:					
Stagpoint loam-----	California red fir--	50	65-73-83	214-214-214	White fir, California red fir, sugar pine, Jeffrey pine, incense cedar
	White fir-----	30	60-65-70	128-145-163	
	Ponderosa pine-----	600	100-115-130	102-132-166	
	California red fir--	605	175-188-200		
	White fir-----	605	184-187-190		
	Ponderosa pine-----	605	160-180-200		
942:					
Stagpoint loam-----	California red fir--	50	65-73-83	214-214-214	White fir, California red fir, sugar pine, Jeffrey pine, incense cedar
	White fir-----	30	60-65-70	128-145-163	
	Ponderosa pine-----	600	100-115-130	102-132-166	
	California red fir--	605	175-188-200		
	White fir-----	605	184-187-190		
	Ponderosa pine-----	605	160-180-200		
Dejonah gravelly loam---	White fir-----	30	60-77-90	128-186-217	White fir, California red fir, sugar pine, Jeffrey pine, incense cedar
	California red fir--	50	50-62-69	171-214-214	
	White fir-----	605	160-185-200		
	California red fir--	605	162-179-200		
948:					
Stagpoint loam-----	California red fir--	50	65-73-83	214-214-214	White fir, California red fir, sugar pine, Jeffrey pine, incense cedar
	White fir-----	30	60-65-70	128-145-163	
	Ponderosa pine-----	600	100-115-130	102-132-166	
	California red fir--	605	175-188-200		
	White fir-----	605	184-187-190		
	Ponderosa pine-----	605	160-180-200		
Dejonah gravelly loam---	White fir-----	30	60-77-90	128-186-217	White fir, California red fir, sugar pine, Jeffrey pine, incense cedar
	California red fir--	50	50-62-69	171-214-214	
	White fir-----	605	160-185-200		
	California red fir--	605	162-179-200		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage	
	Common trees	Site index base	Site index (low-RV-high)		
949: Rogerville taxadjunct fine sandy loam-----	White fir-----	30	50-54-59	91-106-124	White fir, California red fir, Jeffrey pine, sugar pine, Douglas-fir, incense cedar
	California red fir--	50	40-42-45	135-142-153	
	Jeffrey pine-----	600	95-113-131	94-128-168	
	White fir-----	605	137-147-158		
	California red fir--	605	145-147-150		
	Jeffrey pine-----	605	156-178-200		
950: Powderhouse medial sandy loam-----	White fir-----	30	46-57-68	80-117-156	White fir, ponderosa pine, sugar pine, incense cedar, California red fir
	California red fir--	50	45-52-55	153-180-192	
	Douglas-fir-----	790	121-121-121	116-116-116	
	Ponderosa pine-----	600	110-111-113	122-124-128	
	White fir-----	605	126-155-175		
	California red fir--	605	150-154-157		
	Douglas-fir-----	605	192-192-192		
	Ponderosa pine-----	605	165-170-175		
951: Powderhouse medial sandy loam-----	White fir-----	30	46-57-68	80-117-156	White fir, ponderosa pine, sugar pine, incense cedar, California red fir
	California red fir--	50	45-52-55	153-180-192	
	Douglas-fir-----	790	121-121-121	116-116-116	
	Ponderosa pine-----	600	110-111-113	122-124-128	
	White fir-----	605	126-155-175		
	California red fir--	605	150-154-157		
	Douglas-fir-----	605	192-192-192		
	Ponderosa pine-----	605	165-170-175		
960: Surnuf gravelly loam, high elevation-----	Ponderosa pine-----	600	130-138-150	166-183-210	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar
	Douglas-fir-----	790	106-111-123	92-100-119	
	White fir-----	30	60-64-72	128-142-170	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	164-178-187		
	White fir-----	605	160-171-185		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage	
	Common trees	Site index base	Site index (low-RV-high)		
961: Surnuf gravelly loam, high elevation-----	Ponderosa pine-----	600	130-138-150	166-183-210	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar
	Douglas-fir-----	790	106-111-123	92-100-119	
	White fir-----	30	60-64-72	128-142-170	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	164-178-187		
	White fir-----	605	160-171-185		
962: Surnuf gravelly loam, high elevation-----	Ponderosa pine-----	600	130-138-150	166-183-210	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar
	Douglas-fir-----	790	106-111-123	92-100-119	
	White fir-----	30	60-64-72	128-142-170	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	164-178-187		
	White fir-----	605	160-171-185		
963: Surnuf gravelly loam, high elevation-----	Ponderosa pine-----	600	130-138-150	166-183-210	Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar
	Douglas-fir-----	790	106-111-123	92-100-119	
	White fir-----	30	60-64-72	128-142-170	
	Ponderosa pine-----	605	200-200-200		
	Douglas-fir-----	605	164-178-187		
	White fir-----	605	160-171-185		

* Annual production is given in cubic feet per acre per year at the age of culmination of the mean annual increment.

Table 11a.--Forestland Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. Only the soils for which site index productivity information is available are listed. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
165yu: Holland loam-----	40	Low Texture/rock fragments	0.10	Low	
Hoda loam-----	25	Low Texture/rock fragments	0.10	Low	
Hotaw loam-----	20	Low Texture/rock fragments	0.10	Low	
173yu: Hotaw loam-----	45	Low Texture/rock fragments	0.10	Low	
Chawanakee gravelly sandy loam-----	20	Low		Low	
Holland loam-----	15	Low Texture/rock fragments	0.10	Low	
176yu: Jocal loam-----	80	Low Texture/rock fragments	0.10	Moderate Available water	0.50
188yu: Mariposa taxadjunct gravelly loam-----	80	Low		Low	
189yu: Mariposa taxadjunct gravelly loam-----	80	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
206: Islandbar sandy loam-----	60	Low		Moderate Available water	0.50
Chawanakee gravelly sandy loam-----	30	Low		High Available water	1.00

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
207:					
Islandbar sandy loam-----	60	Low		Low	
Chawanakee gravelly sandy loam-----	30	Low		Low	
208:					
Islandbar sandy loam-----	60	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Chawanakee gravelly sandy loam-----	30	High Texture/slope/ surface depth	1.00	Low	
209:					
Islandbar sandy loam-----	60	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Chawanakee gravelly sandy loam-----	30	High Texture/slope/ surface depth	1.00	Low	
210:					
Featherfalls sandy loam-----	50	Low		Moderate Available water	0.50
Islandbar sandy loam-----	35	Low		Moderate Available water	0.50
211:					
Featherfalls sandy loam-----	55	Low		Low	
Islandbar sandy loam-----	35	Low		Low	
212:					
Featherfalls sandy loam-----	55	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Islandbar sandy loam-----	35	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
213:					
Featherfalls sandy loam-----	45	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Islandbar sandy loam-----	35	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
214:					
Crystalhill gravelly coarse sandy loam-----	35	Moderate Texture/rock fragments	0.50	High Available water	1.00
Oregongulch gravelly sandy loam	20	Low		High Available water	1.00
Craigsaddle coarse sandy loam-----	20	High Texture/rock fragments	1.00	High Available water	1.00
215:					
Crystalhill gravelly coarse sandy loam-----	35	Moderate Texture/rock fragments	0.50	Low	
Oregongulch gravelly sandy loam	20	Low		Low	
Craigsaddle coarse sandy loam-----	20	High Texture/rock fragments	1.00	Low	
216:					
Crystalhill gravelly coarse sandy loam-----	35	Low		Low	
Oregongulch gravelly sandy loam	20	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Craigsaddle coarse sandy loam-----	20	High Texture/slope/ rock fragments	1.00	Low	

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
217: Crystalhill gravelly coarse sandy loam-----	35	Low		Low	
Oregongulch gravelly sandy loam	20	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Craigsaddle coarse sandy loam-----	20	High Texture/slope/ rock fragments	1.00	Low	
218: Chawanakee gravelly sandy loam-----	15	High Texture/slope/ surface depth	1.00	Low	
219: Chawanakee gravelly sandy loam-----	15	High Texture/slope/ surface depth	1.00	Low	
221yu: Sites loam-----	85	Low Texture/rock fragments	0.10	Moderate Available water	0.50
222yu: Sites loam-----	85	Low Texture/rock fragments	0.10	Moderate Available water	0.50
225yu: Sites gravelly loam, bedrock substratum-----	80	Low Texture/rock fragments	0.10	Moderate Available water	0.50
226yu: Sites gravelly loam, bedrock substratum-----	80	Low Texture/rock fragments	0.10	Moderate Available water	0.50
227yu: Sites gravelly loam, bedrock substratum-----	80	Low Texture/rock fragments	0.10	Low	

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
242yu: Surnuf loam-----	80	Low Texture/rock fragments	0.10	Moderate Available water	0.50
243yu: Surnuf loam-----	80	Low Texture/rock fragments	0.10	Low	
244yu: Surnuf loam-----	80	Low Texture/rock fragments	0.10	Low	
245: Surnuf loam-----	80	Low Texture/rock fragments	0.10	Low	
252yu: Woodleaf gravelly loam-----	80	Low Texture/rock fragments	0.10	Moderate Available water	0.50
253yu: Woodleaf gravelly loam-----	80	Low Texture/rock fragments	0.10	Low	
561: Bigridge loam-----	50	Low Texture/rock fragments	0.10	Moderate Available water	0.50
562: Bigridge loam-----	50	Low Texture/rock fragments	0.10	Low	
563: Bigridge loam-----	50	Low		Low	
564: Bigridge loam-----	50	Low		Low	
580: Surnuf taxadjunct loam-----	40	Low Texture/rock fragments	0.10	Moderate Available water	0.50
Griffgulch very gravelly silt loam	25	Moderate Texture/surface depth/rock fragments	0.50	High Available water	1.00

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
581: Surnuf taxadjunct loam-----	65	Low Texture/rock fragments	0.10	Low	
Griffgulch very gravelly silt loam	20	Moderate Texture/surface depth/rock fragments	0.50	Low	
582: Surnuf taxadjunct loam-----	50	Low		Low	
Griffgulch very gravelly silt loam	35	Low		Low	
583: Surnuf taxadjunct loam-----	50	Low		Low	
Griffgulch very gravelly silt loam	35	Low		Low	
629: Slideland gravelly loam-----	80	Low		Moderate Available water	0.50
630: Slideland gravelly loam-----	80	Low		Low	
631: Slideland gravelly loam-----	80	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
650: Schott very gravelly loam-----	65	Moderate Texture/surface depth/rock fragments	0.50	Moderate Available water	0.50
651: Schott very gravelly loam-----	65	Moderate Texture/surface depth/rock fragments	0.50	Low	
652: Schott very gravelly loam-----	65	Low		Low	

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
657: Bonneyridge sandy loam-----	35	Low		High Available water	1.00
Chawanakee gravelly sandy loam-----	30	Low		High Available water	1.00
658: Bonneyridge sandy loam-----	35	Low		Low	
Chawanakee gravelly sandy loam-----	30	Low		Low	
659: Bonneyridge sandy loam-----	35	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Chawanakee gravelly sandy loam-----	30	High Texture/slope/ surface depth	1.00	Low	
660: Bonneyridge sandy loam-----	30	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Chawanakee gravelly sandy loam-----	30	High Texture/slope/ surface depth	1.00	Low	
665: Surnuf gravelly loam-----	40	Low		Moderate Available water	0.50
Bigridge loam-----	40	Low Texture/rock fragments	0.10	Moderate Available water	0.50
666: Surnuf gravelly loam-----	40	Low		Low	
Bigridge loam-----	40	Low Texture/rock fragments	0.10	Low	

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
667: Surnuf gravelly loam-----	40	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Bigridge loam-----	40	Low		Low	
668: Surnuf gravelly loam-----	40	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Bigridge loam-----	40	Low		Low	
674: Chawanakee gravelly sandy loam-----	30	High Texture/slope/ surface depth	1.00	Low	
Bonneyridge sandy loam-----	30	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
700: Flumewall gravelly sandy loam-----	25	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
701: Powellton gravelly loam-----	40	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Obstruction gravelly sandy loam	30	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
702: Cerpone gravelly loam-----	50	Low		Moderate Available water	0.50
703: Cerpone gravelly loam-----	30	Low		Low	

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
704: Cerpone gravelly loam-----	15	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
705: Cerpone gravelly loam-----	15	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
711: Dixmine very gravelly loam-----	45	Moderate Texture/surface depth/rock fragments	0.50	Moderate Available water	0.50
Toadtown loam-----	40	Low		Moderate Available water	0.50
712: Dixmine very gravelly loam-----	50	Moderate Texture/surface depth/rock fragments	0.50	Low	
Toadtown loam-----	40	Low		Low	
713: Dixmine very gravelly loam-----	50	Low		Low	
Toadtown loam-----	35	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
714: Dixmine very gravelly loam-----	50	Low		Low	
Toadtown loam-----	35	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
715: Logtrain gravelly loam-----	40	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
715: Bottlehill very gravelly loam-----	30	Low		Low	
Walkermine very gravelly loam-----	20	Low		Low	
716: Griffgulch very gravelly silt loam	40	Moderate Texture/surface depth/rock fragments	0.50	High Available water	1.00
Surnuf gravelly loam-----	40	Low		Moderate Available water	0.50
717: Griffgulch very gravelly silt loam	40	Moderate Texture/surface depth/rock fragments	0.50	Low	
Surnuf gravelly loam-----	40	Low		Low	
718: Griffgulch very gravelly silt loam	35	Low		Low	
Surnuf gravelly loam-----	35	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
719: Griffgulch very gravelly silt loam	35	Low		Low	
Surnuf gravelly loam-----	30	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
721: Haploxerands, granitic till, medial sandy loam--	70	Low		High Available water	1.00
722: Haploxerands, granitic till, medial sandy loam--	70	Low		Low	

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
723: Haploxerands, granitic till, medial sandy loam--	70	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
724: Haploxerands, volcanic till, cobbly medial sandy loam-----	75	Low		High Available water	1.00
725: Haploxerands, volcanic till, cobbly medial sandy loam-----	75	Low		Low	
726: Haploxerands, volcanic till, cobbly medial sandy loam-----	75	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
727: Bonneyridge sandy loam-----	85	Low		High Available water	1.00
728: Bonneyridge sandy loam-----	85	Low		Low	
729: Bonneyridge sandy loam-----	85	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
730: Tusccoll gravelly loam-----	60	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Schott very gravelly loam-----	25	Low		Low	
731: Tusccoll gravelly loam-----	50	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
731: Schott very gravelly loam-----	35	Low		Low	
732: Bonepile taxadjunct, duripan substratum	90	Low		High Available water	1.00
734: Haploxerands medial sandy loam-----	55	Low		High Available water	1.00
801: Obstruction gravelly sandy loam	70	Low		Moderate Available water	0.50
802: Obskel very gravelly sandy loam	40	Moderate Texture/surface depth/rock fragments	0.50	Low	
Obstruction gravelly sandy loam	40	Low		Low	
803: Obskel very gravelly sandy loam	40	Low		Low	
Obstruction gravelly sandy loam	40	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
804: Obskel very gravelly sandy loam	35	Low		Low	
Obstruction gravelly sandy loam	25	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
805: Bottlehill very gravelly loam-----	50	Moderate Texture/surface depth/rock fragments	0.50	High Available water	1.00

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
805: Walkermine very gravelly loam-----	20	Moderate Texture/surface depth/rock fragments	0.50	High Available water	1.00
Logtrain gravelly loam-----	20	Low		Moderate Available water	0.50
806: Bottlehill very gravelly loam-----	50	Moderate Texture/surface depth/rock fragments	0.50	Low	
Logtrain gravelly loam-----	20	Low		Low	
807: Bottlehill very gravelly loam-----	35	Low		Low	
Logtrain gravelly loam-----	30	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
808: Bottlehill very gravelly loam-----	45	Low		Low	
Walkermine very gravelly loam-----	20	Low		Low	
Logtrain gravelly loam-----	20	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
809: Walkermine very gravelly loam-----	45	Low		Low	
Bottlehill very gravelly loam-----	15	Low		Low	
Logtrain gravelly loam-----	15	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
810: Dixmine very gravelly loam-----	35	Low		Low	
Mac gravelly loam---	25	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Spine very gravelly loam-----	25	Low		Low	
811: Powellton gravelly loam-----	50	Low		Moderate Available water	0.50
Toadtown loam-----	40	Low		Moderate Available water	0.50
812: Powellton gravelly loam-----	50	Low		Low	
Toadtown loam-----	40	Low		Low	
813: Powellton gravelly loam-----	50	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Toadtown loam-----	40	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
814: Mountyana gravelly loam-----	80	Low		Moderate Available water	0.50
815: Mountyana gravelly loam-----	80	Low		Low	
817: Lydon very gravelly medial coarse sandy loam-----	80	Moderate Texture/surface depth/rock fragments	0.50	High Available water	1.00
818: Lydon very gravelly medial coarse sandy loam-----	75	Moderate Texture/surface depth/rock fragments	0.50	Low	

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
819: Lydon very gravelly medial coarse sandy loam-----	65	Low		Low	
820: Lydon very gravelly medial coarse sandy loam-----	60	Low		Low	
821: Lydon very gravelly medial coarse sandy loam-----	55	Low		Low	
822: Bonepile gravelly medial loam-----	85	Low		Moderate Available water	0.50
823: Bonepile gravelly medial loam-----	85	Low		Low	
824: Beecee very gravelly medial loam-----	85	Low		Low	
825: Beecee very gravelly medial loam-----	60	Low		Low	
Lydon very gravelly medial coarse sandy loam-----	20	Low		Low	
826: Redbone gravelly medial sandy loam--	80	Low		High Available water	1.00
827: Redbone gravelly medial sandy loam--	80	Low		Low	
829: Paradiso loam-----	80	Low		Moderate Available water	0.50
830: Paradiso loam-----	75	Low		Low	
831: Surnuf gravelly loam-----	40	Low		Moderate Available water	0.50
Bigridge loam-----	30	Low Texture/rock fragments	0.10	Moderate Available water	0.50

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
831: Spine very gravelly loam-----	15	Moderate Texture/surface depth/rock fragments	0.50	High Available water	1.00
832: Surnuf gravelly loam-----	40	Low		Low	
Bigridge loam-----	30	Low Texture/rock fragments	0.10	Low	
Spine very gravelly loam-----	15	Moderate Texture/surface depth/rock fragments	0.50	Low	
833: Surnuf gravelly loam-----	60	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Bigridge loam-----	15	Low		Low	
Spine very gravelly loam-----	15	Low		Low	
834: Hietanen gravelly loam-----	50	Low		Moderate Available water	0.50
Mac gravelly loam---	30	Low		Moderate Available water	0.50
835: Hietanen gravelly loam-----	60	Low		Low	
Mac gravelly loam---	20	Low		Moderate Available water	0.50
836: Hietanen gravelly loam-----	50	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Mac gravelly loam---	20	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
836: Spine very gravelly loam-----	15	Low		Low	
837: Hietanen gravelly loam-----	35	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Spine very gravelly loam-----	25	Low		Low	
Mac gravelly loam---	20	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
838: Dixmine very gravelly loam-----	35	Low		Low	
Spine very gravelly loam-----	25	Low		Low	
Mac gravelly loam---	25	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
839: Chawanakee gravelly sandy loam-----	55	Low		High Available water	1.00
Billscabin gravelly sandy loam-----	35	Low		High Available water	1.00
841: Billscabin gravelly sandy loam-----	50	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Bonneyridge sandy loam-----	35	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
842: Billscabin gravelly sandy loam-----	60	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
842: Bonneyridge sandy loam-----	25	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
846: Bonneyridge sandy loam-----	60	Low		High Available water	1.00
Lewisflat loam-----	20	Low		Moderate Available water	0.50
847: Bonneyridge sandy loam-----	60	Low		Low	
Lewisflat loam-----	20	Low		Low	
848: Bonneyridge sandy loam-----	60	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Lewisflat loam-----	20	High Texture/slope/ surface depth	1.00	Low	
850: Lewisflat loam-----	85	Low		Moderate Available water	0.50
851: Lewisflat loam-----	80	Low		Low	
852: Lewisflat loam-----	75	High Texture/slope/ surface depth	1.00	Low	
860: Toadtown gravelly loam-----	60	Low Texture/rock fragments	0.10	Moderate Available water	0.50
Powellton silt loam	20	Low		Low	
861: Toadtown gravelly loam-----	60	Low Texture/rock fragments	0.10	Low	
Powellton silt loam	20	Low		Low	

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
862: Toadtown gravelly loam-----	60	Low		Low	
Powellton silt loam	20	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
863: Toadtown gravelly loam-----	60	Low		Low	
Powellton silt loam	20	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
880: Sites taxadjunct gravelly loam-----	50	Low		Moderate Available water	0.50
Jocal taxadjunct gravelly loam-----	35	Low		Moderate Available water	0.50
881: Sites taxadjunct gravelly loam-----	50	Low		Low	
Jocal taxadjunct gravelly loam-----	35	Low		Low	
882: Sites taxadjunct gravelly loam-----	50	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Jocal taxadjunct gravelly loam-----	35	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
883: Sites taxadjunct gravelly loam-----	50	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Jocal taxadjunct gravelly loam-----	40	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
885: Rogerville silt loam	75	Low Texture/rock fragments	0.10	Moderate Available water	0.50
886: Rogerville silt loam	80	Low Texture/rock fragments	0.10	Low	
892: Rogerville silt loam	85	Low		Low	
893: Rogerville silt loam	85	Low		Low	
902: Lumpkin gravelly medial sandy loam--	40	Low		High Available water	1.00
903: Mudwash gravelly medial sandy loam--	45	Low		Moderate Available water	0.50
Timberisland very gravelly medial sandy loam-----	25	Low		Low	
Lavatop gravelly medial fine sandy loam-----	20	Low		High Available water	1.00
904: Lavatop gravelly medial fine sandy loam-----	20	Low		Low	
905: Lumpkin gravelly medial sandy loam--	30	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
906: Lumpkin gravelly medial sandy loam--	30	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
923: Powderhouse medial sandy loam-----	45	Low		High Available water	1.00

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
923:					
McNair medial coarse sandy loam--	25	Low		High Available water	1.00
Greenwell medial sandy loam-----	20	Low Texture/rock fragments	0.10	Moderate Available water	0.50
924:					
Powderhouse medial sandy loam-----	45	Low		Low	
McNair medial coarse sandy loam--	25	Low		Low	
Greenwell medial sandy loam-----	20	Low Texture/rock fragments	0.10	Low	
925:					
Powderhouse medial sandy loam-----	45	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
McNair medial coarse sandy loam--	25	High Texture/slope/ surface depth	1.00	Low	
Greenwell medial sandy loam-----	20	Low		Low	
930:					
Timberisland very gravelly medial sandy loam-----	40	Moderate Texture/surface depth/rock fragments	0.50	High Available water	1.00
931:					
Mudwash gravelly medial sandy loam--	25	Low		Low	
Timberisland very gravelly medial sandy loam-----	15	Moderate Texture/surface depth/rock fragments	0.50	Low	

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
932: Mudwash gravelly medial sandy loam--	35	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
934: Mudwash gravelly medial sandy loam--	80	Low		Moderate Available water	0.50
940: Dejonah gravelly loam-----	50	Low		Moderate Available water	0.50
Stagpoint loam-----	30	Low		High Available water	1.00
941: Dejonah gravelly loam-----	50	Low		Low	
Stagpoint loam-----	30	Low		Low	
942: Stagpoint loam-----	50	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Dejonah gravelly loam-----	30	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
948: Stagpoint loam-----	55	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Dejonah gravelly loam-----	35	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
949: Rogerville taxadjunct fine sandy loam-----	80	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
950: Powderhouse medial sandy loam-----	20	Low		High Available water	1.00
951: Powderhouse medial sandy loam-----	20	Low		Low	
960: Surnuf gravelly loam, high elevation-----	85	Low Texture/rock fragments	0.10	Moderate Available water	0.50
961: Surnuf gravelly loam, high elevation-----	85	Low Texture/rock fragments	0.10	Moderate Available water	0.50
962: Surnuf gravelly loam, high elevation-----	85	Low Texture/rock rock fragments	0.10	Low	
963: Surnuf gravelly loam, high elevation-----	85	Low		Low	

Table 11b.--Forestland Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. Only the soils for which site index productivity information is available are listed. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
165yu:							
Holland loam-----	40	Well suited		Poorly suited Slope	0.75	Moderately suited Low strength	0.50
Hoda loam-----	25	Well suited		Poorly suited Slope	0.75	Moderately suited Low strength	0.50
Hotaw loam-----	20	Well suited		Poorly suited Slope	0.75	Moderately suited Low strength	0.50
173yu:							
Hotaw loam-----	45	Well suited		Poorly suited Slope	0.75	Moderately suited Low strength	0.50
Chawanakee gravelly sandy loam-----	20	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Well suited	
Holland loam-----	15	Well suited		Poorly suited Slope	0.75	Moderately suited Low strength	0.50
176yu:							
Jocal loam-----	80	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
188yu:							
Mariposa taxadjunct gravelly loam-----	80	Well suited		Poorly suited Slope	0.75	Moderately suited Slope	0.50
189yu:							
Mariposa taxadjunct gravelly loam-----	80	Moderately suited Slope	0.50	Unsuited Slope	1.00	Poorly suited Slope	1.00
206:							
Islandbar sandy loam-----	60	Moderately suited Sandiness	0.50	Moderately suited Sandiness Slope	0.50 0.50	Moderately suited Sandiness	0.50
Chawanakee gravelly sandy loam-----	30	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Well suited	
207:							
Islandbar sandy loam-----	60	Moderately suited Sandiness	0.50	Poorly suited Slope Sandiness	0.75 0.50	Moderately suited Sandiness Slope	0.50 0.50

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
207: Chawanakee gravelly sandy loam-----	30	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Moderately suited Slope	0.50
208: Islandbar sandy loam-----	60	Moderately suited Sandiness Slope	0.50 0.50	Unsuited Slope Sandiness	1.00 0.50	Poorly suited Slope Sandiness	1.00 0.50
Chawanakee gravelly sandy loam-----	30	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope	1.00
209: Islandbar sandy loam-----	60	Moderately suited Slope Sandiness	0.50 0.50	Unsuited Slope Sandiness	1.00 0.50	Poorly suited Slope Sandiness	1.00 0.50
Chawanakee gravelly sandy loam-----	30	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope	1.00
210: Featherfalls sandy loam-----	50	Well suited		Moderately suited Slope	0.50	Well suited	
Islandbar sandy loam-----	35	Moderately suited Sandiness	0.50	Moderately suited Sandiness Slope	0.50 0.50	Moderately suited Sandiness	0.50
211: Featherfalls sandy loam-----	55	Well suited		Unsuited Slope	1.00	Moderately suited Slope	0.50
Islandbar sandy loam-----	35	Moderately suited Sandiness	0.50	Poorly suited Slope Sandiness	0.75 0.50	Moderately suited Sandiness Slope	0.50 0.50
212: Featherfalls sandy loam-----	55	Moderately suited Slope	0.50	Unsuited Slope	1.00	Poorly suited Slope	1.00
Islandbar sandy loam-----	35	Moderately suited Sandiness Slope	0.50 0.50	Unsuited Slope Sandiness	1.00 0.50	Poorly suited Slope Sandiness	1.00 0.50

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
213:							
Featherfalls sandy loam-----	45	Moderately suited Slope	0.50	Unsuited Slope	1.00	Poorly suited Slope	1.00
Islandbar sandy loam-----	35	Moderately suited Slope Sandiness	0.50 0.50	Unsuited Slope Sandiness	1.00 0.50	Poorly suited Slope Sandiness	1.00 0.50
214:							
Crystalhill gravelly coarse sandy loam-----	35	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Well suited	
Oregongulch gravelly sandy loam	20	Moderately suited Sandiness	0.50	Moderately suited Sandiness Slope Rock fragments	0.50 0.50 0.50	Moderately suited Sandiness	0.50
Craigsaddle coarse sandy loam-----	20	Well suited		Moderately suited Slope	0.50	Well suited	
215:							
Crystalhill gravelly coarse sandy loam-----	35	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Moderately suited Slope	0.50
Oregongulch gravelly sandy loam	20	Moderately suited Sandiness	0.50	Poorly suited Slope Sandiness Rock fragments	0.75 0.50 0.50	Moderately suited Sandiness Slope	0.50 0.50
Craigsaddle coarse sandy loam-----	20	Well suited		Poorly suited Slope	0.75	Moderately suited Slope	0.50
216:							
Crystalhill gravelly coarse sandy loam-----	35	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope	1.00
Oregongulch gravelly sandy loam	20	Moderately suited Sandiness Slope	0.50 0.50	Unsuited Slope Sandiness Rock fragments	1.00 0.50 0.50	Poorly suited Slope Sandiness	1.00 0.50
Craigsaddle coarse sandy loam-----	20	Moderately suited Slope	0.50	Unsuited Slope	1.00	Poorly suited Slope	1.00

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
217: Crystalhill gravelly coarse sandy loam-----	35	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope	1.00
Oregongulch gravelly sandy loam	20	Moderately suited Slope Sandiness	0.50 0.50	Unsuited Slope Sandiness Rock fragments	1.00 0.50 0.50	Poorly suited Slope Sandiness	1.00 0.50
Craigsaddle coarse sandy loam-----	20	Moderately suited Slope	0.50	Unsuited Slope	1.00	Poorly suited Slope	1.00
218: Chawanakee gravelly sandy loam-----	15	Well suited		Unsuited Slope Rock fragments	1.00 0.50	Moderately suited Slope	0.50
219: Chawanakee gravelly sandy loam-----	15	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope	1.00
221yu: Sites loam-----	85	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
222yu: Sites loam-----	85	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
225yu: Sites gravelly loam, bedrock substratum-----	80	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Slope Stickiness; high plasticity index Rock fragments	0.50 0.50 0.50	Well suited	
226yu: Sites gravelly loam, bedrock substratum-----	80	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Slope Stickiness; high plasticity index Rock fragments	0.50 0.50 0.50	Well suited	

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
227yu: Sites gravelly loam, bedrock substratum-----	80	Moderately suited Stickiness; high plasticity index	0.50	Poorly suited Slope Stickiness; high plasticity index Rock fragments	0.75 0.50 0.50	Moderately suited Slope	0.50
242yu: Surnuf loam-----	80	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Slope Stickiness; high plasticity index	0.50 0.50	Moderately suited Low strength	0.50
243yu: Surnuf loam-----	80	Moderately suited Stickiness; high plasticity index	0.50	Poorly suited Slope Stickiness; high plasticity index	0.75 0.50	Moderately suited Low strength Slope	0.50 0.50
244yu: Surnuf loam-----	80	Moderately suited Slope Stickiness; high plasticity index	0.50 0.50	Unsuited Slope Stickiness; high plasticity index	1.00 0.50	Poorly suited Slope Low strength	1.00 0.50
245: Surnuf loam-----	80	Moderately suited Slope Stickiness; high plasticity index	0.50 0.50	Unsuited Slope Stickiness; high plasticity index	1.00 0.50	Poorly suited Slope Low strength	1.00 0.50
252yu: Woodleaf gravelly loam-----	80	Moderately suited Stickiness; high plasticity index Rock fragments	0.50 0.50	Poorly suited Rock fragments Stickiness; high plasticity index Slope	0.75 0.50 0.50	Moderately suited Low strength	0.50
253yu: Woodleaf gravelly loam-----	80	Moderately suited Stickiness; high plasticity index Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments Stickiness; high plasticity index	0.75 0.75 0.50	Moderately suited Low strength Slope	0.50 0.50
561: Bigridge loam-----	50	Moderately suited Sandiness Rock fragments	0.50 0.50	Poorly suited Rock fragments Sandiness Slope	0.75 0.50 0.50	Moderately suited Low strength Sandiness	0.50 0.50
562: Bigridge loam-----	50	Moderately suited Sandiness Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments Sandiness	0.75 0.75 0.50	Moderately suited Low strength Sandiness Slope	0.50 0.50 0.50

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
563: Bigridge loam-----	50	Moderately suited Sandiness	0.50	Unsuited Slope	1.00	Poorly suited Slope	1.00
		Slope	0.50	Rock fragments	0.75	Low strength	0.50
		Rock fragments	0.50	Sandiness	0.50	Sandiness	0.50
564: Bigridge loam-----	50	Moderately suited Slope	0.50	Unsuited Slope	1.00	Poorly suited Slope	1.00
		Sandiness	0.50	Rock fragments	0.75	Low strength	0.50
		Rock fragments	0.50	Sandiness	0.50	Sandiness	0.50
580: Surnuf taxadjunct loam-----	40	Poorly suited Stickiness; high plasticity index	0.75	Poorly suited Stickiness; high plasticity index Slope	0.75 0.50	Moderately suited Low strength	0.50
Griffgulch very gravelly silt loam	25	Moderately suited Rock fragments	0.50	Unsuited Rock fragments	1.00	Well suited	
		Stickiness; high plasticity index	0.50	Slope	0.50		
				Stickiness; high plasticity index	0.50		
581: Surnuf taxadjunct loam-----	65	Poorly suited Stickiness; high plasticity index	0.75	Unsuited Slope	1.00	Moderately suited Low strength	0.50
				Stickiness; high plasticity index	0.75	Slope	0.50
Griffgulch very gravelly silt loam	20	Moderately suited Rock fragments	0.50	Unsuited Rock fragments	1.00	Moderately suited Slope	0.50
		Stickiness; high plasticity index	0.50	Slope	0.75		
				Stickiness; high plasticity index	0.50		
582: Surnuf taxadjunct loam-----	50	Poorly suited Stickiness; high plasticity index	0.75	Unsuited Slope	1.00	Poorly suited Slope	1.00
		Slope	0.50	Stickiness; high plasticity index	0.75	Low strength	0.50
Griffgulch very gravelly silt loam	35	Moderately suited Rock fragments	0.50	Unsuited Slope	1.00	Poorly suited Slope	1.00
		Slope	0.50	Rock fragments	1.00		
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50		
583: Surnuf taxadjunct loam-----	50	Poorly suited Stickiness; high plasticity index	0.75	Unsuited Slope	1.00	Poorly suited Slope	1.00
		Slope	0.50	Stickiness; high plasticity index	0.75	Low strength	0.50

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
583: Griffgulch very gravelly silt loam	35	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	1.00		
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50		
629: Slideland gravelly loam-----	80	Well suited		Moderately suited		Moderately suited	
				Rock fragments	0.50	Low strength	0.50
				Slope	0.50		
630: Slideland gravelly loam-----	80	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
				Rock fragments	0.50	Slope	0.50
631: Slideland gravelly loam-----	80	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50	Low strength	0.50
650: Schott very gravelly loam-----	65	Poorly suited		Unsuited		Moderately suited	
		Rock fragments	0.75	Rock fragments	1.00	Rock fragments	0.50
		Sandiness	0.50	Sandiness	0.50	Sandiness	0.50
		Stickiness; high plasticity index	0.50	Slope	0.50		
				Stickiness; high plasticity index	0.50		
651: Schott very gravelly loam-----	65	Poorly suited		Unsuited		Moderately suited	
		Rock fragments	0.75	Slope	1.00	Rock fragments	0.50
		Sandiness	0.50	Rock fragments	1.00	Sandiness	0.50
		Stickiness; high plasticity index	0.50	Sandiness	0.50	Slope	0.50
				Stickiness; high plasticity index	0.50		
652: Schott very gravelly loam-----	65	Poorly suited		Unsuited		Poorly suited	
		Rock fragments	0.75	Slope	1.00	Slope	1.00
		Sandiness	0.50	Rock fragments	1.00	Rock fragments	0.50
		Slope	0.50	Sandiness	0.50	Sandiness	0.50
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50		
657: Bonneyridge sandy loam-----	35	Well suited		Moderately suited		Well suited	
				Slope	0.50		

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
657: Chawanakee gravelly sandy loam-----	30	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Well suited	
658: Bonneyridge sandy loam-----	35	Well suited		Poorly suited Slope	0.75	Moderately suited Slope	0.50
Chawanakee gravelly sandy loam-----	30	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Moderately suited Slope	0.50
659: Bonneyridge sandy loam-----	35	Moderately suited Slope	0.50	Unsuited Slope	1.00	Poorly suited Slope	1.00
Chawanakee gravelly sandy loam-----	30	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope	1.00
660: Bonneyridge sandy loam-----	30	Moderately suited Slope	0.50	Unsuited Slope	1.00	Poorly suited Slope	1.00
Chawanakee gravelly sandy loam-----	30	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope	1.00
665: Surnuf gravelly loam-----	40	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Rock fragments Slope Stickiness; high plasticity index	0.50 0.50 0.50	Moderately suited Low strength	0.50
Bigridge loam-----	40	Moderately suited Sandiness Rock fragments	0.50 0.50	Poorly suited Rock fragments Sandiness Slope	0.75 0.50 0.50	Moderately suited Low strength Sandiness	0.50 0.50
666: Surnuf gravelly loam-----	40	Moderately suited Stickiness; high plasticity index	0.50	Poorly suited Slope Rock fragments Stickiness; high plasticity index	0.75 0.50 0.50	Moderately suited Low strength Slope	0.50 0.50

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
666: Bigridge loam-----	40	Moderately suited Sandiness Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments Sandiness	0.75 0.75 0.50	Moderately suited Low strength Sandiness Slope	0.50 0.50 0.50
667: Surnuf gravelly loam-----	40	Moderately suited Slope Stickiness; high plasticity index	0.50 0.50	Unsuited Slope Rock fragments Stickiness; high plasticity index	1.00 0.50 0.50	Poorly suited Slope Low strength	1.00 0.50
Bigridge loam-----	40	Moderately suited Sandiness Slope Rock fragments	0.50 0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 0.75 0.50	Poorly suited Slope Low strength Sandiness	1.00 0.50 0.50
668: Surnuf gravelly loam-----	40	Moderately suited Slope Stickiness; high plasticity index	0.50 0.50	Unsuited Slope Rock fragments Stickiness; high plasticity index	1.00 0.50 0.50	Poorly suited Slope Low strength	1.00 0.50
Bigridge loam-----	40	Moderately suited Slope Sandiness Rock fragments	0.50 0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 0.75 0.50	Poorly suited Slope Low strength Sandiness	1.00 0.50 0.50
674: Chawanakee gravelly sandy loam-----	30	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope	1.00
Bonneyridge sandy loam-----	30	Moderately suited Slope	0.50	Unsuited Slope	1.00	Poorly suited Slope	1.00
700: Flumewall gravelly sandy loam-----	25	Poorly suited Slope Rock fragments	0.75 0.75	Unsuited Slope Rock fragments	1.00 1.00	Poorly suited Slope Rock fragments	1.00 0.50
701: Powellton gravelly loam-----	40	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope Low strength	1.00 0.50
Obstruction gravelly sandy loam	30	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Low strength Slope	1.00 1.00

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
702: Cerpone gravelly loam-----	50	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Moderately suited Low strength	0.50
703: Cerpone gravelly loam-----	30	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Moderately suited Low strength Slope	0.50 0.50
704: Cerpone gravelly loam-----	15	Moderately suited Rock fragments Slope	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Poorly suited Slope Low strength	1.00 0.50
705: Cerpone gravelly loam-----	15	Moderately suited Rock fragments Slope	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Poorly suited Slope Low strength	1.00 0.50
711: Dixmine very gravelly loam-----	45	Moderately suited Rock fragments	0.50	Moderately suited Rock fragments Slope	0.50 0.50	Well suited	
Toadtown loam-----	40	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Stickiness; high plasticity index Slope	0.50 0.50	Moderately suited Low strength	0.50
712: Dixmine very gravelly loam-----	50	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.50	Moderately suited Slope	0.50
Toadtown loam-----	40	Moderately suited Stickiness; high plasticity index	0.50	Poorly suited Slope Stickiness; high plasticity index	0.75 0.50	Moderately suited Low strength Slope	0.50 0.50
713: Dixmine very gravelly loam-----	50	Moderately suited Rock fragments Slope	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope	1.00
Toadtown loam-----	35	Moderately suited Stickiness; high plasticity index Slope	0.50 0.50	Unsuited Slope Stickiness; high plasticity index	1.00 0.50	Poorly suited Slope Low strength	1.00 0.50

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
714: Dixmine very gravelly loam-----	50	Moderately suited Rock fragments Slope	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope	1.00
Toadtown loam-----	35	Moderately suited Stickiness; high plasticity index Slope	0.50 0.50	Unsuited Slope Stickiness; high plasticity index	1.00 0.50	Poorly suited Slope Low strength	1.00 0.50
715: Logtrain gravelly loam-----	40	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope	1.00
Bottlehill very gravelly loam-----	30	Poorly suited Slope Rock fragments	0.75 0.50	Unsuited Slope Rock fragments	1.00 0.75	Poorly suited Slope	1.00
Walkermine very gravelly loam-----	20	Unsuited Restrictive layer Rock fragments Slope	1.00 0.75 0.75	Unsuited Slope Rock fragments Restrictive layer	1.00 1.00 1.00	Poorly suited Slope Rock fragments	1.00 0.50
716: Griffgulch very gravelly silt loam	40	Moderately suited Rock fragments Stickiness; high plasticity index	0.50 0.50	Unsuited Rock fragments Slope Stickiness; high plasticity index	1.00 0.50 0.50	Well suited	
Surnuf gravelly loam-----	40	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Rock fragments Slope Stickiness; high plasticity index	0.50 0.50 0.50	Moderately suited Low strength	0.50
717: Griffgulch very gravelly silt loam	40	Moderately suited Rock fragments Stickiness; high plasticity index	0.50 0.50	Unsuited Rock fragments Slope Stickiness; high plasticity index	1.00 0.75 0.50	Moderately suited Slope	0.50
Surnuf gravelly loam-----	40	Moderately suited Stickiness; high plasticity index	0.50	Poorly suited Slope Rock fragments Stickiness; high plasticity index	0.75 0.50 0.50	Moderately suited Low strength Slope	0.50 0.50

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
718: Griffgulch very gravelly silt loam	35	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	1.00		
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50		
Surnuf gravelly loam-----	35	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Stickiness; high plasticity index	0.50	Rock fragments	0.50	Low strength	0.50
				Stickiness; high plasticity index	0.50		
719: Griffgulch very gravelly silt loam	35	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	1.00		
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50		
Surnuf gravelly loam-----	30	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Stickiness; high plasticity index	0.50	Rock fragments	0.50	Low strength	0.50
				Stickiness; high plasticity index	0.50		
721: Haploxerands, granitic till, medial sandy loam--	70	Poorly suited		Unsuited		Poorly suited	
		Rock fragments	0.75	Rock fragments	1.00	Rock fragments	1.00
				Slope	0.50		
722: Haploxerands, granitic till, medial sandy loam--	70	Poorly suited		Unsuited		Poorly suited	
		Rock fragments	0.75	Rock fragments	1.00	Rock fragments	1.00
				Slope	0.75	Slope	0.50
723: Haploxerands, granitic till, medial sandy loam--	70	Poorly suited		Unsuited		Poorly suited	
		Rock fragments	0.75	Slope	1.00	Rock fragments	1.00
		Slope	0.50	Rock fragments	1.00	Slope	1.00
724: Haploxerands, volcanic till, cobbly medial sandy loam-----	75	Moderately suited		Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.75	Rock fragments	1.00
				Slope	0.50		

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
725: Haploxerands, volcanic till, cobble medial sandy loam-----	75	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.75	Poorly suited Rock fragments Slope	1.00 0.50
726: Haploxerands, volcanic till, cobble medial sandy loam-----	75	Moderately suited Rock fragments Slope	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Poorly suited Rock fragments Slope	1.00 1.00
727: Bonneyridge sandy loam-----	85	Well suited		Moderately suited Slope	0.50	Well suited	
728: Bonneyridge sandy loam-----	85	Well suited		Poorly suited Slope	0.75	Moderately suited Slope	0.50
729: Bonneyridge sandy loam-----	85	Moderately suited Slope	0.50	Unsuited Slope	1.00	Poorly suited Slope	1.00
730: Tussock gravelly loam-----	60	Moderately suited Rock fragments Slope	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope Rock fragments Low strength	1.00 0.50 0.50
Schott very gravelly loam-----	25	Poorly suited Rock fragments Sandiness Slope Stickiness; high plasticity index	0.75 0.50 0.50 0.50	Unsuited Slope Rock fragments Sandiness Stickiness; high plasticity index	1.00 1.00 0.50 0.50	Poorly suited Slope Rock fragments Sandiness	1.00 0.50 0.50
731: Tussock gravelly loam-----	50	Moderately suited Rock fragments Slope	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope Rock fragments Low strength	1.00 0.50 0.50
Schott very gravelly loam-----	35	Poorly suited Rock fragments Slope Sandiness Stickiness; high plasticity index	0.75 0.50 0.50 0.50	Unsuited Slope Rock fragments Sandiness Stickiness; high plasticity index	1.00 1.00 0.50 0.50	Poorly suited Slope Rock fragments Sandiness	1.00 0.50 0.50

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
732: Bonepile taxadjunct, duripan substratum	90	Poorly suited Rock fragments	0.75	Unsuited Rock fragments	1.00	Poorly suited Rock fragments	1.00
734: Haploxerands medial sandy loam-----	55	Well suited		Moderately suited Rock fragments Slope	0.50 0.50	Well suited	
801: Obstruction gravelly sandy loam	70	Well suited		Moderately suited Rock fragments Slope	0.50 0.50	Poorly suited Low strength	1.00
802: Obskel very gravelly sandy loam	40	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Moderately suited Slope	0.50
Obstruction gravelly sandy loam	40	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Poorly suited Low strength Slope	1.00 0.50
803: Obskel very gravelly sandy loam	40	Moderately suited Rock fragments Slope	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Poorly suited Slope	1.00
Obstruction gravelly sandy loam	40	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Low strength Slope	1.00 1.00
804: Obskel very gravelly sandy loam	35	Moderately suited Rock fragments Slope	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Poorly suited Slope	1.00
Obstruction gravelly sandy loam	25	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Low strength Slope	1.00 1.00
805: Bottlehill very gravelly loam-----	50	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Well suited	

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
805: Walkermine very gravelly loam-----	20	Unsuited		Unsuited		Moderately suited	
		Restrictive layer	1.00	Rock fragments	1.00	Rock fragments	0.50
		Rock fragments	0.75	Restrictive layer	1.00		
				Slope	0.50		
Logtrain gravelly loam-----	20	Well suited		Moderately suited		Well suited	
				Rock fragments	0.50		
				Slope	0.50		
806: Bottlehill very gravelly loam-----	50	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Slope	0.50
				Rock fragments	0.75		
Logtrain gravelly loam-----	20	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Slope	0.50
				Rock fragments	0.50		
807: Bottlehill very gravelly loam-----	35	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.75		
Logtrain gravelly loam-----	30	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50		
808: Bottlehill very gravelly loam-----	45	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.75		
Walkermine very gravelly loam-----	20	Unsuited		Unsuited		Poorly suited	
		Restrictive layer	1.00	Slope	1.00	Slope	1.00
		Rock fragments	0.75	Rock fragments	1.00	Rock fragments	0.50
		Slope	0.50	Restrictive layer	1.00		
Logtrain gravelly loam-----	20	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50		
809: Walkermine very gravelly loam-----	45	Unsuited		Unsuited		Poorly suited	
		Restrictive layer	1.00	Slope	1.00	Slope	1.00
		Rock fragments	0.75	Rock fragments	1.00	Rock fragments	0.50
		Slope	0.75	Restrictive layer	1.00		

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
809: Bottlehill very gravelly loam-----	15	Poorly suited Slope Rock fragments	0.75 0.50	Unsuited Slope Rock fragments	1.00 0.75	Poorly suited Slope	1.00
Logtrain gravelly loam-----	15	Poorly suited Slope	0.75	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope	1.00
810: Dixmine very gravelly loam-----	35	Moderately suited Rock fragments Slope	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope	1.00
Mac gravelly loam---	25	Moderately suited Slope Stickiness; high plasticity index Rock fragments	0.50 0.50 0.50	Unsuited Slope Rock fragments Stickiness; high plasticity index	1.00 0.50 0.50	Poorly suited Slope	1.00
Spine very gravelly loam-----	25	Moderately suited Rock fragments Slope Stickiness; high plasticity index	0.50 0.50 0.50	Unsuited Slope Rock fragments Stickiness; high plasticity index	1.00 1.00 0.50	Poorly suited Slope	1.00
811: Powellton gravelly loam-----	50	Well suited		Moderately suited Rock fragments Slope	0.50 0.50	Moderately suited Low strength	0.50
Toadtown loam-----	40	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Stickiness; high plasticity index Slope	0.50 0.50	Moderately suited Low strength	0.50
812: Powellton gravelly loam-----	50	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Moderately suited Low strength Slope	0.50 0.50
Toadtown loam-----	40	Moderately suited Stickiness; high plasticity index	0.50	Poorly suited Slope Stickiness; high plasticity index	0.75 0.50	Moderately suited Low strength Slope	0.50 0.50
813: Powellton gravelly loam-----	50	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope Low strength	1.00 0.50

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
813: Toadtown loam-----	40	Moderately suited Stickiness; high plasticity index Slope	0.50 0.50	Unsuited Slope Stickiness; high plasticity index	1.00 0.50	Poorly suited Slope Low strength	1.00 0.50
814: Mountyana gravelly loam-----	80	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Slope Stickiness; high plasticity index Rock fragments	0.50 0.50 0.50	Moderately suited Low strength	0.50
815: Mountyana gravelly loam-----	80	Moderately suited Stickiness; high plasticity index	0.50	Poorly suited Slope Stickiness; high plasticity index Rock fragments	0.75 0.50 0.50	Moderately suited Low strength Slope	0.50 0.50
817: Lydon very gravelly medial coarse sandy loam-----	80	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Well suited	
818: Lydon very gravelly medial coarse sandy loam-----	75	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Moderately suited Slope	0.50
819: Lydon very gravelly medial coarse sandy loam-----	65	Moderately suited Rock fragments Slope	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Poorly suited Slope	1.00
820: Lydon very gravelly medial coarse sandy loam-----	60	Moderately suited Rock fragments Slope	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Poorly suited Slope	1.00
821: Lydon very gravelly medial coarse sandy loam-----	55	Poorly suited Slope Rock fragments	0.75 0.50	Unsuited Slope Rock fragments	1.00 0.75	Poorly suited Slope	1.00
822: Bonepile gravelly medial loam-----	85	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Poorly suited Rock fragments	1.00

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
823: Bonepile gravelly medial loam-----	85	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Poorly suited Rock fragments Slope	1.00 0.50
824: Beecee very gravelly medial loam-----	85	Moderately suited Rock fragments Slope	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Poorly suited Slope Rock fragments	1.00 0.50
825: Beecee very gravelly medial loam-----	60	Moderately suited Rock fragments Slope	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Poorly suited Slope Rock fragments	1.00 0.50
Lydon very gravelly medial coarse sandy loam-----	20	Moderately suited Rock fragments Slope	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Poorly suited Slope	1.00
826: Redbone gravelly medial sandy loam--	80	Well suited		Moderately suited Rock fragments Slope	0.50 0.50	Well suited	
827: Redbone gravelly medial sandy loam--	80	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Moderately suited Slope	0.50
829: Paradiso loam-----	80	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Slope Stickiness; high plasticity index	0.50 0.50	Moderately suited Low strength	0.50
830: Paradiso loam-----	75	Moderately suited Stickiness; high plasticity index	0.50	Poorly suited Slope Stickiness; high plasticity index	0.75 0.50	Moderately suited Low strength Slope	0.50 0.50
831: Surnuf gravelly loam-----	40	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Rock fragments Slope Stickiness; high plasticity index	0.50 0.50 0.50	Moderately suited Low strength	0.50
Bigridge loam-----	30	Moderately suited Sandiness Rock fragments	0.50 0.50	Poorly suited Rock fragments Sandiness Slope	0.75 0.50 0.50	Moderately suited Low strength Sandiness	0.50 0.50

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
831: Spine very gravelly loam-----	15	Moderately suited Rock fragments Stickiness; high plasticity index	0.50 0.50	Unsuited Rock fragments Slope Stickiness; high plasticity index	1.00 0.50 0.50	Well suited	
832: Surnuf gravelly loam-----	40	Moderately suited Stickiness; high plasticity index	0.50	Poorly suited Slope Rock fragments Stickiness; high plasticity index	0.75 0.50 0.50	Moderately suited Low strength Slope	0.50 0.50
Bigridge loam-----	30	Moderately suited Sandiness Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments Sandiness	0.75 0.75 0.50	Moderately suited Low strength Sandiness Slope	0.50 0.50 0.50
Spine very gravelly loam-----	15	Moderately suited Rock fragments Stickiness; high plasticity index	0.50 0.50	Unsuited Rock fragments Slope Stickiness; high plasticity index	1.00 0.75 0.50	Moderately suited Slope	0.50
833: Surnuf gravelly loam-----	60	Moderately suited Slope Stickiness; high plasticity index	0.50 0.50	Unsuited Slope Rock fragments Stickiness; high plasticity index	1.00 0.50 0.50	Poorly suited Slope Low strength	1.00 0.50
Bigridge loam-----	15	Moderately suited Sandiness Slope Rock fragments	0.50 0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 0.75 0.50	Poorly suited Slope Low strength Sandiness	1.00 0.50 0.50
Spine very gravelly loam-----	15	Moderately suited Rock fragments Slope Stickiness; high plasticity index	0.50 0.50 0.50	Unsuited Slope Rock fragments Stickiness; high plasticity index	1.00 1.00 0.50	Poorly suited Slope	1.00
834: Hietanen gravelly loam-----	50	Well suited		Moderately suited Rock fragments Slope	0.50 0.50	Moderately suited Low strength	0.50
Mac gravelly loam---	30	Moderately suited Stickiness; high plasticity index Rock fragments	0.50 0.50	Moderately suited Rock fragments Slope Stickiness; high plasticity index	0.50 0.50 0.50	Well suited	

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
835: Hietanen gravelly loam-----	60	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Moderately suited Low strength Slope	0.50 0.50
Mac gravelly loam---	20	Moderately suited Stickiness; high plasticity index Rock fragments	0.50 0.50	Moderately suited Slope Rock fragments Stickiness; high plasticity index	0.50 0.50 0.50	Well suited	
836: Hietanen gravelly loam-----	50	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope Low strength	1.00 0.50
Mac gravelly loam---	20	Moderately suited Slope Stickiness; high plasticity index Rock fragments	0.50 0.50 0.50	Unsuited Slope Rock fragments Stickiness; high plasticity index	1.00 0.50 0.50	Poorly suited Slope	1.00
Spine very gravelly loam-----	15	Moderately suited Rock fragments Slope Stickiness; high plasticity index	0.50 0.50 0.50	Unsuited Slope Rock fragments Stickiness; high plasticity index	1.00 1.00 0.50	Moderately suited Slope	0.50
837: Hietanen gravelly loam-----	35	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope Low strength	1.00 0.50
Spine very gravelly loam-----	25	Moderately suited Rock fragments Slope Stickiness; high plasticity index	0.50 0.50 0.50	Unsuited Slope Rock fragments Stickiness; high plasticity index	1.00 1.00 0.50	Poorly suited Slope	1.00
Mac gravelly loam---	20	Moderately suited Slope Stickiness; high plasticity index Rock fragments	0.50 0.50 0.50	Unsuited Slope Rock fragments Stickiness; high plasticity index	1.00 0.50 0.50	Poorly suited Slope	1.00
838: Dixmine very gravelly loam-----	35	Moderately suited Rock fragments Slope	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope	1.00

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
838: Spine very gravelly loam-----	25	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	1.00		
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50		
Mac gravelly loam---	25	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Stickiness; high plasticity index	0.50	Rock fragments	0.50		
		Rock fragments	0.50	Stickiness; high plasticity index	0.50		
839: Chawanakee gravelly sandy loam-----	55	Well suited		Moderately suited		Well suited	
				Slope	0.50		
				Rock fragments	0.50		
Billscabin gravelly sandy loam-----	35	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Rock fragments	0.75	Rock fragments	0.50
		Sandiness	0.50	Sandiness	0.50	Sandiness	0.50
				Slope	0.50		
841: Billscabin gravelly sandy loam-----	50	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Sandiness	0.50	Rock fragments	0.75	Rock fragments	0.50
		Slope	0.50	Sandiness	0.50	Sandiness	0.50
Bonneyridge sandy loam-----	35	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
842: Billscabin gravelly sandy loam-----	60	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.75	Rock fragments	0.50
		Sandiness	0.50	Sandiness	0.50	Sandiness	0.50
Bonneyridge sandy loam-----	25	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
846: Bonneyridge sandy loam-----	60	Well suited		Moderately suited		Well suited	
				Slope	0.50		
Lewisflat loam-----	20	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
847: Bonneyridge sandy loam-----	60	Well suited		Poorly suited Slope	0.75	Moderately suited Slope	0.50
Lewisflat loam-----	20	Well suited		Poorly suited Slope	0.75	Moderately suited Low strength Slope	0.50 0.50
848: Bonneyridge sandy loam-----	60	Moderately suited Slope	0.50	Unsuited Slope	1.00	Poorly suited Slope	1.00
Lewisflat loam-----	20	Moderately suited Slope	0.50	Unsuited Slope	1.00	Poorly suited Slope Low strength	1.00 0.50
850: Lewisflat loam-----	85	Well suited		Well suited		Moderately suited Low strength	0.50
851: Lewisflat loam-----	80	Well suited		Poorly suited Slope	0.75	Moderately suited Low strength Slope	0.50 0.50
852: Lewisflat loam-----	75	Moderately suited Slope	0.50	Unsuited Slope	1.00	Poorly suited Slope Low strength	1.00 0.50
860: Toadtown gravelly loam-----	60	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Slope Stickiness; high plasticity index Rock fragments	0.50 0.50 0.50	Poorly suited Low strength	1.00
Powellton silt loam	20	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Slope Stickiness; high plasticity index	0.50 0.50	Moderately suited Low strength	0.50
861: Toadtown gravelly loam-----	60	Moderately suited Stickiness; high plasticity index	0.50	Poorly suited Slope Stickiness; high plasticity index Rock fragments	0.75 0.50 0.50	Poorly suited Low strength	1.00
Powellton silt loam	20	Moderately suited Stickiness; high plasticity index	0.50	Poorly suited Slope Stickiness; high plasticity index	0.75 0.50	Moderately suited Low strength Slope	0.50 0.50

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
862: Toadtown gravelly loam-----	60	Moderately suited Slope Stickiness; high plasticity index	0.50 0.50	Unsuited Slope Stickiness; high plasticity index Rock fragments	1.00 0.50 0.50	Poorly suited Low strength Slope	1.00 1.00
Powellton silt loam	20	Moderately suited Slope Stickiness; high plasticity index	0.50 0.50	Unsuited Slope Stickiness; high plasticity index	1.00 0.50	Poorly suited Slope Low strength	1.00 0.50
863: Toadtown gravelly loam-----	60	Moderately suited Slope Stickiness; high plasticity index	0.50 0.50	Unsuited Slope Stickiness; high plasticity index Rock fragments	1.00 0.50 0.50	Poorly suited Low strength Slope	1.00 1.00
Powellton silt loam	20	Moderately suited Slope Stickiness; high plasticity index	0.50 0.50	Unsuited Slope Stickiness; high plasticity index	1.00 0.50	Poorly suited Slope Low strength	1.00 0.50
880: Sites taxadjunct gravelly loam-----	50	Poorly suited Stickiness; high plasticity index Rock fragments	0.75 0.50	Poorly suited Stickiness; high plasticity index Rock fragments Slope	0.75 0.75 0.50	Well suited	
Jocal taxadjunct gravelly loam-----	35	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Well suited	
881: Sites taxadjunct gravelly loam-----	50	Poorly suited Stickiness; high plasticity index Rock fragments	0.75 0.50	Poorly suited Slope Stickiness; high plasticity index Rock fragments	0.75 0.75 0.75	Well suited	
Jocal taxadjunct gravelly loam-----	35	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Moderately suited Slope	0.50
882: Sites taxadjunct gravelly loam-----	50	Poorly suited Stickiness; high plasticity index Slope Rock fragments	0.75 0.50 0.50	Unsuited Slope Stickiness; high plasticity index Rock fragments	1.00 0.75 0.75	Poorly suited Slope	1.00

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
882: Jocal taxadjunct gravelly loam-----	35	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope	1.00
883: Sites taxadjunct gravelly loam-----	50	Poorly suited Stickiness; high plasticity index Slope Rock fragments	0.75 0.50 0.50	Unsuited Slope Stickiness; high plasticity index Rock fragments	1.00 0.75 0.75	Poorly suited Slope	1.00
Jocal taxadjunct gravelly loam-----	40	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope	1.00
885: Rogerville silt loam	75	Moderately suited Stickiness; high plasticity index Sandiness	0.50 0.50 0.50	Moderately suited Stickiness; high plasticity index Rock fragments Sandiness Slope	0.50 0.50 0.50 0.50	Moderately suited Low strength Sandiness	0.50 0.50
886: Rogerville silt loam	80	Moderately suited Stickiness; high plasticity index Sandiness	0.50 0.50 0.50	Poorly suited Slope Stickiness; high plasticity index Rock fragments Sandiness	0.75 0.50 0.50 0.50	Moderately suited Low strength Sandiness Slope	0.50 0.50 0.50
892: Rogerville silt loam	85	Moderately suited Stickiness; high plasticity index Slope Sandiness	0.50 0.50 0.50 0.50	Unsuited Slope Stickiness; high plasticity index Rock fragments Sandiness	1.00 0.50 0.50 0.50	Poorly suited Slope Low strength Sandiness	1.00 0.50 0.50
893: Rogerville silt loam	85	Moderately suited Stickiness; high plasticity index Sandiness Slope	0.50 0.50 0.50 0.50	Unsuited Slope Stickiness; high plasticity index Rock fragments Sandiness	1.00 0.50 0.50 0.50	Poorly suited Slope Low strength Sandiness	1.00 0.50 0.50
902: Lumpkin gravelly medial sandy loam--	40	Unsuited Rock fragments Sandiness	1.00 0.50	Unsuited Rock fragments Sandiness Slope	1.00 0.50 0.50	Moderately suited Sandiness	0.50

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
903: Mudwash gravelly medial sandy loam--	45	Moderately suited Sandiness	0.50	Moderately suited Rock fragments Slope Sandiness	0.50 0.50 0.50	Poorly suited Low strength Sandiness	1.00 0.50
Timberisland very gravelly medial sandy loam-----	25	Moderately suited Rock fragments Sandiness	0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 0.75 0.50	Moderately suited Sandiness Slope	0.50 0.50
Lavatop gravelly medial fine sandy loam-----	20	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Well suited	
904: Lavatop gravelly medial fine sandy loam-----	20	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Moderately suited Slope	0.50
905: Lumpkin gravelly medial sandy loam--	30	Unsuited Rock fragments Sandiness Slope	1.00 0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 1.00 0.50	Poorly suited Slope Sandiness	1.00 0.50
906: Lumpkin gravelly medial sandy loam--	30	Unsuited Rock fragments Slope Sandiness	1.00 0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 1.00 0.50	Poorly suited Slope Sandiness	1.00 0.50
923: Powderhouse medial sandy loam-----	45	Moderately suited Rock fragments	0.50	Unsuited Rock fragments Slope	1.00 0.50	Well suited	
McNair medial coarse sandy loam--	25	Moderately suited Sandiness	0.50	Moderately suited Rock fragments Sandiness Slope	0.50 0.50 0.50	Poorly suited Low strength Sandiness	1.00 0.50
Greenwell medial sandy loam-----	20	Well suited		Moderately suited Rock fragments Slope	0.50 0.50	Well suited	

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
924:							
Powderhouse medial sandy loam-----	45	Moderately suited Rock fragments	0.50	Unsuited Rock fragments Slope	1.00 0.75	Moderately suited Slope	0.50
McNair medial coarse sandy loam--	25	Moderately suited Sandiness	0.50	Poorly suited Slope Rock fragments Sandiness	0.75 0.50 0.50	Poorly suited Low strength Sandiness Slope	1.00 0.50 0.50
Greenwell medial sandy loam-----	20	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Moderately suited Slope	0.50
925:							
Powderhouse medial sandy loam-----	45	Moderately suited Rock fragments Slope	0.50 0.50	Unsuited Slope Rock fragments	1.00 1.00	Poorly suited Slope	1.00
McNair medial coarse sandy loam--	25	Moderately suited Sandiness Slope	0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 0.50 0.50	Poorly suited Low strength Slope Sandiness	1.00 1.00 0.50
Greenwell medial sandy loam-----	20	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope	1.00
930:							
Timberisland very gravelly medial sandy loam-----	40	Moderately suited Rock fragments Sandiness	0.50 0.50	Poorly suited Rock fragments Sandiness Slope	0.75 0.50 0.50	Moderately suited Sandiness	0.50
931:							
Mudwash gravelly medial sandy loam--	25	Moderately suited Sandiness	0.50	Poorly suited Slope Rock fragments Sandiness	0.75 0.50 0.50	Poorly suited Low strength Sandiness Slope	1.00 0.50 0.50
Timberisland very gravelly medial sandy loam-----	15	Moderately suited Rock fragments Sandiness	0.50 0.50	Poorly suited Slope Rock fragments Sandiness	0.75 0.75 0.50	Moderately suited Sandiness Slope	0.50 0.50

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
932: Mudwash gravelly medial sandy loam--	35	Moderately suited Sandiness Slope	0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 0.50 0.50	Poorly suited Low strength Slope Sandiness	1.00 1.00 0.50
934: Mudwash gravelly medial sandy loam--	80	Moderately suited Sandiness	0.50	Moderately suited Rock fragments Sandiness Slope	0.50 0.50 0.50	Poorly suited Low strength Sandiness	1.00 0.50
940: Dejonah gravelly loam-----	50	Well suited		Moderately suited Rock fragments Slope	0.50 0.50	Well suited	
Stagpoint loam-----	30	Moderately suited Rock fragments	0.50	Moderately suited Rock fragments Slope	0.50 0.50	Well suited	
941: Dejonah gravelly loam-----	50	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Moderately suited Slope	0.50
Stagpoint loam-----	30	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.50	Moderately suited Slope	0.50
942: Stagpoint loam-----	50	Moderately suited Slope Rock fragments	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope	1.00
Dejonah gravelly loam-----	30	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope	1.00
948: Stagpoint loam-----	55	Moderately suited Slope Rock fragments	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope	1.00
Dejonah gravelly loam-----	35	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope	1.00
949: Rogerville taxadjunct fine sandy loam-----	80	Moderately suited Slope Rock fragments	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Poorly suited Slope	1.00

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
950: Powderhouse medial sandy loam-----	20	Moderately suited Rock fragments	0.50	Unsuited Rock fragments Slope	1.00 0.50	Well suited	
951: Powderhouse medial sandy loam-----	20	Moderately suited Rock fragments	0.50	Unsuited Rock fragments Slope	1.00 0.75	Moderately suited Slope	0.50
960: Surnuf gravelly loam, high elevation-----	85	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Stickiness; high plasticity index Rock fragments Slope	0.50 0.50 0.50	Well suited	
961: Surnuf gravelly loam, high elevation-----	85	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Slope Stickiness; high plasticity index Rock fragments	0.50 0.50 0.50	Well suited	
962: Surnuf gravelly loam, high elevation-----	85	Moderately suited Stickiness; high plasticity index	0.50	Poorly suited Slope Stickiness; high plasticity index Rock fragments	0.75 0.50 0.50	Moderately suited Slope	0.50
963: Surnuf gravelly loam, high elevation-----	85	Moderately suited Stickiness; high plasticity index Slope Rock fragments	0.50 0.50 0.50	Unsuited Slope Rock fragments Stickiness; high plasticity index	1.00 0.75 0.50	Poorly suited Slope	1.00

Table 11c.--Forestland Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. Only the soils for which site index productivity information is available are listed. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
165yu:					
Holland loam-----	40	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Hoda loam-----	25	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Hotaw loam-----	20	Poorly suited Slope	0.50	Poorly suited Slope	0.50
173yu:					
Hotaw loam-----	45	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Chawanakee gravelly sandy loam-----	20	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Holland loam-----	15	Poorly suited Slope	0.50	Poorly suited Slope	0.50
176yu:					
Jocal loam-----	80	Well suited		Well suited	
188yu:					
Mariposa taxadjunct gravelly loam-----	80	Poorly suited Slope	0.50	Poorly suited Restrictive layer Slope	0.50 0.50
189yu:					
Mariposa taxadjunct gravelly loam-----	80	Unsuited Slope	1.00	Unsuited Slope Restrictive layer	1.00 0.50
206:					
Islandbar sandy loam-----	60	Well suited		Well suited	
Chawanakee gravelly sandy loam-----	30	Well suited		Well suited	
207:					
Islandbar sandy loam-----	60	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Chawanakee gravelly sandy loam-----	30	Poorly suited Slope	0.50	Poorly suited Slope	0.50

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
208:					
Islandbar sandy loam-----	60	Unsuited Slope	1.00	Unsuited Slope	1.00
Chawanakee gravelly sandy loam-----	30	Unsuited Slope	1.00	Unsuited Slope	1.00
209:					
Islandbar sandy loam-----	60	Unsuited Slope	1.00	Unsuited Slope	1.00
Chawanakee gravelly sandy loam-----	30	Unsuited Slope	1.00	Unsuited Slope	1.00
210:					
Featherfalls sandy loam-----	50	Well suited		Well suited	
Islandbar sandy loam-----	35	Well suited		Well suited	
211:					
Featherfalls sandy loam-----	55	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Islandbar sandy loam-----	35	Poorly suited Slope	0.50	Poorly suited Slope	0.50
212:					
Featherfalls sandy loam-----	55	Unsuited Slope	1.00	Unsuited Slope	1.00
Islandbar sandy loam-----	35	Unsuited Slope	1.00	Unsuited Slope	1.00
213:					
Featherfalls sandy loam-----	45	Unsuited Slope	1.00	Unsuited Slope	1.00
Islandbar sandy loam-----	35	Unsuited Slope	1.00	Unsuited Slope	1.00
214:					
Crystalhill gravelly coarse sandy loam-----	35	Well suited		Well suited	

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
214:					
Oregongulch gravelly sandy loam	20	Well suited		Well suited	
Craigsaddle coarse sandy loam-----	20	Well suited		Well suited	
215:					
Crystalhill gravelly coarse sandy loam-----	35	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Oregongulch gravelly sandy loam	20	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Craigsaddle coarse sandy loam-----	20	Poorly suited Slope	0.50	Poorly suited Slope	0.50
216:					
Crystalhill gravelly coarse sandy loam-----	35	Unsuited Slope	1.00	Unsuited Slope	1.00
Oregongulch gravelly sandy loam	20	Unsuited Slope	1.00	Unsuited Slope	1.00
Craigsaddle coarse sandy loam-----	20	Unsuited Slope	1.00	Unsuited Slope	1.00
217:					
Crystalhill gravelly coarse sandy loam-----	35	Unsuited Slope	1.00	Unsuited Slope	1.00
Oregongulch gravelly sandy loam	20	Unsuited Slope	1.00	Unsuited Slope	1.00
Craigsaddle coarse sandy loam-----	20	Unsuited Slope	1.00	Unsuited Slope	1.00
218:					
Chawanakee gravelly sandy loam-----	15	Poorly suited Slope	0.50	Poorly suited Slope	0.50
219:					
Chawanakee gravelly sandy loam-----	15	Unsuited Slope	1.00	Unsuited Slope	1.00

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
221yu: Sites loam-----	85	Well suited		Well suited	
222yu: Sites loam-----	85	Well suited		Well suited	
225yu: Sites gravelly loam, bedrock substratum-----	80	Well suited		Well suited	
226yu: Sites gravelly loam, bedrock substratum-----	80	Well suited		Well suited	
227yu: Sites gravelly loam, bedrock substratum-----	80	Poorly suited Slope	0.50	Poorly suited Slope	0.50
242yu: Surnuf loam-----	80	Well suited		Well suited	
243yu: Surnuf loam-----	80	Poorly suited Slope	0.50	Poorly suited Slope	0.50
244yu: Surnuf loam-----	80	Unsuited Slope	1.00	Unsuited Slope	1.00
245: Surnuf loam-----	80	Unsuited Slope	1.00	Unsuited Slope	1.00
252yu: Woodleaf gravelly loam-----	80	Poorly suited Rock fragments	0.50	Poorly suited Restrictive layer	0.50
253yu: Woodleaf gravelly loam-----	80	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Restrictive layer	0.50 0.50
561: Bigridge loam-----	50	Well suited		Well suited	
562: Bigridge loam-----	50	Poorly suited Slope	0.50	Poorly suited Slope	0.50
563: Bigridge loam-----	50	Unsuited Slope	1.00	Unsuited Slope	1.00

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
564: Bigridge loam-----	50	Unsuited Slope	1.00	Unsuited Slope	1.00
580: Surnuf taxadjunct loam-----	40	Poorly suited Stickiness; high plasticity index	0.50	Well suited	
Griffgulch very gravelly silt loam	25	Poorly suited Rock fragments	0.50	Well suited	
581: Surnuf taxadjunct loam-----	65	Poorly suited Slope Stickiness; high plasticity index	0.50 0.50	Poorly suited Slope	0.50
Griffgulch very gravelly silt loam	20	Poorly suited Rock fragments Slope	0.50 0.50	Poorly suited Slope	0.50
582: Surnuf taxadjunct loam-----	50	Unsuited Slope Stickiness; high plasticity index	1.00 0.50	Unsuited Slope	1.00
Griffgulch very gravelly silt loam	35	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope	1.00
583: Surnuf taxadjunct loam-----	50	Unsuited Slope Stickiness; high plasticity index	1.00 0.50	Unsuited Slope	1.00
Griffgulch very gravelly silt loam	35	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope	1.00
629: Slideland gravelly loam-----	80	Well suited		Well suited	
630: Slideland gravelly loam-----	80	Poorly suited Slope	0.50	Poorly suited Slope	0.50

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
631: Slideland gravelly loam-----	80	Unsuited Slope	1.00	Unsuited Slope	1.00
650: Schott very gravelly loam-----	65	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
651: Schott very gravelly loam-----	65	Poorly suited Rock fragments Slope	0.50 0.50	Poorly suited Rock fragments Slope	0.50 0.50
652: Schott very gravelly loam-----	65	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Rock fragments	1.00 0.50
657: Bonneyridge sandy loam-----	35	Well suited		Well suited	
Chawanakee gravelly sandy loam-----	30	Well suited		Well suited	
658: Bonneyridge sandy loam-----	35	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Chawanakee gravelly sandy loam-----	30	Poorly suited Slope	0.50	Poorly suited Slope	0.50
659: Bonneyridge sandy loam-----	35	Unsuited Slope	1.00	Unsuited Slope	1.00
Chawanakee gravelly sandy loam-----	30	Unsuited Slope	1.00	Unsuited Slope	1.00
660: Bonneyridge sandy loam-----	30	Unsuited Slope	1.00	Unsuited Slope	1.00
Chawanakee gravelly sandy loam-----	30	Unsuited Slope	1.00	Unsuited Slope	1.00
665: Surnuf gravelly loam-----	40	Well suited		Well suited	

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
665: Bigridge loam-----	40	Well suited		Well suited	
666: Surnuf gravelly loam-----	40	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Bigridge loam-----	40	Poorly suited Slope	0.50	Poorly suited Slope	0.50
667: Surnuf gravelly loam-----	40	Unsuited Slope	1.00	Unsuited Slope	1.00
Bigridge loam-----	40	Unsuited Slope	1.00	Unsuited Slope	1.00
668: Surnuf gravelly loam-----	40	Unsuited Slope	1.00	Unsuited Slope	1.00
Bigridge loam-----	40	Unsuited Slope	1.00	Unsuited Slope	1.00
674: Chawanakee gravelly sandy loam-----	30	Unsuited Slope	1.00	Unsuited Slope	1.00
Bonneyridge sandy loam-----	30	Unsuited Slope	1.00	Unsuited Slope	1.00
700: Flumewall gravelly sandy loam-----	25	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Restrictive layer Rock fragments	1.00 1.00 0.50
701: Powellton gravelly loam-----	40	Unsuited Slope	1.00	Unsuited Slope	1.00
Obstruction gravelly sandy loam	30	Unsuited Slope	1.00	Unsuited Slope	1.00
702: Cerpone gravelly loam-----	50	Poorly suited Rock fragments	0.50	Well suited	

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
703: Cerpone gravelly loam-----	30	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope	0.50
704: Cerpone gravelly loam-----	15	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope	1.00
705: Cerpone gravelly loam-----	15	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope	1.00
711: Dixmine very gravelly loam-----	45	Poorly suited Rock fragments	0.50	Well suited	
Toadtown loam-----	40	Well suited		Well suited	
712: Dixmine very gravelly loam-----	50	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope	0.50
Toadtown loam-----	40	Poorly suited Slope	0.50	Poorly suited Slope	0.50
713: Dixmine very gravelly loam-----	50	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope	1.00
Toadtown loam-----	35	Unsuited Slope	1.00	Unsuited Slope	1.00
714: Dixmine very gravelly loam-----	50	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope	1.00
Toadtown loam-----	35	Unsuited Slope	1.00	Unsuited Slope	1.00
715: Logtrain gravelly loam-----	40	Unsuited Slope	1.00	Unsuited Slope	1.00

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
715: Bottlehill very gravelly loam-----	30	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Restrictive layer	1.00 1.00
Walkermine very gravelly loam-----	20	Unsuited Slope Restrictive layer Rock fragments	1.00 1.00 0.50	Unsuited Slope Restrictive layer Rock fragments	1.00 1.00 0.50
716: Griffgulch very gravelly silt loam	40	Poorly suited Rock fragments	0.50	Well suited	
Surnuf gravelly loam-----	40	Well suited		Well suited	
717: Griffgulch very gravelly silt loam	40	Poorly suited Rock fragments Slope	0.50 0.50	Poorly suited Slope	0.50
Surnuf gravelly loam-----	40	Poorly suited Slope	0.50	Poorly suited Slope	0.50
718: Griffgulch very gravelly silt loam	35	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope	1.00
Surnuf gravelly loam-----	35	Unsuited Slope	1.00	Unsuited Slope	1.00
719: Griffgulch very gravelly silt loam	35	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope	1.00
Surnuf gravelly loam-----	30	Unsuited Slope	1.00	Unsuited Slope	1.00
721: Haploxerands, granitic till, medial sandy loam--	70	Unsuited Rock fragments	1.00	Poorly suited Rock fragments	0.50

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
722: Haploxerands, granitic till, medial sandy loam--	70	Unsuited Rock fragments Slope	1.00 0.50	Poorly suited Rock fragments Slope	0.50 0.50
723: Haploxerands, granitic till, medial sandy loam--	70	Unsuited Rock fragments Slope	1.00 1.00	Unsuited Slope Rock fragments	1.00 0.50
724: Haploxerands, volcanic till, cobbly medial sandy loam-----	75	Unsuited Rock fragments	1.00	Poorly suited Rock fragments	0.50
725: Haploxerands, volcanic till, cobbly medial sandy loam-----	75	Unsuited Rock fragments Slope	1.00 0.50	Poorly suited Rock fragments Slope	0.50 0.50
726: Haploxerands, volcanic till, cobbly medial sandy loam-----	75	Unsuited Rock fragments Slope	1.00 1.00	Unsuited Slope Rock fragments	1.00 0.50
727: Bonneyridge sandy loam-----	85	Well suited		Well suited	
728: Bonneyridge sandy loam-----	85	Poorly suited Slope	0.50	Poorly suited Slope	0.50
729: Bonneyridge sandy loam-----	85	Unsuited Slope	1.00	Unsuited Slope	1.00
730: Tusccoll gravelly loam-----	60	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope	1.00
Schott very gravelly loam-----	25	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Rock fragments	1.00 0.50

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
731: Tusccoll gravelly loam-----	50	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope	1.00
Schott very gravelly loam-----	35	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Rock fragments	1.00 0.50
732: Bonepile taxadjunct, duripan substratum	90	Unsuited Rock fragments	1.00	Unsuited Rock fragments	1.00
734: Haploxerands medial sandy loam-----	55	Poorly suited Slope	0.50	Poorly suited Slope	0.50
801: Obstruction gravelly sandy loam	70	Well suited		Well suited	
802: Obskel very gravelly sandy loam	40	Poorly suited Rock fragments Slope	0.50 0.50	Poorly suited Slope	0.50
Obstruction gravelly sandy loam	40	Poorly suited Slope	0.50	Poorly suited Slope	0.50
803: Obskel very gravelly sandy loam	40	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope	1.00
Obstruction gravelly sandy loam	40	Unsuited Slope	1.00	Unsuited Slope	1.00
804: Obskel very gravelly sandy loam	35	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope	1.00
Obstruction gravelly sandy loam	25	Unsuited Slope	1.00	Unsuited Slope	1.00
805: Bottlehill very gravelly loam-----	50	Poorly suited Rock fragments	0.50	Unsuited Restrictive layer	1.00

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
805: Walkermine very gravelly loam-----	20	Unsuited		Unsuited	
		Restrictive layer	1.00	Restrictive layer	1.00
		Rock fragments	0.50	Rock fragments	0.50
Logtrain gravelly loam-----	20	Well suited		Well suited	
806: Bottlehill very gravelly loam-----	50	Poorly suited		Unsuited	
		Rock fragments	0.50	Restrictive layer	1.00
		Slope	0.50	Slope	0.50
Logtrain gravelly loam-----	20	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
807: Bottlehill very gravelly loam-----	35	Unsuited		Unsuited	
		Slope	1.00	Restrictive layer	1.00
		Rock fragments	0.50	Slope	1.00
Logtrain gravelly loam-----	30	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
808: Bottlehill very gravelly loam-----	45	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Restrictive layer	1.00
Walkermine very gravelly loam-----	20	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Restrictive layer	1.00	Restrictive layer	1.00
		Rock fragments	0.50	Rock fragments	0.50
Logtrain gravelly loam-----	20	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
809: Walkermine very gravelly loam-----	45	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Restrictive layer	1.00	Restrictive layer	1.00
		Rock fragments	0.50	Rock fragments	0.50
Bottlehill very gravelly loam-----	15	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Restrictive layer	1.00
Logtrain gravelly loam-----	15	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
810: Dixmine very gravelly loam-----	35	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope	1.00
Mac gravelly loam---	25	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope	1.00
Spine very gravelly loam-----	25	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Restrictive layer Slope	1.00 1.00
811: Powellton gravelly loam-----	50	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Toadtown loam-----	40	Well suited		Well suited	
812: Powellton gravelly loam-----	50	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Toadtown loam-----	40	Poorly suited Slope	0.50	Poorly suited Slope	0.50
813: Powellton gravelly loam-----	50	Unsuited Slope	1.00	Unsuited Slope	1.00
Toadtown loam-----	40	Unsuited Slope	1.00	Unsuited Slope	1.00
814: Mountyana gravelly loam-----	80	Well suited		Well suited	
815: Mountyana gravelly loam-----	80	Poorly suited Slope	0.50	Poorly suited Slope	0.50
817: Lydon very gravelly medial coarse sandy loam-----	80	Poorly suited Rock fragments	0.50	Poorly suited Restrictive layer	0.50
818: Lydon very gravelly medial coarse sandy loam-----	75	Poorly suited Rock fragments Slope	0.50 0.50	Poorly suited Restrictive layer Slope	0.50 0.50

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
819: Lydon very gravelly medial coarse sandy loam-----	65	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Restrictive layer	1.00 0.50
820: Lydon very gravelly medial coarse sandy loam-----	60	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Restrictive layer	1.00 0.50
821: Lydon very gravelly medial coarse sandy loam-----	55	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Restrictive layer	1.00 0.50
822: Bonepile gravelly medial loam-----	85	Unsuited Rock fragments	1.00	Poorly suited Rock fragments	0.50
823: Bonepile gravelly medial loam-----	85	Unsuited Rock fragments Slope	1.00 0.50	Poorly suited Rock fragments Slope	0.50 0.50
824: Beecee very gravelly medial loam-----	85	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Rock fragments	1.00 0.50
825: Beecee very gravelly medial loam-----	60	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Rock fragments	1.00 0.50
Lydon very gravelly medial coarse sandy loam-----	20	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Restrictive layer	1.00 0.50
826: Redbone gravelly medial sandy loam--	80	Well suited		Well suited	
827: Redbone gravelly medial sandy loam--	80	Poorly suited Slope	0.50	Poorly suited Slope	0.50
829: Paradiso loam-----	80	Well suited		Well suited	

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
830: Paradiso loam-----	75	Poorly suited Slope	0.50	Poorly suited Slope	0.50
831: Surnuf gravelly loam-----	40	Well suited		Well suited	
Bigridge loam-----	30	Well suited		Well suited	
Spine very gravelly loam-----	15	Poorly suited Rock fragments	0.50	Unsuited Restrictive layer	1.00
832: Surnuf gravelly loam-----	40	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Bigridge loam-----	30	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Spine very gravelly loam-----	15	Poorly suited Rock fragments Slope	0.50 0.50	Unsuited Restrictive layer Slope	1.00 0.50
833: Surnuf gravelly loam-----	60	Unsuited Slope	1.00	Unsuited Slope	1.00
Bigridge loam-----	15	Unsuited Slope	1.00	Unsuited Slope	1.00
Spine very gravelly loam-----	15	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Restrictive layer Slope	1.00 1.00
834: Hietanen gravelly loam-----	50	Well suited		Well suited	
Mac gravelly loam---	30	Poorly suited Rock fragments	0.50	Well suited	
835: Hietanen gravelly loam-----	60	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Mac gravelly loam---	20	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope	0.50

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
836:					
Hietanen gravelly loam-----	50	Unsuited Slope	1.00	Unsuited Slope	1.00
Mac gravelly loam---	20	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope	1.00
Spine very gravelly loam-----	15	Poorly suited Slope Rock fragments	0.50 0.50	Unsuited Restrictive layer Slope	1.00 0.50
837:					
Hietanen gravelly loam-----	35	Unsuited Slope	1.00	Unsuited Slope	1.00
Spine very gravelly loam-----	25	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Restrictive layer	1.00 1.00
Mac gravelly loam---	20	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope	1.00
838:					
Dixmine very gravelly loam-----	35	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope	1.00
Spine very gravelly loam-----	25	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Restrictive layer	1.00 1.00
Mac gravelly loam---	25	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope	1.00
839:					
Chawanakee gravelly sandy loam-----	55	Well suited		Well suited	
Billscabin gravelly sandy loam-----	35	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
841:					
Billscabin gravelly sandy loam-----	50	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Rock fragments	1.00 0.50
Bonneyridge sandy loam-----	35	Unsuited Slope	1.00	Unsuited Slope	1.00

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
842: Billscabin gravelly sandy loam-----	60	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Rock fragments	1.00 0.50
Bonneyridge sandy loam-----	25	Unsuited Slope	1.00	Unsuited Slope	1.00
846: Bonneyridge sandy loam-----	60	Well suited		Well suited	
Lewisflat loam-----	20	Well suited		Well suited	
847: Bonneyridge sandy loam-----	60	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Lewisflat loam-----	20	Poorly suited Slope	0.50	Poorly suited Slope	0.50
848: Bonneyridge sandy loam-----	60	Unsuited Slope	1.00	Unsuited Slope	1.00
Lewisflat loam-----	20	Unsuited Slope	1.00	Unsuited Slope	1.00
850: Lewisflat loam-----	85	Well suited		Well suited	
851: Lewisflat loam-----	80	Poorly suited Slope	0.50	Poorly suited Slope	0.50
852: Lewisflat loam-----	75	Unsuited Slope	1.00	Unsuited Slope	1.00
860: Toadtown gravelly loam-----	60	Well suited		Well suited	
Powellton silt loam	20	Well suited		Well suited	
861: Toadtown gravelly loam-----	60	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Powellton silt loam	20	Poorly suited Slope	0.50	Poorly suited Slope	0.50

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
862:					
Toadtown gravelly loam-----	60	Unsuited Slope	1.00	Unsuited Slope	1.00
Powellton silt loam	20	Unsuited Slope	1.00	Unsuited Slope	1.00
863:					
Toadtown gravelly loam-----	60	Unsuited Slope	1.00	Unsuited Slope	1.00
Powellton silt loam	20	Unsuited Slope	1.00	Unsuited Slope	1.00
880:					
Sites taxadjunct gravelly loam-----	50	Poorly suited Rock fragments Stickiness; high plasticity index	0.50 0.50	Well suited	
Jocal taxadjunct gravelly loam-----	35	Well suited		Well suited	
881:					
Sites taxadjunct gravelly loam-----	50	Poorly suited Slope Rock fragments Stickiness; high plasticity index	0.50 0.50 0.50	Poorly suited Slope	0.50
Jocal taxadjunct gravelly loam-----	35	Poorly suited Slope	0.50	Poorly suited Slope	0.50
882:					
Sites taxadjunct gravelly loam-----	50	Unsuited Slope Rock fragments Stickiness; high plasticity index	1.00 0.50 0.50	Unsuited Slope	1.00
Jocal taxadjunct gravelly loam-----	35	Unsuited Slope	1.00	Unsuited Slope	1.00
883:					
Sites taxadjunct gravelly loam-----	50	Unsuited Slope Rock fragments Stickiness; high plasticity index	1.00 0.50 0.50	Unsuited Slope	1.00

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
883: Jocal taxadjunct gravelly loam-----	40	Unsuited Slope	1.00	Unsuited Slope	1.00
885: Rogerville silt loam	75	Well suited		Well suited	
886: Rogerville silt loam	80	Poorly suited Slope	0.50	Poorly suited Slope	0.50
892: Rogerville silt loam	85	Unsuited Slope	1.00	Unsuited Slope	1.00
893: Rogerville silt loam	85	Unsuited Slope	1.00	Unsuited Slope	1.00
902: Lumpkin gravelly medial sandy loam--	40	Unsuited Rock fragments	1.00	Unsuited Restrictive layer Rock fragments	1.00 1.00
903: Mudwash gravelly medial sandy loam--	45	Well suited		Well suited	
Timberisland very gravelly medial sandy loam-----	25	Poorly suited Rock fragments Slope	0.50 0.50	Unsuited Rock fragments Slope	1.00 0.50
Lavatop gravelly medial fine sandy loam-----	20	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments Restrictive layer	0.50 0.50
904: Lavatop gravelly medial fine sandy loam-----	20	Poorly suited Rock fragments Slope	0.50 0.50	Poorly suited Rock fragments Slope Restrictive layer	0.50 0.50 0.50
905: Lumpkin gravelly medial sandy loam--	30	Unsuited Slope Rock fragments	1.00 1.00	Unsuited Slope Restrictive layer Rock fragments	1.00 1.00 1.00

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
906: Lumpkin gravelly medial sandy loam--	30	Unsuited Slope Rock fragments	1.00 1.00	Unsuited Slope Restrictive layer Rock fragments	1.00 1.00 1.00
923: Powderhouse medial sandy loam-----	45	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
McNair medial coarse sandy loam--	25	Well suited		Well suited	
Greenwell medial sandy loam-----	20	Well suited		Well suited	
924: Powderhouse medial sandy loam-----	45	Poorly suited Rock fragments Slope	0.50 0.50	Poorly suited Rock fragments Slope	0.50 0.50
McNair medial coarse sandy loam--	25	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Greenwell medial sandy loam-----	20	Poorly suited Slope	0.50	Poorly suited Slope	0.50
925: Powderhouse medial sandy loam-----	45	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Rock fragments	1.00 0.50
McNair medial coarse sandy loam--	25	Unsuited Slope	1.00	Unsuited Slope	1.00
Greenwell medial sandy loam-----	20	Unsuited Slope	1.00	Unsuited Slope	1.00
930: Timberisland very gravelly medial sandy loam-----	40	Poorly suited Rock fragments	0.50	Unsuited Rock fragments	1.00
931: Mudwash gravelly medial sandy loam--	25	Poorly suited Slope	0.50	Poorly suited Slope	0.50

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
931: Timberisland very gravelly medial sandy loam-----	15	Poorly suited Rock fragments Slope	0.50 0.50	Unsuited Rock fragments Slope	1.00 0.50
932: Mudwash gravelly medial sandy loam--	35	Unsuited Slope	1.00	Unsuited Slope	1.00
934: Mudwash gravelly medial sandy loam--	80	Well suited		Well suited	
940: Dejonah gravelly loam-----	50	Well suited		Well suited	
Stagpoint loam-----	30	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
941: Dejonah gravelly loam-----	50	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Stagpoint loam-----	30	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
942: Stagpoint loam-----	50	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Rock fragments	1.00 0.50
Dejonah gravelly loam-----	30	Unsuited Slope	1.00	Unsuited Slope	1.00
948: Stagpoint loam-----	55	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Rock fragments	1.00 0.50
Dejonah gravelly loam-----	35	Unsuited Slope	1.00	Unsuited Slope	1.00
949: Rogerville taxadjunct fine sandy loam-----	80	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope	1.00

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
950: Powderhouse medial sandy loam-----	20	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
951: Powderhouse medial sandy loam-----	20	Poorly suited Rock fragments Slope	0.50 0.50	Poorly suited Rock fragments Slope	0.50 0.50
960: Surnuf gravelly loam, high elevation-----	85	Well suited		Well suited	
961: Surnuf gravelly loam, high elevation-----	85	Well suited		Well suited	
962: Surnuf gravelly loam, high elevation-----	85	Poorly suited Slope	0.50	Poorly suited Slope	0.50
963: Surnuf gravelly loam, high elevation-----	85	Unsuited Slope	1.00	Unsuited Slope	1.00

Table 11d.--Forestland Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. Only the soils for which site index productivity information is available are listed. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
165yu:							
Holland loam-----	40	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Hoda loam-----	25	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Hotaw loam-----	20	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
173yu:							
Hotaw loam-----	45	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Chawanakee gravelly sandy loam-----	20	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Holland loam-----	15	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
176yu:							
Jocal loam-----	80	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
188yu:							
Mariposa taxadjunct gravelly loam-----	80	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
189yu:							
Mariposa taxadjunct gravelly loam-----	80	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
206:							
Islandbar sandy loam-----	60	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Sandiness	0.50 0.50
Chawanakee gravelly sandy loam-----	30	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
207:							
Islandbar sandy loam-----	60	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness	1.00 0.50
Chawanakee gravelly sandy loam-----	30	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
208:							
Islandbar sandy loam-----	60	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness	1.00 0.50
Chawanakee gravelly sandy loam-----	30	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
209:							
Islandbar sandy loam-----	60	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness	1.00 0.50
Chawanakee gravelly sandy loam-----	30	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
210:							
Featherfalls sandy loam-----	50	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
Islandbar sandy loam-----	35	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Sandiness	0.50 0.50
211:							
Featherfalls sandy loam-----	55	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Islandbar sandy loam-----	35	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness	1.00 0.50
212:							
Featherfalls sandy loam-----	55	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Islandbar sandy loam-----	35	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness	1.00 0.50

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
213:							
Featherfalls sandy loam-----	45	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Islandbar sandy loam-----	35	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness	1.00 0.50
214:							
Crystalhill gravelly coarse sandy loam-----	35	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope	0.50
Oregongulch gravelly sandy loam	20	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Moderately suited Slope Sandiness	0.50 0.50
Craigsaddle coarse sandy loam-----	20	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
215:							
Crystalhill gravelly coarse sandy loam-----	35	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Oregongulch gravelly sandy loam	20	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness	1.00 0.50
Craigsaddle coarse sandy loam-----	20	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
216:							
Crystalhill gravelly coarse sandy loam-----	35	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Oregongulch gravelly sandy loam	20	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness	1.00 0.50
Craigsaddle coarse sandy loam-----	20	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
217: Crystalhill gravelly coarse sandy loam-----	35	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Oregongulch gravelly sandy loam	20	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness	1.00 0.50
Craigsaddle coarse sandy loam-----	20	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
218: Chawanakee gravelly sandy loam-----	15	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
219: Chawanakee gravelly sandy loam-----	15	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
221yu: Sites loam-----	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength Slope	0.50 0.50
222yu: Sites loam-----	85	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
225yu: Sites gravelly loam, bedrock substratum-----	80	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
226yu: Sites gravelly loam, bedrock substratum-----	80	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope	0.50
227yu: Sites gravelly loam, bedrock substratum-----	80	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
242yu: Surnuf loam-----	80	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
243yu: Surnuf loam-----	80	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
244yu: Surnuf loam-----	80	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
245: Surnuf loam-----	80	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
252yu: Woodleaf gravelly loam-----	80	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Low strength	0.50 0.50
253yu: Woodleaf gravelly loam-----	80	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
561: Bigridge loam-----	50	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Sandiness Low strength	0.50 0.50 0.50
562: Bigridge loam-----	50	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness Low strength	1.00 0.50 0.50
563: Bigridge loam-----	50	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness Low strength	1.00 0.50 0.50
564: Bigridge loam-----	50	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness Low strength	1.00 0.50 0.50
580: Surnuf taxadjunct loam-----	40	Slight		Slight		Moderately suited Slope Low strength	0.50 0.50
Griffgulch very gravelly silt loam	25	Slight		Slight		Moderately suited Slope	0.50

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
581: Surnuf taxadjunct loam-----	65	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Griffgulch very gravelly silt loam	20	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope	1.00
582: Surnuf taxadjunct loam-----	50	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Griffgulch very gravelly silt loam	35	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
583: Surnuf taxadjunct loam-----	50	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Griffgulch very gravelly silt loam	35	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
629: Slideland gravelly loam-----	80	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Low strength	0.50 0.50
630: Slideland gravelly loam-----	80	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope Low strength	1.00 0.50
631: Slideland gravelly loam-----	80	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
650: Schott very gravelly loam-----	65	Slight		Slight		Moderately suited Rock fragments Sandiness	0.50 0.50
651: Schott very gravelly loam-----	65	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Sandiness	1.00 0.50 0.50

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
652: Schott very gravelly loam-----	65	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Sandiness	1.00 0.50 0.50
657: Bonneyridge sandy loam-----	35	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
Chawanakee gravelly sandy loam-----	30	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
658: Bonneyridge sandy loam-----	35	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Chawanakee gravelly sandy loam-----	30	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
659: Bonneyridge sandy loam-----	35	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Chawanakee gravelly sandy loam-----	30	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
660: Bonneyridge sandy loam-----	30	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Chawanakee gravelly sandy loam-----	30	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
665: Surnuf gravelly loam-----	40	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Low strength	0.50 0.50
Bigridge loam-----	40	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Sandiness Low strength	0.50 0.50 0.50
666: Surnuf gravelly loam-----	40	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
666: Bigridge loam-----	40	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness Low strength	1.00 0.50 0.50
667: Surnuf gravelly loam-----	40	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Bigridge loam-----	40	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness Low strength	1.00 0.50 0.50
668: Surnuf gravelly loam-----	40	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Bigridge loam-----	40	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness Low strength	1.00 0.50 0.50
674: Chawanakee gravelly sandy loam-----	30	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Bonneyridge sandy loam-----	30	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
700: Flumewall gravelly sandy loam-----	25	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
701: Powellton gravelly loam-----	40	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Obstruction gravelly sandy loam	30	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 1.00
702: Cerpone gravelly loam-----	50	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Low strength	0.50 0.50

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
703: Cerpone gravelly loam-----	30	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
704: Cerpone gravelly loam-----	15	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
705: Cerpone gravelly loam-----	15	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
711: Dixmine very gravelly loam-----	45	Slight		Slight		Moderately suited Slope	0.50
Toadtown loam-----	40	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Low strength	0.50 0.50
712: Dixmine very gravelly loam-----	50	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope	1.00
Toadtown loam-----	40	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
713: Dixmine very gravelly loam-----	50	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Toadtown loam-----	35	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
714: Dixmine very gravelly loam-----	50	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Toadtown loam-----	35	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
715: Logtrain gravelly loam-----	40	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
715: Bottlehill very gravelly loam-----	30	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Walkermine very gravelly loam-----	20	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
716: Griffgulch very gravelly silt loam	40	Slight		Slight		Moderately suited Slope	0.50
Surnuf gravelly loam-----	40	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Low strength	0.50 0.50
717: Griffgulch very gravelly silt loam	40	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope	1.00
Surnuf gravelly loam-----	40	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
718: Griffgulch very gravelly silt loam	35	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Surnuf gravelly loam-----	35	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
719: Griffgulch very gravelly silt loam	35	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Surnuf gravelly loam-----	30	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
721: Haploxerands, granitic till, medial sandy loam--	70	Slight		Moderate Slope/erodibility	0.50	Poorly suited Rock fragments Slope	1.00 1.00

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
722: Haploxerands, granitic till, medial sandy loam--	70	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope	1.00 1.00
723: Haploxerands, granitic till, medial sandy loam--	70	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope	1.00 1.00
724: Haploxerands, volcanic till, cobble medial sandy loam-----	75	Slight		Moderate Slope/erodibility	0.50	Poorly suited Rock fragments Slope	1.00 0.50
725: Haploxerands, volcanic till, cobble medial sandy loam-----	75	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope	1.00 1.00
726: Haploxerands, volcanic till, cobble medial sandy loam-----	75	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope	1.00 1.00
727: Bonneyridge sandy loam-----	85	Slight		Moderate Slope/erodibility	0.50	Well suited	
728: Bonneyridge sandy loam-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
729: Bonneyridge sandy loam-----	85	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
730: Tussock gravelly loam-----	60	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Low strength	1.00 0.50 0.50

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
730: Schott very gravelly loam-----	25	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Sandiness	1.00 0.50 0.50
731: Tusccoll gravelly loam-----	50	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Low strength	1.00 0.50 0.50
Schott very gravelly loam-----	35	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Sandiness	1.00 0.50 0.50
732: Bonepile taxadjunct, duripan substratum	90	Slight		Slight		Poorly suited Rock fragments	1.00
734: Haploxerands medial sandy loam-----	55	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope	1.00
801: Obstruction gravelly sandy loam	70	Slight		Moderate Slope/erodibility	0.50	Poorly suited Low strength Slope	1.00 0.50
802: Obskel very gravelly sandy loam	40	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope	1.00
Obstruction gravelly sandy loam	40	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 1.00
803: Obskel very gravelly sandy loam	40	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Obstruction gravelly sandy loam	40	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 1.00

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
804:							
Obskel very gravelly sandy loam	35	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Obstruction gravelly sandy loam	25	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 1.00
805:							
Bottlehill very gravelly loam-----	50	Slight		Slight		Moderately suited Slope	0.50
Walkermine very gravelly loam-----	20	Slight		Moderate Slope/erodibility	0.50	Poorly suited Slope Rock fragments	1.00 0.50
Logtrain gravelly loam-----	20	Slight		Slight		Moderately suited Slope	0.50
806:							
Bottlehill very gravelly loam-----	50	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope	1.00
Logtrain gravelly loam-----	20	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope	1.00
807:							
Bottlehill very gravelly loam-----	35	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Logtrain gravelly loam-----	30	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
808:							
Bottlehill very gravelly loam-----	45	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Walkermine very gravelly loam-----	20	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
Logtrain gravelly loam-----	20	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
809: Walkermine very gravelly loam-----	45	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
Bottlehill very gravelly loam-----	15	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Logtrain gravelly loam-----	15	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
810: Dixmine very gravelly loam-----	35	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Mac gravelly loam---	25	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Spine very gravelly loam-----	25	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
811: Powellton gravelly loam-----	50	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope Low strength	1.00 0.50
Toadtown loam-----	40	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Low strength	0.50 0.50
812: Powellton gravelly loam-----	50	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Toadtown loam-----	40	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
813: Powellton gravelly loam-----	50	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Toadtown loam-----	40	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
814: Mountyana gravelly loam-----	80	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Low strength	0.50 0.50
815: Mountyana gravelly loam-----	80	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope Low strength	1.00 0.50
817: Lydon very gravelly medial coarse sandy loam-----	80	Slight		Slight		Well suited	
818: Lydon very gravelly medial coarse sandy loam-----	75	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope	1.00
819: Lydon very gravelly medial coarse sandy loam-----	65	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
820: Lydon very gravelly medial coarse sandy loam-----	60	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
821: Lydon very gravelly medial coarse sandy loam-----	55	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
822: Bonepile gravelly medial loam-----	85	Slight		Moderate Slope/erodibility	0.50	Poorly suited Rock fragments	1.00
823: Bonepile gravelly medial loam-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 1.00
824: Beecee very gravelly medial loam-----	85	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
825: Beecee very gravelly medial loam-----	60	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
825: Lydon very gravelly medial coarse sandy loam-----	20	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
826: Redbone gravelly medial sandy loam--	80	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
827: Redbone gravelly medial sandy loam--	80	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
829: Paradiso loam-----	80	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
830: Paradiso loam-----	75	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
831: Surnuf gravelly loam-----	40	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Low strength	0.50 0.50
Bigridge loam-----	30	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Sandiness Low strength	0.50 0.50 0.50
Spine very gravelly loam-----	15	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
832: Surnuf gravelly loam-----	40	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Bigridge loam-----	30	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness Low strength	1.00 0.50 0.50
Spine very gravelly loam-----	15	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
833: Surnuf gravelly loam-----	60	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
833: Bigridge loam-----	15	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness Low strength	1.00 0.50 0.50
Spine very gravelly loam-----	15	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
834: Hietanen gravelly loam-----	50	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
Mac gravelly loam---	30	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
835: Hietanen gravelly loam-----	60	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Mac gravelly loam---	20	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope	1.00
836: Hietanen gravelly loam-----	50	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Mac gravelly loam---	20	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Spine very gravelly loam-----	15	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
837: Hietanen gravelly loam-----	35	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Spine very gravelly loam-----	25	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Mac gravelly loam---	20	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
838: Dixmine very gravelly loam-----	35	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
838: Spine very gravelly loam-----	25	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Mac gravelly loam---	25	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
839: Chawanakee gravelly sandy loam-----	55	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Moderately suited Slope	0.50
Billscabin gravelly sandy loam-----	35	Slight		Severe Slope/erodibility	0.95	Moderately suited Rock fragments Slope Sandiness	0.50 0.50 0.50
841: Billscabin gravelly sandy loam-----	50	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Sandiness	1.00 0.50 0.50
Bonneyridge sandy loam-----	35	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
842: Billscabin gravelly sandy loam-----	60	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Sandiness	1.00 0.50 0.50
Bonneyridge sandy loam-----	25	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
846: Bonneyridge sandy loam-----	60	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
Lewisflat loam-----	20	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Low strength	0.50 0.50
847: Bonneyridge sandy loam-----	60	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Lewisflat loam-----	20	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
848: Bonneyridge sandy loam-----	60	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Lewisflat loam-----	20	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
850: Lewisflat loam-----	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
851: Lewisflat loam-----	80	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
852: Lewisflat loam-----	75	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
860: Toadtown gravelly loam-----	60	Slight		Slight		Poorly suited Low strength Slope	1.00 0.50
Powellton silt loam	20	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Low strength	0.50 0.50
861: Toadtown gravelly loam-----	60	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope Low strength	1.00 1.00
Powellton silt loam	20	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
862: Toadtown gravelly loam-----	60	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 1.00
Powellton silt loam	20	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
863: Toadtown gravelly loam-----	60	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 1.00

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
863: Powellton silt loam	20	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
880: Sites taxadjunct gravelly loam-----	50	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
Jocal taxadjunct gravelly loam-----	35	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
881: Sites taxadjunct gravelly loam-----	50	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Jocal taxadjunct gravelly loam-----	35	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
882: Sites taxadjunct gravelly loam-----	50	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Jocal taxadjunct gravelly loam-----	35	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
883: Sites taxadjunct gravelly loam-----	50	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Jocal taxadjunct gravelly loam-----	40	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
885: Rogerville silt loam	75	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Sandiness Low strength	0.50 0.50 0.50
886: Rogerville silt loam	80	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness Low strength	1.00 0.50 0.50
892: Rogerville silt loam	85	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness Low strength	1.00 0.50 0.50

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
893: Rogerville silt loam	85	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness Low strength	1.00 0.50 0.50
902: Lumpkin gravelly medial sandy loam--	40	Slight		Moderate Slope/erodibility	0.50	Moderately suited Sandiness	0.50
903: Mudwash gravelly medial sandy loam--	45	Slight		Moderate Slope/erodibility	0.50	Poorly suited Low strength Slope Sandiness	1.00 0.50 0.50
Timberisland very gravelly medial sandy loam-----	25	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness	1.00 0.50
Lavatop gravelly medial fine sandy loam-----	20	Slight		Slight		Moderately suited Slope	0.50
904: Lavatop gravelly medial fine sandy loam-----	20	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope	1.00
905: Lumpkin gravelly medial sandy loam--	30	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness	1.00 0.50
906: Lumpkin gravelly medial sandy loam--	30	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness	1.00 0.50
923: Powderhouse medial sandy loam-----	45	Slight		Slight		Moderately suited Slope	0.50
McNair medial coarse sandy loam--	25	Slight		Moderate Slope/erodibility	0.50	Poorly suited Low strength Slope Sandiness	1.00 0.50 0.50

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
923: Greenwell medial sandy loam-----	20	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
924: Powderhouse medial sandy loam-----	45	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope	1.00
McNair medial coarse sandy loam--	25	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength Sandiness	1.00 1.00 0.50
Greenwell medial sandy loam-----	20	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
925: Powderhouse medial sandy loam-----	45	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
McNair medial coarse sandy loam--	25	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength Sandiness	1.00 1.00 0.50
Greenwell medial sandy loam-----	20	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
930: Timberisland very gravelly medial sandy loam-----	40	Slight		Slight		Moderately suited Slope Sandiness	0.50 0.50
931: Mudwash gravelly medial sandy loam--	25	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength Sandiness	1.00 1.00 0.50
Timberisland very gravelly medial sandy loam-----	15	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope Sandiness	1.00 0.50

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
932: Mudwash gravelly medial sandy loam--	35	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength Sandiness	1.00 1.00 0.50
934: Mudwash gravelly medial sandy loam--	80	Slight		Moderate Slope/erodibility	0.50	Poorly suited Low strength Slope Sandiness	1.00 0.50 0.50
940: Dejonah gravelly loam-----	50	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
Stagpoint loam-----	30	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
941: Dejonah gravelly loam-----	50	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Stagpoint loam-----	30	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
942: Stagpoint loam-----	50	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Dejonah gravelly loam-----	30	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
948: Stagpoint loam-----	55	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Dejonah gravelly loam-----	35	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
949: Rogerville taxadjunct fine sandy loam-----	80	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Landslides	1.00 0.50
950: Powderhouse medial sandy loam-----	20	Slight		Slight		Moderately suited Slope	0.50

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
951: Powderhouse medial sandy loam-----	20	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope	1.00
960: Surnuf gravelly loam, high elevation-----	85	Slight		Moderate Slope/erodibility	0.50	Well suited	
961: Surnuf gravelly loam, high elevation-----	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
962: Surnuf gravelly loam, high elevation-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
963: Surnuf gravelly loam, high elevation-----	85	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
108: Igo-----	---	---	Soft chess (BRHOH) Medusahead (TACA8) Hairypink (PEDU2) Red brome (BRRU2) Filaree (ERODI) Navarretia (NAVAR) Brodiaaea (BRODI) Wild oat (AVFA) Fremont's tidytips (LAFR2) Butter-n-eggs (TRERE2) Goldfields (LASTH) Yellow starthistle (CESO3) Pepperweed (LEPID)	--- --- --- --- --- --- --- --- --- --- --- --- ---
Anita-----	---	---	Italian ryegrass (LOPEM2) Medusahead (TACA8) Soft chess (BRHOH) Mouse barley (HOMAG) Ripgut brome (BRDI3) Red brome (BRRU2) Coyote thistle (ERCA33) Soft blow wives (ACMO2) Navarretia (NAVAR) Brodiaaea (BRODI) White meadowfoam (LIALA)	--- --- --- --- --- --- --- --- --- --- ---
109, 110. Bosquejo				
111yu: Auburn-----	---	---	Burclover (MEHI) Clover (TRIFO) Filaree (ERODI) Foxtail fescue (FEME) Mouse barley (HOMAG) Red brome (BRRU2) Ripgut brome (BRDI3) Soft chess (BRHOH) Wild oat (AVFA)	5 5 5 5 5 5 5 30 15
Sobrante-----	---	---	Mediterranean barley (HOMUL) Blue oak (QUDO) Burclover (MEHI) Clover (TRIFO) Filaree (ERODI) Foxtail fescue (FEME) Interior live oak (QUWI2) Mouse barley (HOMAG) Nitgrass (GAVE3) Ripgut brome (BRDI3) Soft chess (BRHOH) Wild oat (AVFA)	5 5 10 5 5 5 5 5 5 10 25 10

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
119: Urban land.				
119yu: Auburn-----	---	---	Blue oak (QUDO) Buckbrush (CECU) Burclover (MEHI) Clover (TRIFO) Filaree (ERODI) Foothill pine (PISA2) Foxtail fescue (FEME) Interior live oak (QUWI2) Mouse barley (HOMAG) Red brome (BRRU2) Ripgut brome (BRDI3) Soft chess (BRHOH) Whiteleaf manzanita (ARMA) Wild oat (AVFA) Pacific poison oak (TODI)	5 5 10 5 5 1 5 5 5 5 5 25 5 10 ---
Sobrante-----	---	---	Blue oak (QUDO) Buckbrush (CECU) Clover (TRIFO) Filaree (ERODI) Foothill pine (PISA2) Interior live oak (QUWI2) Ripgut brome (BRDI3) Silver hairgrass (AICA) Soft chess (BRHOH) Wild oat (AVFA) Pacific poison oak (TODI) Hedgehog dogtail (CYEC)	5 5 5 5 1 5 10 5 25 10 --- ---
Rock outcrop.				
120. Gridley taxadjunct				
121: Boga.				
Loemstone.				
121su. Columbia				
125: Gridley taxadjunct-----	---	---	Orchardgrass (DAGL) Curly dock (RUCR) Mouse barley (HOMAG) Italian ryegrass (LOPEM2) Alameda County thistle (CIQU2)	--- --- --- --- ---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
125: Calciic Haploxerolls---	---	---	Orchardgrass (DAGL) Curly dock (RUCR) Mouse barley (HOMAG) Italian ryegrass (LOPEM2) Saltgrass (DISTI) Alameda County thistle (CIQU2)	--- --- --- --- --- ---
126. Liveoak				
127. Gridley taxadjunct				
130: Eastbiggs-----	---	---	Wild oat (AVFA) Vetch (VICIA) Filaree (ERODI) Soft chess (BRHOH) Ripgut brome (BRDI3) Red brome (BRRU2) Mouse barley (HOMAG) Clover (TRIFO) Butter-n-eggs (TRERE2) White brodiaea (TRHY3)	--- --- --- --- --- --- --- --- --- ---
133: Eastbiggs-----	---	---	Wild oat (AVFA) Vetch (VICIA) Filaree (ERODI) Soft chess (BRHOH) Ripgut brome (BRDI3) Red brome (BRRU2) Mouse barley (HOMAG) Clover (TRIFO) Butter-n-eggs (TRERE2) White brodiaea (TRHY3)	--- --- --- --- --- --- --- --- --- ---
Galt.				
136: Duric Xerarents, cut.				
Duric Xerarents, fill.				
Eastbiggs.				
138su. Liveoak				
139su: Liveoak taxadjunct.				
Galt taxadjunct.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
143su: Marcum.				
Gridley.				
149yu: Flanly-----	---	---	California buckthorn (FRCAC5)	5
			Blue oak (QUDO)	5
			Blue wildrye (ELGL)	5
			Buckbrush (CECU)	5
			Chokeberry (PHOTI)	5
			Foothill pine (PISA2)	1
			Interior live oak (QUWI2)	5
			Ripgut brome (BRDI3)	10
			Sticky whiteleaf	5
			manzanita (ARVI4)	
			Wild oat (AVFA)	15
			Pacific poison oak (TODI)	---
			Hedgehog dogtail (CYEC)	---
150: Columbia-----	California sycamore (PLRA)	---	Himalaya blackberry (RUDI2)	---
	Fremont cottonwood (POFR2)		Pacific poison oak (TODI)	---
	Valley oak (QULO)	---	Curly dock (RUCR)	---
	Black walnut (JUNI)	---	Italian ryegrass (LOPEM2)	---
			Johnsongrass (SOHA)	---
			California wild grape (VICA5)	---
			Carex (CAREX)	---
150su. Olashes				
151yu: Flanly-----	---	---	California buckthorn (FRCAC5)	5
			Blue oak (QUDO)	5
			Blue wildrye (ELGL)	5
			Buckbrush (CECU)	5
			Chokeberry (PHOTI)	5
			Foothill pine (PISA2)	1
			Interior live oak (QUWI2)	5
			Ripgut brome (BRDI3)	10
			Sticky whiteleaf	5
			manzanita (ARVI4)	
			Wild oat (AVFA)	15
			Pacific poison oak (TODI)	---
			Hedgehog dogtail (CYEC)	---
152: Gianella-----	Valley oak (QULO)	---	---	---
	Fremont cottonwood (POFR2)	---		
153: Gianella-----	Valley oak (QULO)	---	California wild grape (VICA5)	---
	Fremont cottonwood (POFR2)	---	California wildrose (ROCA2)	---
			Douglas sagewort (ARDO3)	---
			Coyote willow (SAEX)	---
			Pacific poison oak (TODI)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
154: Gianella-----	Valley oak (QULO) Fremont cottonwood (POFR2)	--- ---	California wild grape (VICA5) California wildrose (ROCA2) Douglas sagewort (ARDO3) Coyote willow (SAEX) Pacific poison oak (TODI)	--- --- --- --- ---
158: Gianella-----	Valley oak (QULO) Fremont cottonwood (POFR2) California sycamore (PLRA)	--- --- ---	Blackberry (RUBUS) Willow (SALIX) Pacific poison oak (TODI)	--- --- ---
160: Gianella-----	Valley oak (QULO) Fremont cottonwood (POFR2)	--- ---	---	---
161: Gianella-----	Valley oak (QULO) Fremont cottonwood (POFR2)	--- ---	---	---
162: Gianella-----	Valley oak (QULO) Fremont cottonwood (POFR2)	--- ---	---	---
163yu. Holillipah				
165yu: Holland-----	---	---	California black oak (QUKE) Blue wildrye (ELGL) Bluegrass (POA) Canyon live oak (QUCH2) Deerbrush (CEIN3) Fescue (FESTU) Manzanita (ARCTO3) Mountain brome (BRMA4) Mountain misery (CHFO) Western brackenfern (PTAQ)	--- --- --- --- --- --- --- --- --- ---
Hoda-----	---	---	California black oak (QUKE) Blue wildrye (ELGL) Bluegrass (POA) Canyon live oak (QUCH2) Deerbrush (CEIN3) Fescue (FESTU) Mountain misery (CHFO) Sticky whiteleaf manzanita (ARVI4) Western brackenfern (PTAQ)	10 5 5 5 5 5 15 10 5

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
165yu: Hotaw-----	---	---	California black oak (QUKE) Blue wildrye (ELGL) Bluegrass (POA) Buckbrush (CECU) Canyon live oak (QUCH2) Deerbrush (CEIN3) Fescue (FESTU) Mountain misery (CHFO) Sticky whiteleaf manzanita (ARVI4) Western brackenfern (PTAQ)	--- --- --- --- --- --- --- --- --- ---
173yu: Hotaw-----	---	---	California black oak (QUKE) Blue wildrye (ELGL) Bluegrass (POA) Buckbrush (CECU) Canyon live oak (QUCH2) Deerbrush (CEIN3) Fescue (FESTU) Mountain misery (CHFO) Sticky whiteleaf manzanita (ARVI4) Western brackenfern (PTAQ)	--- --- --- --- --- --- --- --- --- ---
Chawanakee-----	---	---	Buckbrush (CECU) Manzanita (ARCTO3) Mountain misery (CHFO)	--- --- ---
Holland-----	---	---	California black oak (QUKE) Blue wildrye (ELGL) Bluegrass (POA) Canyon live oak (QUCH2) Deerbrush (CEIN3) Fescue (FESTU) Manzanita (ARCTO3) Mountain brome (BRMA4) Mountain misery (CHFO) Western brackenfern (PTAQ)	--- --- --- --- --- --- --- --- --- ---
175: Farwell-----	---	---	Deergrass (MURI2) Meadow barley (HOBR2) Purple needlegrass (NAPU4) Soap plant (CHLOR3)	--- --- --- ---
176: Farwell-----	---	---	Deergrass (MURI2) Meadow barley (HOBR2) Purple needlegrass (NAPU4) Soap plant (CHLOR3)	--- --- --- ---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
179: Arbuckle-----	---	---	Mouse barley (HOMAG) Wild oat (AVFA) Soft chess (BRHOH) Ripgut brome (BRDI3) Italian ryegrass (LOPEM2) Filaree (ERODI) Yellow starthistle (CESO3) Brodiaaea (BRODI) Bluedicks (DICAC5) Checkerbloom (SIDAL)	--- --- --- --- --- --- --- --- ---
180: Dodgeland-----	---	---	Soft chess (BRHOH) Filaree (ERODI) Hayfield tarweed (HECOL3)	--- --- ---
181: Dodgeland-----	---	---	Fitch's spikeweed (HEFI) Italian ryegrass (LOPEM2) Cattail (TYPHA) Filaree (ERODI) Hardstem tule (SCACO4) Soft chess (BRHOH)	--- --- --- --- --- ---
188yu: Mariposa taxadjunct-----	---	---	California black oak (QUKE) Blue wildrye (ELGL) Bluegrass (POA) Canyon live oak (QUCH2) Fescue (FESTU) Mountain brome (BRMA4) Mountain misery (CHFO) Sticky whiteleaf manzanita (ARVI4) Tanoak (LIDE3)	--- --- --- --- --- --- --- --- --- ---
189: Esquon-----	---	---	Italian ryegrass (LOPEM2) Curly dock (RUCR) Spikerush (ELEOC)	--- --- ---
189yu: Mariposa taxadjunct-----	---	---	California black oak (QUKE) Blue wildrye (ELGL) Bluegrass (POA) Canyon live oak (QUCH2) Fescue (FESTU) Mountain brome (BRMA4) Mountain misery (CHFO) Sticky whiteleaf manzanita (ARVI4) Tanoak (LIDE3)	--- --- --- --- --- --- --- --- --- ---
196yu. Mildred				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
200: Parrott-----	Valley oak (QULO)	---	Beardless wildrye (LETR5) Blue elderberry (SANIC5) Coyotebrush (BAPI) Pacific poison oak (TODI)	--- --- --- ---
201: Parrott-----	Valley oak (QULO)	---	Beardless wildrye (LETR5) Blue elderberry (SANIC5) Coyotebrush (BAPI) Pacific poison oak (TODI)	--- --- --- ---
203. Kusalslough				
205: Parrott-----	Valley oak (QULO)	---	Beardless wildrye (LETR5) Blue elderberry (SANIC5) Coyotebrush (BAPI) Pacific poison oak (TODI)	--- --- --- ---
Vermet-----	Valley oak (QULO) California walnut (JUCA)	--- ---	Arnica (ARNIC) Beardless wildrye (LETR5) Bermudagrass (CYDA) Cattail (TYPHA) Cocklebur (XANTH2) Curly dock (RUCR) Rush (JUNCU) Coyotebrush (BAPI) Blue elderberry (SANIC5) California blackberry (RUUR) Pacific poison oak (TODI) California wild grape (VICA5)	--- --- --- --- --- --- --- --- --- --- --- ---
206: Islandbar-----	Ponderosa pine (PIPO) Incense cedar (CADE27) Canyon live oak (QUCH2) Tanoak (LIDE3) Douglas-fir (PSME) California black oak (QUKE) Pacific madrone (ARME)	50 17 15 5 5 5 3	Canyon live oak (QUCH2) Incense cedar (CADE27) California black oak (QUKE) Pacific poison oak (TODI) Whiteleaf manzanita (ARMA) Deerbrush (CEIN3) Toyon (HEAR5) Tanoak (LIDE3) Western thimbleberry (RUPA) Iris (IRIS)	15 5 5 --- 3 3 3 3 3 1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
206: Chawanakee-----	Ponderosa pine (PIPO)	37	Whiteleaf manzanita (ARMA)	21
	Sugar pine (PILA)	18	Canyon live oak (QUCH2)	18
	Incense cedar (CADE27)	15	Incense cedar (CADE27)	4
	Canyon live oak (QUCH2)	10	Interior live oak (QUWI2)	3
	California black oak (QUKE)	8	California black oak (QUKE)	2
	Douglas-fir (PSME)	8	Pacific poison oak (TODI)	---
	Pacific madrone (ARME)	2	Sugar pine (PILA)	2
	Interior live oak (QUWI2)	2	Deerbrush (CEIN3)	2
			California buckthorn (FRCAT2)	2
			California honeysuckle (LOHI2)	2
			Ponderosa pine (PIPO)	1
			Iris (IRIS)	1
207: Islandbar-----	Ponderosa pine (PIPO)	50	Canyon live oak (QUCH2)	15
	Incense cedar (CADE27)	17	Incense cedar (CADE27)	5
	Canyon live oak (QUCH2)	15	California black oak (QUKE)	5
	Tanoak (LIDE3)	5	Pacific poison oak (TODI)	---
	Douglas-fir (PSME)	5	Whiteleaf manzanita (ARMA)	3
	California black oak (QUKE)	5	Deerbrush (CEIN3)	3
	Pacific madrone (ARME)	3	Toyon (HEAR5)	3
			Tanoak (LIDE3)	3
			Western thimbleberry (RUPA)	3
			Iris (IRIS)	1
Chawanakee-----	Ponderosa pine (PIPO)	37	Whiteleaf manzanita (ARMA)	21
	Sugar pine (PILA)	18	Canyon live oak (QUCH2)	18
	Incense cedar (CADE27)	15	Incense cedar (CADE27)	4
	Canyon live oak (QUCH2)	10	Interior live oak (QUWI2)	3
	California black oak (QUKE)	8	California black oak (QUKE)	2
	Douglas-fir (PSME)	8	Pacific poison oak (TODI)	---
	Pacific madrone (ARME)	2	Sugar pine (PILA)	2
	Interior live oak (QUWI2)	2	Deerbrush (CEIN3)	2
			California buckthorn (FRCAT2)	2
			California honeysuckle (LOHI2)	2
			Ponderosa pine (PIPO)	1
			Iris (IRIS)	1
208: Islandbar-----	Ponderosa pine (PIPO)	50	Canyon live oak (QUCH2)	15
	Incense cedar (CADE27)	17	Incense cedar (CADE27)	5
	Canyon live oak (QUCH2)	15	California black oak (QUKE)	5
	Tanoak (LIDE3)	5	Pacific poison oak (TODI)	---
	Douglas-fir (PSME)	5	Whiteleaf manzanita (ARMA)	3
	California black oak (QUKE)	5	Deerbrush (CEIN3)	3
	Pacific madrone (ARME)	3	Toyon (HEAR5)	3
			Tanoak (LIDE3)	3
			Western thimbleberry (RUPA)	3
			Iris (IRIS)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
208:				
Chawanakee-----	Ponderosa pine (PIPO)	37	Whiteleaf manzanita (ARMA)	21
	Sugar pine (PILA)	18	Canyon live oak (QUCH2)	18
	Incense cedar (CADE27)	15	Incense cedar (CADE27)	4
	Canyon live oak (QUCH2)	10	Interior live oak (QUWI2)	3
	California black oak (QUKE)	8	California black oak (QUKE)	2
	Douglas-fir (PSME)	8	Pacific poison oak (TODI)	---
	Pacific madrone (ARME)	2	Sugar pine (PILA)	2
	Interior live oak (QUWI2)	2	Deerbrush (CEIN3)	2
			California buckthorn (FRCAT2)	2
			California honeysuckle (LOHI2)	2
			Ponderosa pine (PIPO)	1
			Iris (IRIS)	1
209:				
Islandbar-----	Ponderosa pine (PIPO)	50	Canyon live oak (QUCH2)	15
	Incense cedar (CADE27)	17	Incense cedar (CADE27)	5
	Canyon live oak (QUCH2)	15	California black oak (QUKE)	5
	Tanoak (LIDE3)	5	Pacific poison oak (TODI)	---
	Douglas-fir (PSME)	5	Whiteleaf manzanita (ARMA)	3
	California black oak (QUKE)	5	Deerbrush (CEIN3)	3
	Pacific madrone (ARME)	3	Toyon (HEAR5)	3
			Tanoak (LIDE3)	3
			Western thimbleberry (RUPA)	3
			Iris (IRIS)	1
Chawanakee-----	Ponderosa pine (PIPO)	37	Whiteleaf manzanita (ARMA)	21
	Sugar pine (PILA)	18	Canyon live oak (QUCH2)	18
	Incense cedar (CADE27)	15	Incense cedar (CADE27)	4
	Canyon live oak (QUCH2)	10	Interior live oak (QUWI2)	3
	California black oak (QUKE)	8	California black oak (QUKE)	2
	Douglas-fir (PSME)	8	Pacific poison oak (TODI)	---
	Pacific madrone (ARME)	2	Sugar pine (PILA)	2
	Interior live oak (QUWI2)	2	Deerbrush (CEIN3)	2
			California buckthorn (FRCAT2)	2
			California honeysuckle (LOHI2)	2
			Ponderosa pine (PIPO)	1
			Iris (IRIS)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
210:				
Featherfalls----	Douglas-fir (PSME)	31	California honeysuckle (LOHI2)	15
	Ponderosa pine (PIPO)	20	Tanoak (LIDE3)	8
	California black oak (QUKE)	18	Whiteleaf manzanita (ARMA)	7
	Incense cedar (CADE27)	11	Pacific madrone (ARME)	7
	Pacific madrone (ARME)	9	Pacific poison oak (TODI)	---
	Canyon live oak (QUCH2)	6	Incense cedar (CADE27)	6
	Tanoak (LIDE3)	4	California black oak (QUKE)	5
	Sugar pine (PILA)	1	Douglas-fir (PSME)	4
			Deerbrush (CEIN3)	2
			Pacific dogwood (CONU4)	2
			Toyon (HEAR5)	2
			Canyon live oak (QUCH2)	2
			Western brackenfern (PTAQ)	1
			Broadleaf starflower (TRBOL)	1
			Sierra gooseberry (RIRO)	1
	Islandbar-----	Ponderosa pine (PIPO)	37	Whiteleaf manzanita (ARMA)
Douglas-fir (PSME)		15	Incense cedar (CADE27)	10
California black oak (QUKE)		15	Deerbrush (CEIN3)	8
Pacific madrone (ARME)		13	Pacific poison oak (TODI)	---
Incense cedar (CADE27)		12	Toyon (HEAR5)	8
Canyon live oak (QUCH2)		5	California honeysuckle (LOHI2)	8
Bigleaf maple (ACMA3)		3	Pacific madrone (ARME)	3
			Douglas-fir (PSME)	3
			California torreyia (TOCA)	3
			Carex (CAREX)	1
			Canyon live oak (QUCH2)	1
		California black oak (QUKE)	1	
211:				
Featherfalls----	Douglas-fir (PSME)	31	California honeysuckle (LOHI2)	15
	Ponderosa pine (PIPO)	20	Tanoak (LIDE3)	8
	California black oak (QUKE)	18	Whiteleaf manzanita (ARMA)	7
	Incense cedar (CADE27)	11	Pacific madrone (ARME)	7
	Pacific madrone (ARME)	9	Pacific poison oak (TODI)	---
	Canyon live oak (QUCH2)	6	Incense cedar (CADE27)	6
	Tanoak (LIDE3)	4	California black oak (QUKE)	5
	Sugar pine (PILA)	1	Douglas-fir (PSME)	4
			Deerbrush (CEIN3)	2
			Pacific dogwood (CONU4)	2
			Toyon (HEAR5)	2
			Canyon live oak (QUCH2)	2
			Western brackenfern (PTAQ)	1
			Broadleaf starflower (TRBOL)	1
			Sierra gooseberry (RIRO)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
211:				
Islandbar-----	Ponderosa pine (PIPO)	37	Whiteleaf manzanita (ARMA)	16
	Douglas-fir (PSME)	15	Incense cedar (CADE27)	10
	California black oak (QUKE)	15	Deerbrush (CEIN3)	8
	Pacific madrone (ARME)	13	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	12	Toyon (HEAR5)	8
	Canyon live oak (QUCH2)	5	California honeysuckle (LOHI2)	8
	Bigleaf maple (ACMA3)	3	Pacific madrone (ARME)	3
			Douglas-fir (PSME)	3
			California torreyia (TOCA)	3
			Carex (CAREX)	1
			Canyon live oak (QUCH2)	1
			California black oak (QUKE)	1
212:				
Featherfalls----	Douglas-fir (PSME)	31	California honeysuckle (LOHI2)	15
	Ponderosa pine (PIPO)	20	Tanoak (LIDE3)	8
	California black oak (QUKE)	18	Whiteleaf manzanita (ARMA)	7
	Incense cedar (CADE27)	11	Pacific madrone (ARME)	7
	Pacific madrone (ARME)	9	Pacific poison oak (TODI)	---
	Canyon live oak (QUCH2)	6	Incense cedar (CADE27)	6
	Tanoak (LIDE3)	4	California black oak (QUKE)	5
	Sugar pine (PILA)	1	Douglas-fir (PSME)	4
			Deerbrush (CEIN3)	2
			Pacific dogwood (CONU4)	2
			Toyon (HEAR5)	2
			Canyon live oak (QUCH2)	2
			Western brackenfern (PTAQ)	1
			Broadleaf starflower (TRBOL)	1
			Sierra gooseberry (RIRO)	1
Islandbar-----	Ponderosa pine (PIPO)	37	Whiteleaf manzanita (ARMA)	16
	Douglas-fir (PSME)	15	Incense cedar (CADE27)	10
	California black oak (QUKE)	15	Deerbrush (CEIN3)	8
	Pacific madrone (ARME)	13	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	12	Toyon (HEAR5)	8
	Canyon live oak (QUCH2)	5	California honeysuckle (LOHI2)	8
	Bigleaf maple (ACMA3)	3	Pacific madrone (ARME)	3
			Douglas-fir (PSME)	3
			California torreyia (TOCA)	3
			Carex (CAREX)	1
			Canyon live oak (QUCH2)	1
			California black oak (QUKE)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
213:				
Featherfalls----	Douglas-fir (PSME)	31	California honeysuckle (LOHI2)	15
	Ponderosa pine (PIPO)	20	Tanoak (LIDE3)	8
	California black oak (QUKE)	18	Whiteleaf manzanita (ARMA)	7
	Incense cedar (CADE27)	11	Pacific madrone (ARME)	7
	Pacific madrone (ARME)	9	Pacific poison oak (TODI)	---
	Canyon live oak (QUCH2)	6	Incense cedar (CADE27)	6
	Tanoak (LIDE3)	4	California black oak (QUKE)	5
	Sugar pine (PILA)	1	Douglas-fir (PSME)	4
			Deerbrush (CEIN3)	2
			Pacific dogwood (CONU4)	2
			Toyon (HEAR5)	2
			Canyon live oak (QUCH2)	2
			Western brackenfern (PTAQ)	1
			Broadleaf starflower (TRBOL)	1
			Sierra gooseberry (RIRO)	1
Islandbar-----	Ponderosa pine (PIPO)	37	Whiteleaf manzanita (ARMA)	16
	Douglas-fir (PSME)	15	Incense cedar (CADE27)	10
	California black oak (QUKE)	15	Deerbrush (CEIN3)	8
	Pacific madrone (ARME)	13	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	12	Toyon (HEAR5)	8
	Canyon live oak (QUCH2)	5	California honeysuckle (LOHI2)	8
	Bigleaf maple (ACMA3)	3	Pacific madrone (ARME)	3
			Douglas-fir (PSME)	3
			California torreyia (TOCA)	3
			Carex (CAREX)	1
			Canyon live oak (QUCH2)	1
			California black oak (QUKE)	1
214:				
Crystalhill-----	Ponderosa pine (PIPO)	52	Whiteleaf manzanita (ARMA)	35
	Canyon live oak (QUCH2)	18	Toyon (HEAR5)	10
	California black oak (QUKE)	12	Deerbrush (CEIN3)	8
	Foothill pine (PISA2)	7	Pacific poison oak (TODI)	---
	Interior live oak (QUWI2)	5	Canyon live oak (QUCH2)	5
	Pacific madrone (ARME)	3	California black oak (QUKE)	5
	Incense cedar (CADE27)	3	Ponderosa pine (PIPO)	3
			Tall Oregon grape (MAAQ2)	3
			Pacific madrone (ARME)	1
			California honeysuckle (LOHI2)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
214:				
Oregongulch-----	Ponderosa pine (PIPO)	28	Canyon live oak (QUCH2)	14
	Canyon live oak (QUCH2)	18	Whiteleaf manzanita (ARMA)	13
	Interior live oak (QUWI2)	18	Pacific madrone (ARME)	12
	Pacific madrone (ARME)	12	Toyon (HEAR5)	7
	California black oak (QUKE)	12	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	7	Interior live oak (QUWI2)	7
	Foothill pine (PISA2)	5	California black oak (QUKE)	5
			Incense cedar (CADE27)	4
			California buckthorn (FRCAT2)	2
			California honeysuckle (LOHI2)	1
			Ponderosa pine (PIPO)	1
Craigsaddle-----	Ponderosa pine (PIPO)	24	Canyon live oak (QUCH2)	15
	Canyon live oak (QUCH2)	24	Whiteleaf manzanita (ARMA)	12
	Interior live oak (QUWI2)	14	Toyon (HEAR5)	8
	Pacific madrone (ARME)	10	Pacific poison oak (TODI)	---
	California black oak (QUKE)	10	Interior live oak (QUWI2)	8
	Incense cedar (CADE27)	9	Hedgehog dogtail (CYEC)	7
	Foothill pine (PISA2)	7	Wild oat (AVFA)	5
	Blue oak (QUDO)	2	Pacific madrone (ARME)	4
			Incense cedar (CADE27)	3
			California buckthorn (FRCAT2)	3
			Ponderosa pine (PIPO)	3
			Foothill pine (PISA2)	3
			Cheatgrass (BRTE)	3
			Flatspine stickweed (LAOCO)	---
			California honeysuckle (LOHI2)	2
			California black oak (QUKE)	1
Rock outcrop.				
215:				
Crystalhill-----	Ponderosa pine (PIPO)	52	Whiteleaf manzanita (ARMA)	35
	Canyon live oak (QUCH2)	18	Toyon (HEAR5)	10
	California black oak (QUKE)	12	Deerbrush (CEIN3)	8
	Foothill pine (PISA2)	7	Pacific poison oak (TODI)	---
	Interior live oak (QUWI2)	5	Canyon live oak (QUCH2)	5
	Pacific madrone (ARME)	3	California black oak (QUKE)	5
	Incense cedar (CADE27)	3	Ponderosa pine (PIPO)	3
			Tall Oregon grape (MAAQ2)	3
			Pacific madrone (ARME)	1
			California honeysuckle (LOHI2)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
215:				
Oregongulch-----	Ponderosa pine (PIPO)	28	Canyon live oak (QUCH2)	14
	Canyon live oak (QUCH2)	18	Whiteleaf manzanita (ARMA)	13
	Interior live oak (QUWI2)	18	Pacific madrone (ARME)	12
	Pacific madrone (ARME)	12	Toyon (HEAR5)	7
	California black oak (QUKE)	12	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	7	Interior live oak (QUWI2)	7
	Foothill pine (PISA2)	5	California black oak (QUKE)	5
			Incense cedar (CADE27)	4
			California buckthorn (FRCAT2)	2
			California honeysuckle (LOHI2)	1
			Ponderosa pine (PIPO)	1
Craigsaddle-----	Ponderosa pine (PIPO)	24	Canyon live oak (QUCH2)	15
	Canyon live oak (QUCH2)	24	Whiteleaf manzanita (ARMA)	12
	Interior live oak (QUWI2)	14	Toyon (HEAR5)	8
	Pacific madrone (ARME)	10	Pacific poison oak (TODI)	---
	California black oak (QUKE)	10	Interior live oak (QUWI2)	8
	Incense cedar (CADE27)	9	Hedgehog dogtail (CYEC)	7
	Foothill pine (PISA2)	7	Wild oat (AVFA)	5
	Blue oak (QUDO)	2	Pacific madrone (ARME)	4
			Incense cedar (CADE27)	3
			California buckthorn (FRCAT2)	3
			Ponderosa pine (PIPO)	3
			Foothill pine (PISA2)	3
			Cheatgrass (BRTE)	3
			Flatspine stickweed (LAOCO)	3
			California honeysuckle (LOHI2)	---
			California black oak (QUKE)	2
				1
Rock outcrop.				
216:				
Crystalhill-----	Ponderosa pine (PIPO)	52	Whiteleaf manzanita (ARMA)	35
	Canyon live oak (QUCH2)	18	Toyon (HEAR5)	10
	California black oak (QUKE)	12	Deerbrush (CEIN3)	8
	Foothill pine (PISA2)	7	Pacific poison oak (TODI)	---
	Interior live oak (QUWI2)	5	Canyon live oak (QUCH2)	5
	Pacific madrone (ARME)	3	California black oak (QUKE)	5
	Incense cedar (CADE27)	3	Ponderosa pine (PIPO)	3
			Tall Oregon grape (MAAQ2)	3
			Pacific madrone (ARME)	1
			California honeysuckle (LOHI2)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
216:				
Oregongulch-----	Ponderosa pine (PIPO)	28	Canyon live oak (QUCH2)	14
	Canyon live oak (QUCH2)	18	Whiteleaf manzanita (ARMA)	13
	Interior live oak (QUWI2)	18	Pacific madrone (ARME)	12
	Pacific madrone (ARME)	12	Toyon (HEAR5)	7
	California black oak (QUKE)	12	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	7	Interior live oak (QUWI2)	7
	Foothill pine (PISA2)	5	California black oak (QUKE)	5
			Incense cedar (CADE27)	4
			California buckthorn (FRCAT2)	2
			California honeysuckle (LOHI2)	1
			Ponderosa pine (PIPO)	1
Craigsaddle-----	Ponderosa pine (PIPO)	24	Canyon live oak (QUCH2)	15
	Canyon live oak (QUCH2)	24	Whiteleaf manzanita (ARMA)	12
	Interior live oak (QUWI2)	14	Toyon (HEAR5)	8
	Pacific madrone (ARME)	10	Pacific poison oak (TODI)	---
	California black oak (QUKE)	10	Interior live oak (QUWI2)	8
	Incense cedar (CADE27)	9	Hedgehog dogtail (CYEC)	7
	Foothill pine (PISA2)	7	Wild oat (AVFA)	5
	Blue oak (QUDO)	2	Pacific madrone (ARME)	4
			Incense cedar (CADE27)	3
			California buckthorn (FRCAT2)	3
			Ponderosa pine (PIPO)	3
			Foothill pine (PISA2)	3
			Cheatgrass (BRTE)	3
			Flatspine stickweed (LAOCO)	3
			California honeysuckle (LOHI2)	2
			California black oak (QUKE)	1
Rock outcrop.				
217:				
Crystalhill-----	Ponderosa pine (PIPO)	52	Whiteleaf manzanita (ARMA)	35
	Canyon live oak (QUCH2)	18	Toyon (HEAR5)	10
	California black oak (QUKE)	12	Deerbrush (CEIN3)	8
	Foothill pine (PISA2)	7	Pacific poison oak (TODI)	---
	Interior live oak (QUWI2)	5	Canyon live oak (QUCH2)	5
	Pacific madrone (ARME)	3	California black oak (QUKE)	5
	Incense cedar (CADE27)	3	Ponderosa pine (PIPO)	3
			Tall Oregon grape (MAAQ2)	3
			Pacific madrone (ARME)	1
			California honeysuckle (LOHI2)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
217:				
Oregongulch-----	Ponderosa pine (PIPO)	28	Canyon live oak (QUCH2)	14
	Canyon live oak (QUCH2)	18	Whiteleaf manzanita (ARMA)	13
	Interior live oak (QUWI2)	18	Pacific madrone (ARME)	12
	Pacific madrone (ARME)	12	Toyon (HEAR5)	7
	California black oak (QUKE)	12	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	7	Interior live oak (QUWI2)	7
	Foothill pine (PISA2)	5	California black oak (QUKE)	5
			Incense cedar (CADE27)	4
			California buckthorn (FRCAT2)	2
			California honeysuckle (LOHI2)	1
			Ponderosa pine (PIPO)	1
Craigsaddle-----	Ponderosa pine (PIPO)	24	Canyon live oak (QUCH2)	15
	Canyon live oak (QUCH2)	24	Whiteleaf manzanita (ARMA)	12
	Interior live oak (QUWI2)	14	Toyon (HEAR5)	8
	Pacific madrone (ARME)	10	Pacific poison oak (TODI)	---
	California black oak (QUKE)	10	Interior live oak (QUWI2)	8
	Incense cedar (CADE27)	9	Hedgehog dogtail (CYEC)	7
	Foothill pine (PISA2)	7	Wild oat (AVFA)	5
	Blue oak (QUDO)	2	Pacific madrone (ARME)	4
			Incense cedar (CADE27)	3
			California buckthorn (FRCAT2)	3
			Ponderosa pine (PIPO)	3
			Foothill pine (PISA2)	3
			Cheatgrass (BRTE)	3
			Flatspine stickweed (LAOCO)	3
			California honeysuckle (LOHI2)	2
			California black oak (QUKE)	1
Rock outcrop.				
218:				
Rock outcrop.				
Lithic				
Xerorthents----	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	California black oak (QUKE)	---	Whiteleaf manzanita (ARMA)	---
	Whiteleaf manzanita (ARMA)	---	California black oak (QUKE)	---
			Ponderosa pine (PIPO)	---
			Pacific poison oak (TODI)	---
			Sugar pine (PILA)	---
			Incense cedar (CADE27)	---
			Douglas-fir (PSME)	---
			Redbud (CERCI2)	---
			Pacific dogwood (CONU4)	---
			Sierra coffeeberry (FRRUR)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
218:				
Chawanakee-----	Ponderosa pine (PIPO)	37	Whiteleaf manzanita (ARMA)	21
	Sugar pine (PILA)	18	Canyon live oak (QUCH2)	18
	Incense cedar (CADE27)	15	Incense cedar (CADE27)	4
	Canyon live oak (QUCH2)	10	Interior live oak (QUWI2)	3
	California black oak (QUKE)	8	California black oak (QUKE)	2
	Douglas-fir (PSME)	8	Pacific poison oak (TODI)	---
	Pacific madrone (ARME)	2	Sugar pine (PILA)	2
	Interior live oak (QUWI2)	2	Deerbrush (CEIN3)	2
			California buckthorn (FRCAT2)	2
			California honeysuckle (LOHI2)	2
			Ponderosa pine (PIPO)	1
			Iris (IRIS)	1
219:				
Rock outcrop.				
Lithic				
Xerorthents----	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	California black oak (QUKE)	---	Whiteleaf manzanita (ARMA)	---
	Whiteleaf manzanita (ARMA)	---	California black oak (QUKE)	---
			Ponderosa pine (PIPO)	---
			Pacific poison oak (TODI)	---
			Sugar pine (PILA)	---
			Incense cedar (CADE27)	---
			Douglas-fir (PSME)	---
			Redbud (CERCI2)	---
			Pacific dogwood (CONU4)	---
			Sierra coffeeberry (FRRUR)	---
Chawanakee-----	Ponderosa pine (PIPO)	37	Whiteleaf manzanita (ARMA)	21
	Sugar pine (PILA)	18	Canyon live oak (QUCH2)	18
	Incense cedar (CADE27)	15	Incense cedar (CADE27)	4
	Canyon live oak (QUCH2)	10	Interior live oak (QUWI2)	3
	California black oak (QUKE)	8	California black oak (QUKE)	2
	Douglas-fir (PSME)	8	Pacific poison oak (TODI)	---
	Pacific madrone (ARME)	2	Sugar pine (PILA)	2
	Interior live oak (QUWI2)	2	Deerbrush (CEIN3)	2
			California buckthorn (FRCAT2)	2
			California honeysuckle (LOHI2)	2
			Ponderosa pine (PIPO)	1
			Iris (IRIS)	1
220:				
Esquon-----	---	---	Italian ryegrass (LOPEM2)	---
			Curly dock (RUCR)	---
			Spikerush (ELEOC)	---
Clear Lake.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
317: Thompsonflat----	Blue oak (QUDO) Interior live oak (QUWI2) Foothill pine (PISA2)	--- --- ---	Medusahead (TACA8) Soft chess (BRHOH) Wild oat (AVFA) Hedgehog dogtail (CYEC) Pacific poison oak (TODI) Clover (TRIFO) Ripgut brome (BRDI3) Buckbrush (CECU) Toyon (HEAR5) Whiteleaf manzanita (ARMA) Redbud (CERCI2)	--- --- --- --- --- --- --- --- --- ---
318: Thompsonflat----	---	---	Italian ryegrass (LOPEM2) Wild oat (AVFA) Soft chess (BRHOH) Red brome (BRRU2) Ripgut brome (BRDI3) Filaree (ERODI) Clover (TRIFO) Annual lupine (LUBI) Bluedicks (DICAC5) Fiddleneck (AMSIN)	--- --- --- --- --- --- --- --- --- ---
Oroville-----	---	---	Soft chess (BRHOH) Wild oat (AVFA) Medusahead (TACA8) Mediterranean barley (HOMUL) Filaree (ERODI) Red brome (BRRU2) Italian ryegrass (LOPEM2) Pepperweed (LEPID) Vinegarweed (TRLA4) Goldfields (LASTH) Butter-n-eggs (TRERE2) Bluedicks (DICAC5) White brodiaea (TRHY3) Cowbag clover (TRDE) Fremont's tidytips (LAFR2) Soft blow wives (ACMO2) Popcornflower (PLAGI) Yellow starthistle (CESO3) Coyote thistle (ERCA33)	--- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---
320: Vistarobles-----	---	---	Filaree (ERODI) Goldfields (LASTH) Hairgrass (DESCH) Soft blow wives (ACMO2) Soft chess (BRHOH)	--- --- --- --- ---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
330: Wilsoncreek-----	Valley oak (QULO)	---	Wild oat (AVFA) Italian ryegrass (LOPEM2) Curly dock (RUCR) Willow (SALIX) California wild grape (VICA5) Pacific poison oak (TODI) Valley oak (QULO) Johnsongrass (SOHA)	--- --- --- --- --- --- ---
Trainer-----	---	---	Italian ryegrass (LOPEM2) Wild oat (AVFA) Johnsongrass (SOHA) Valley oak (QULO) Pacific poison oak (TODI) Willow (SALIX) Curly dock (RUCR) California wild grape (VICA5)	--- --- --- --- --- --- --- ---
331: Thompsonflat----	Blue oak (QUDO) Interior live oak (QUWI2) Foothill pine (PISA2)	--- --- ---	Medusahead (TACA8) Soft chess (BRHOH) Wild oat (AVFA) Hedgehog dogtail (CYEC) Pacific poison oak (TODI) Clover (TRIFO) Ripgut brome (BRDI3) Buckbrush (CECU) Toyon (HEAR5) Whiteleaf manzanita (ARMA) Redbud (CERCI2)	--- --- --- --- --- --- --- --- --- --- ---
335. Galt				
336: Galt-----	---	---	Italian ryegrass (LOPEM2) Medusahead (TACA8) Soft chess (BRHOH) Mouse barley (HOMAG) Ripgut brome (BRDI3) Red brome (BRRU2) Coyote thistle (ERCA33) Soft blow wives (ACMO2) Clover (TRIFO) Filaree (ERODI) Navarretia (NAVAR) Brodiaea (BRODI) Spikerush (ELEOC) Hairgrass (DESCH) Wild onion (ALLIU) Hayfield tarweed (HECOL3) White meadowfoam (LIALA)	--- --- --- --- --- --- --- --- --- --- --- --- --- --- ---
337. Galt				
338: Oxyaquic Xerofluvents---	---	---	Mouse barley (HOMAG) Willow (SALIX)	--- ---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
339: Oxyaquic Xerofluvents---	---	---	Willow (SALIX) Valley oak (QULO)	--- ---
340: Rock outcrop. Thermalrocks----	---	---	Silver hairgrass (AICA) Sierra mock stonecrop (SEPU4) Hansen's spikemoss (SEHA2) Soft chess (BRHOH) Filaree (ERODI) Red brome (BRRU2) Medusahead (TACA8) Fiddleneck (AMSIN) Lupine (LUPIN) Mullein (VERBA) Buckwheat (ERIOG) Nitgrass (GAVE3) Vinegarweed (TRLA4) Brodiaaea (BRODI) Mariposa lily (CALOC)	--- --- --- --- --- --- --- --- --- --- --- --- --- --- ---
Campbellhills---	---	---	Filaree (ERODI) Soft chess (BRHOH) Red brome (BRRU2) Wild oat (AVFA) Italian ryegrass (LOPEM2) Medusahead (TACA8) Mouse barley (HOMAG) Fiddleneck (AMSIN) Mariposa lily (CALOC) Bluedicks (DICAC5) Monkeyflower (MIMUL) Lupine (LUPIN) Vetch (VICIA) Rose clover (TRHI4)	--- --- --- --- --- --- --- --- --- --- --- --- --- ---
341: Elsely-----	---	---	Soft chess (BRHOH) Filaree (ERODI) Hedgehog dogtail (CYEC) Ripgut brome (BRDI3) Wild oat (AVFA) Clover (TRIFO)	--- --- --- --- --- ---
Beatsonhollow---	---	---	Soft chess (BRHOH) Medusahead (TACA8) Filaree (ERODI) Rattlesnake brome (BRBR5) Brodiaaea (BRODI) Lupine (LUPIN) Vinegarweed (TRLA4)	--- --- --- --- --- --- ---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
341: Campbellhills---	---	---	Filaree (ERODI) Soft chess (BRHOH) Red brome (BRRU2) Wild oat (AVFA) Italian ryegrass (LOPEM2) Medusahead (TACA8) Mouse barley (HOMAG) Fiddleneck (AMSIN) Mariposa lily (CALOC) Bluedicks (DICAC5) Monkeyflower (MIMUL) Lupine (LUPIN) Vetch (VICIA) Rose clover (TRHI4)	--- --- --- --- --- --- --- --- --- --- --- --- ---
Rock outcrop.				
342: Thermalrocks----	---	---	Silver hairgrass (AICA) Sierra mock stonecrop (SEPU4) Hansen's spikemoss (SEHA2) Soft chess (BRHOH) Filaree (ERODI) Red brome (BRRU2) Medusahead (TACA8) Fiddleneck (AMSIN) Lupine (LUPIN) Mullein (VERBA) Buckwheat (ERIOG) Nitgrass (GAVE3) Vinegarweed (TRLA4) Brodiaea (BRODI) Mariposa lily (CALOC)	--- --- --- --- --- --- --- --- --- --- --- --- --- --- ---
Beatsonhollow taxadjunct-----	---	---	Soft chess (BRHOH) Wild oat (AVFA) Ripgut brome (BRDI3) Medusahead (TACA8) Bluedicks (DICAC5) Filaree (ERODI) Red brome (BRRU2) Clover (TRIFO) Buckwheat (ERIOG)	--- --- --- --- --- --- --- --- ---
Rock outcrop.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
353: Cherokeespring--	---	---	Interior live oak (QUWI2) California black oak (QUKE) Whiteleaf manzanita (ARMA) Buckbrush (CECU) Hedgehog dogtail (CYEC) Pacific poison oak (TODI) Yellow starthistle (CESO3) Wild oat (AVFA) Soft chess (BRHOH) Ryegrass (LOLIU) Ripgut brome (BRDI3) Filaree (ERODI) Cowbag clover (TRDE) Valley oak (QULO) Foothill pine (PISA2) Blue oak (QUDO)	--- --- --- --- --- --- --- --- --- --- --- --- --- --- ---
355: Coalcanyon-----	Interior live oak (QUWI2) Foothill pine (PISA2) Blue oak (QUDO) Valley oak (QULO)	--- --- --- ---	Interior live oak (QUWI2) Blue oak (QUDO) Valley oak (QULO) Foothill pine (PISA2) Hedgehog dogtail (CYEC) Pacific poison oak (TODI) Whiteleaf manzanita (ARMA) Toyon (HEAR5) California laurel (UMCA) Mustard (BRASS2) Wild oat (AVFA) Soft chess (BRHOH) Filaree (ERODI) Yellow starthistle (CESO3) Rose clover (TRHI4)	--- --- --- --- --- --- --- --- --- --- --- --- --- ---
Talus.				
356: Coalcanyon-----	Interior live oak (QUWI2) Foothill pine (PISA2) Blue oak (QUDO) Valley oak (QULO)	--- --- --- ---	Interior live oak (QUWI2) Blue oak (QUDO) Valley oak (QULO) Foothill pine (PISA2) Hedgehog dogtail (CYEC) Pacific poison oak (TODI) Whiteleaf manzanita (ARMA) Toyon (HEAR5) California laurel (UMCA) Mustard (BRASS2) Wild oat (AVFA) Soft chess (BRHOH) Filaree (ERODI) Yellow starthistle (CESO3) Rose clover (TRHI4)	--- --- --- --- --- --- --- --- --- --- --- --- --- ---
Rock outcrop.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
356: Talus.				
Coonhollow-----	Interior live oak (QUWI2)	---	Interior live oak (QUWI2)	---
	Foothill pine (PISA2)	---	Blue oak (QUDO)	---
	Blue oak (QUDO)	---	Valley oak (QULO)	---
	Valley oak (QULO)	---	Foothill pine (PISA2)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Whiteleaf manzanita (ARMA)	---
			Toyon (HEAR5)	---
			Mustard (BRASS2)	---
			Wild oat (AVFA)	---
			Soft chess (BRHOH)	---
			Filaree (ERODI)	---
			Yellow starthistle (CESO3)	---
			Rose clover (TRHI4)	---
360: Typic Xerofluvents, coarse-loamy---	Cottonwood (POPUL)	---	Filaree (ERODI)	---
	Valley oak (QULO)	---	Red brome (BRRU2)	---
	California sycamore (PLRA)	---	Willow (SALIX)	---
	Black walnut (JUNI)	---	California wild grape (VICA5)	---
			Pacific poison oak (TODI)	---
Typic Xerofluvents, loamy-skeletal	Cottonwood (POPUL)	---	Filaree (ERODI)	---
	Valley oak (QULO)	---	Red brome (BRRU2)	---
	California sycamore (PLRA)	---	Willow (SALIX)	---
	Black walnut (JUNI)	---	California wild grape (VICA5)	---
			Pacific poison oak (TODI)	---
361: Typic Xerofluvents---	Cottonwood (POPUL)	---	Filaree (ERODI)	---
	Valley oak (QULO)	---	Red brome (BRRU2)	---
	California sycamore (PLRA)	---	Willow (SALIX)	---
	Black walnut (JUNI)	---	California wild grape (VICA5)	---
			Pacific poison oak (TODI)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species	
362: Ultic Haploxerafals, sandstone, low elevation, very deep-----	Blue oak (QUDO)	---	Soft chess (BRHOH)	---	
	Valley oak (QULO)	---	Ryegrass (LOLIU)	---	
	Interior live oak (QUWI2)	---	Ripgut brome (BRDI3)	---	
	Foothill pine (PISA2)	---	Clover (TRIFO)	---	
				Hedgehog dogtail (CYEC)	---
				Pacific poison oak (TODI)	---
				Wild oat (AVFA)	---
				Mustard (BRASS2)	---
				Blue oak (QUDO)	---
				Brodiaea (BRODI)	---
				Dandelion (TARAX)	---
				Medusahead (TACA8)	---
				Filaree (ERODI)	---
				Popcornflower (PLAGI)	---
				Valley oak (QULO)	---
				Bottlebrush squirreltail (ELEL5)	
			Interior live oak (QUWI2)	---	
			Lupine (LUPIN)	---	
			Foothill pine (PISA2)	---	
			Mediterranean barley (HOMUL)	---	
Ultic Haploxerafals, sandstone, low elevation, deep	Blue oak (QUDO)	---	Soft chess (BRHOH)	---	
	Valley oak (QULO)	---	Ryegrass (LOLIU)	---	
	Interior live oak (QUWI2)	---	Ripgut brome (BRDI3)	---	
	Foothill pine (PISA2)	---	Clover (TRIFO)	---	
				Hedgehog dogtail (CYEC)	---
				Pacific poison oak (TODI)	---
				Wild oat (AVFA)	---
				Mustard (BRASS2)	---
				Blue oak (QUDO)	---
				Brodiaea (BRODI)	---
				Dandelion (TARAX)	---
				Medusahead (TACA8)	---
				Filaree (ERODI)	---
				Popcornflower (PLAGI)	---
				Valley oak (QULO)	---
				Bottlebrush squirreltail (ELEL5)	
			Interior live oak (QUWI2)	---	
			Lupine (LUPIN)	---	
			Foothill pine (PISA2)	---	
			Mediterranean barley (HOMUL)	---	

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
365: Palexerults-----	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Interior live oak (QUWI2)	---	Interior live oak (QUWI2)	---
	Valley oak (QULO)	---	Medusahead (TACA8)	---
	Foothill pine (PISA2)	---	Hedgehog dogtail (CYEC)	---
			Soft chess (BRHOH)	---
			Pacific poison oak (TODI)	---
			Ryegrass (LOLIU)	---
			Clover (TRIFO)	---
			Wild oat (AVFA)	---
			Filaree (ERODI)	---
			Red brome (BRRU2)	---
			Yellow starthistle (CESO3)	---
			Manzanita (ARCTO3)	---
			Toyon (HEAR5)	---
			Buckbrush (CECU)	---
			Valley oak (QULO)	---
			Foothill pine (PISA2)	---
366: Palexerults-----	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Interior live oak (QUWI2)	---	Interior live oak (QUWI2)	---
	Valley oak (QULO)	---	Medusahead (TACA8)	---
	Foothill pine (PISA2)	---	Hedgehog dogtail (CYEC)	---
			Soft chess (BRHOH)	---
			Pacific poison oak (TODI)	---
			Ryegrass (LOLIU)	---
			Clover (TRIFO)	---
			Wild oat (AVFA)	---
			Filaree (ERODI)	---
			Red brome (BRRU2)	---
			Yellow starthistle (CESO3)	---
			Manzanita (ARCTO3)	---
			Toyon (HEAR5)	---
			Buckbrush (CECU)	---
			Valley oak (QULO)	---
			Foothill pine (PISA2)	---
370: Palexerults-----	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Interior live oak (QUWI2)	---	Interior live oak (QUWI2)	---
	Valley oak (QULO)	---	Medusahead (TACA8)	---
	Foothill pine (PISA2)	---	Hedgehog dogtail (CYEC)	---
			Soft chess (BRHOH)	---
			Pacific poison oak (TODI)	---
			Ryegrass (LOLIU)	---
			Clover (TRIFO)	---
			Wild oat (AVFA)	---
			Filaree (ERODI)	---
			Red brome (BRRU2)	---
			Yellow starthistle (CESO3)	---
			Manzanita (ARCTO3)	---
			Toyon (HEAR5)	---
			Buckbrush (CECU)	---
			Valley oak (QULO)	---
			Foothill pine (PISA2)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
377: Durixeralfs-----	---	---	Italian ryegrass (LOPEM2) Soft chess (BRHOH) Clover (TRIFO) Mediterranean barley (HOMUL) Vinegarweed (TRLA4) Bluedicks (DICAC5) Medusahead (TACA8) Brodiaea (BRODI) Wild oat (AVFA) Ripgut brome (BRDI3) Fiddleneck (AMSIN) Filaree (ERODI)	--- --- --- --- --- --- --- --- --- --- ---
Duraquerts-----	---	---	Popcornflower (PLAGI) Cowbag clover (TRDE) Medusahead (TACA8) Italian ryegrass (LOPEM2) Soft blow wives (ACMO2) Lupine (LUPIN) Pepperweed (LEPID) Meadowfoam (LIMNA) Mediterranean barley (HOMUL) Coyote thistle (ERCA33) Soft chess (BRHOH) Yellow carpet (BLNAN) Navarretia (NAVAR) Soft blow wives (ACMO2) Butter-n-eggs (TRERE2) Woolly marbles (PSILO)	--- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---
400. Subaco taxadjunct				
415: Ignord-----	Valley oak (QULO)	---	---	---
416: Calcic Haploxerolls---	---	---	Orchardgrass (DAGL) Curly dock (RUCR) Mouse barley (HOMAG) Italian ryegrass (LOPEM2) Saltgrass (DISTI) Alameda County thistle (CIQU2)	--- --- --- --- --- ---
418: Almendra-----	---	---	Valley oak (QULO)	---
419: Conejo-----	---	---	Oak (QUERC)	---
420: Conejo-----	---	---	Oak (QUERC)	---
425, 426. Vina				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
439. Oxyaquic Xerofluvents				
440: Oxyaquic Xerofluvents---	---	---	Willow (SALIX) Valley oak (QULO)	--- ---
441. Oxyaquic Xerofluvents				
442, 443. Durixerolls. Haploxerolls.				
445. Chico				
447: Charger-----	---	---	Valley oak (QULO)	---
448, 449. Haploxerolls				
500: Lofgren-----	---	---	Carex (CAREX)	---
Blavo-----	---	---	Spikerush (ELEOC) Swampgrass (CRSC)	--- ---
501: Lofgren-----	---	---	Carex (CAREX)	---
Blavo-----	---	---	Spikerush (ELEOC) Swampgrass (CRSC)	--- ---
502: Blavo-----	---	---	Spikerush (ELEOC) Swampgrass (CRSC)	--- ---
519. Edjobe				
520: Esquon-----	---	---	Italian ryegrass (LOPEM2) Curly dock (RUCR) Spikerush (ELEOC)	--- --- ---
Neerdobe-----	---	---	Italian ryegrass (LOPEM2) Curly dock (RUCR) Spikerush (ELEOC)	--- --- ---
521: Neerdobe-----	---	---	Italian ryegrass (LOPEM2) Curly dock (RUCR) Spikerush (ELEOC)	--- --- ---
522. Clear Lake				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
554:				
Dunstone-----	Blue oak (QUDO)	---	Whiteleaf manzanita (ARMA)	---
	Foothill pine (PISA2)	---	Buckbrush (CECU)	---
	Interior live oak (QUWI2)	---	Toyon (HEAR5)	---
			Hedgehog dogtail (CYEC)	---
			Wild oat (AVFA)	---
			Pacific poison oak (TODI)	---
			Soft chess (BRHOH)	---
			Rattlesnake brome (BRBR5)	---
			Squirreltail (ELELC2)	---
Loafercreek----	Blue oak (QUDO)	---	Whiteleaf manzanita (ARMA)	---
	Foothill pine (PISA2)	---	Buckbrush (CECU)	---
	Interior live oak (QUWI2)	---	Toyon (HEAR5)	---
			Hedgehog dogtail (CYEC)	---
			Wild oat (AVFA)	---
			Pacific poison oak (TODI)	---
			Soft chess (BRHOH)	---
			Rattlesnake brome (BRBR5)	---
			Squirreltail (ELELC2)	---
555:				
Dunstone-----	Blue oak (QUDO)	---	Whiteleaf manzanita (ARMA)	---
	Foothill pine (PISA2)	---	Buckbrush (CECU)	---
	Interior live oak (QUWI2)	---	Toyon (HEAR5)	---
			Hedgehog dogtail (CYEC)	---
			Wild oat (AVFA)	---
			Pacific poison oak (TODI)	---
			Soft chess (BRHOH)	---
			Rattlesnake brome (BRBR5)	---
			Squirreltail (ELELC2)	---
Loafercreek----	Blue oak (QUDO)	---	Whiteleaf manzanita (ARMA)	---
	Foothill pine (PISA2)	---	Buckbrush (CECU)	---
	Interior live oak (QUWI2)	---	Toyon (HEAR5)	---
			Hedgehog dogtail (CYEC)	---
			Wild oat (AVFA)	---
			Pacific poison oak (TODI)	---
			Soft chess (BRHOH)	---
			Rattlesnake brome (BRBR5)	---
			Squirreltail (ELELC2)	---
556:				
Mounthope-----	Blue oak (QUDO)	---	Whiteleaf manzanita (ARMA)	---
	Foothill pine (PISA2)	---	Buckbrush (CECU)	---
	Interior live oak (QUWI2)	---	Toyon (HEAR5)	---
	Ponderosa pine (PIPO)	---	Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Chapparal coffeeberry (FRCA12)	---
			Blue oak (QUDO)	---
			Interior live oak (QUWI2)	---
			Foothill pine (PISA2)	---
			Ponderosa pine (PIPO)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
556: Hartsmill-----	Interior live oak (QUWI2)	---	Whiteleaf manzanita (ARMA)	---
	Blue oak (QUDO)	---	Buckbrush (CECU)	---
	California black oak (QUKE)	---	Toyon (HEAR5)	---
	Ponderosa pine (PIPO)	---	Hedgehog dogtail (CYEC)	---
	Incense cedar (CADE27)	---	Interior live oak (QUWI2)	---
	Pacific madrone (ARME)	---	Pacific poison oak (TODI)	---
			Blue oak (QUDO)	---
			Pacific madrone (ARME)	---
			California black oak (QUKE)	---
			Ponderosa pine (PIPO)	---
			Incense cedar (CADE27)	---
557: Mounthope-----	Blue oak (QUDO)	---	Whiteleaf manzanita (ARMA)	---
	Foothill pine (PISA2)	---	Buckbrush (CECU)	---
	Interior live oak (QUWI2)	---	Toyon (HEAR5)	---
	Ponderosa pine (PIPO)	---	Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Chapparal coffeeberry (FRCA12)	---
			Blue oak (QUDO)	---
			Interior live oak (QUWI2)	---
			Foothill pine (PISA2)	---
			Ponderosa pine (PIPO)	---
Hartsmill-----	Interior live oak (QUWI2)	---	Whiteleaf manzanita (ARMA)	---
	Blue oak (QUDO)	---	Buckbrush (CECU)	---
	California black oak (QUKE)	---	Toyon (HEAR5)	---
	Ponderosa pine (PIPO)	---	Hedgehog dogtail (CYEC)	---
	Incense cedar (CADE27)	---	Interior live oak (QUWI2)	---
	Pacific madrone (ARME)	---	Pacific poison oak (TODI)	---
			Blue oak (QUDO)	---
			Pacific madrone (ARME)	---
			California black oak (QUKE)	---
			Ponderosa pine (PIPO)	---
			Incense cedar (CADE27)	---
558: Hartsmill-----	Interior live oak (QUWI2)	---	Whiteleaf manzanita (ARMA)	---
	Blue oak (QUDO)	---	Buckbrush (CECU)	---
	California black oak (QUKE)	---	Toyon (HEAR5)	---
	Ponderosa pine (PIPO)	---	Hedgehog dogtail (CYEC)	---
	Incense cedar (CADE27)	---	Interior live oak (QUWI2)	---
	Pacific madrone (ARME)	---	Pacific poison oak (TODI)	---
			Blue oak (QUDO)	---
			Pacific madrone (ARME)	---
			California black oak (QUKE)	---
			Ponderosa pine (PIPO)	---
			Incense cedar (CADE27)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
560: Mounthope-----	Blue oak (QUDO)	---	Whiteleaf manzanita (ARMA)	---
	Foothill pine (PISA2)	---	Buckbrush (CECU)	---
	Interior live oak (QUWI2)	---	Toyon (HEAR5)	---
	Ponderosa pine (PIPO)	---	Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Chapparal coffeeberry (FRCA12)	---
			Blue oak (QUDO)	---
			Interior live oak (QUWI2)	---
			Foothill pine (PISA2)	---
			Ponderosa pine (PIPO)	---
561: Bigridge-----	Ponderosa pine (PIPO)	45	Whiteleaf manzanita (ARMA)	10
	California black oak (QUKE)	28	Toyon (HEAR5)	5
	Interior live oak (QUWI2)	13	Ryegrass (LOLIU)	3
	Pacific madrone (ARME)	5	Pacific poison oak (TODI)	---
	Foothill pine (PISA2)	3	Ponderosa pine (PIPO)	3
	Douglas-fir (PSME)	3	Deerbrush (CEIN3)	3
	Canyon live oak (QUCH2)	3	California buckthorn (FRCAT2)	3
			Canyon live oak (QUCH2)	3
			Bigleaf maple (ACMA3)	1
			Pacific madrone (ARME)	1
Minniecreek----	California black oak (QUKE)	---	California black oak (QUKE)	---
	Interior live oak (QUWI2)	---	Pacific madrone (ARME)	---
	Pacific madrone (ARME)	---	Canyon live oak (QUCH2)	---
	Ponderosa pine (PIPO)	---	Deerbrush (CEIN3)	---
	Canyon live oak (QUCH2)	---	Interior live oak (QUWI2)	---
			Ponderosa pine (PIPO)	---
			Western brackenfern (PTAQ)	---
			Whiteleaf manzanita (ARMA)	---
			Pacific poison oak (TODI)	---
562: Bigridge-----	Ponderosa pine (PIPO)	45	Whiteleaf manzanita (ARMA)	10
	California black oak (QUKE)	28	Toyon (HEAR5)	5
	Interior live oak (QUWI2)	13	Ryegrass (LOLIU)	3
	Pacific madrone (ARME)	5	Pacific poison oak (TODI)	---
	Foothill pine (PISA2)	3	Ponderosa pine (PIPO)	3
	Douglas-fir (PSME)	3	Deerbrush (CEIN3)	3
	Canyon live oak (QUCH2)	3	California buckthorn (FRCAT2)	3
			Canyon live oak (QUCH2)	3
			Bigleaf maple (ACMA3)	1
			Pacific madrone (ARME)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
562: Minniecreek-----	California black oak (QUKE)	---	California black oak (QUKE)	---
	Interior live oak (QUWI2)	---	Pacific madrone (ARME)	---
	Pacific madrone (ARME)	---	Canyon live oak (QUCH2)	---
	Ponderosa pine (PIPO)	---	Deerbrush (CEIN3)	---
	Canyon live oak (QUCH2)	---	Interior live oak (QUWI2)	---
			Ponderosa pine (PIPO)	---
			Western brackenfern (PTAQ)	---
			Whiteleaf manzanita (ARMA)	---
			Pacific poison oak (TODI)	---
563: Bigridge-----	Ponderosa pine (PIPO)	45	Whiteleaf manzanita (ARMA)	10
	California black oak (QUKE)	28	Toyon (HEAR5)	5
	Interior live oak (QUWI2)	13	Ryegrass (LOLIU)	3
	Pacific madrone (ARME)	5	Pacific poison oak (TODI)	---
	Foothill pine (PISA2)	3	Ponderosa pine (PIPO)	3
	Douglas-fir (PSME)	3	Deerbrush (CEIN3)	3
	Canyon live oak (QUCH2)	3	California buckthorn (FRCAT2)	3
			Canyon live oak (QUCH2)	3
			Bigleaf maple (ACMA3)	1
			Pacific madrone (ARME)	1
Minniecreek-----	California black oak (QUKE)	---	California black oak (QUKE)	---
	Interior live oak (QUWI2)	---	Pacific madrone (ARME)	---
	Pacific madrone (ARME)	---	Canyon live oak (QUCH2)	---
	Ponderosa pine (PIPO)	---	Deerbrush (CEIN3)	---
	Canyon live oak (QUCH2)	---	Interior live oak (QUWI2)	---
			Ponderosa pine (PIPO)	---
			Western brackenfern (PTAQ)	---
			Whiteleaf manzanita (ARMA)	---
			Pacific poison oak (TODI)	---
564: Bigridge-----	Ponderosa pine (PIPO)	45	Whiteleaf manzanita (ARMA)	10
	California black oak (QUKE)	28	Toyon (HEAR5)	5
	Interior live oak (QUWI2)	13	Ryegrass (LOLIU)	3
	Pacific madrone (ARME)	5	Pacific poison oak (TODI)	---
	Foothill pine (PISA2)	3	Ponderosa pine (PIPO)	3
	Douglas-fir (PSME)	3	Deerbrush (CEIN3)	3
	Canyon live oak (QUCH2)	3	California buckthorn (FRCAT2)	3
			Canyon live oak (QUCH2)	3
			Bigleaf maple (ACMA3)	1
			Pacific madrone (ARME)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
564: Minniecreek-----	California black oak (QUKE)	---	California black oak (QUKE)	---
	Interior live oak (QUWI2)	---	Pacific madrone (ARME)	---
	Pacific madrone (ARME)	---	Canyon live oak (QUCH2)	---
	Ponderosa pine (PIPO)	---	Deerbrush (CEIN3)	---
	Canyon live oak (QUCH2)	---	Interior live oak (QUWI2)	---
			Ponderosa pine (PIPO)	---
			Western brackenfern (PTAQ)	---
			Whiteleaf manzanita (ARMA)	---
			Pacific poison oak (TODI)	---
565: Dunstone-----	Blue oak (QUDO)	---	Soft chess (BRHOH)	---
	Interior live oak (QUWI2)	---	Rattlesnake brome (BRBR5)	---
			Ripgut brome (BRDI3)	---
			Hedgehog dogtail (CYEC)	---
			Red clover (TRPR2)	---
			Medusahead (TACA8)	---
			Junegrass (KOMA)	---
Argonaut taxadjunct-----	Blue oak (QUDO)	---	Wild oat (AVFA)	---
	Foothill pine (PISA2)	---	Soft chess (BRHOH)	---
	Interior live oak (QUWI2)	---	Ripgut brome (BRDI3)	---
			Hedgehog dogtail (CYEC)	---
			Red clover (TRPR2)	---
			Pacific poison oak (TODI)	---
			Blue oak (QUDO)	---
			Foothill pine (PISA2)	---
			Buckbrush (CECU)	---
			Medusahead (TACA8)	---
Sunnyslope-----	Blue oak (QUDO)	---	Rattlesnake brome (BRBR5)	---
	Foothill pine (PISA2)	---	Wild oat (AVFA)	---
	Interior live oak (QUWI2)	---	Soft chess (BRHOH)	---
			Clover (TRIFO)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Italian ryegrass (LOPEM2)	---
			Blue oak (QUDO)	---
			Buckbrush (CECU)	---
			Foothill pine (PISA2)	---
			Interior live oak (QUWI2)	---
			Medusahead (TACA8)	---
			Dandelion (TARAX)	---
			Wild onion (ALLIU)	---
			Whiteleaf manzanita (ARMA)	---
566: Dunstone-----	Blue oak (QUDO)	---	Soft chess (BRHOH)	---
	Interior live oak (QUWI2)	---	Rattlesnake brome (BRBR5)	---
			Ripgut brome (BRDI3)	---
			Hedgehog dogtail (CYEC)	---
			Red clover (TRPR2)	---
			Medusahead (TACA8)	---
			Junegrass (KOMA)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
566:				
Loafercreek-----	Blue oak (QUDO)	---	Soft chess (BRHOH)	---
	Foothill pine (PISA2)	---	Rattlesnake brome (BRBR5)	---
	Interior live oak (QUWI2)	---	Ripgut brome (BRDI3)	---
			Hedgehog dogtail (CYEC)	---
			Red clover (TRPR2)	---
			Medusahead (TACA8)	---
			Junegrass (KOMA)	---
Katskillhill----	Blue oak (QUDO)	---	Rattlesnake brome (BRBR5)	---
	Foothill pine (PISA2)	---	Italian ryegrass (LOPEM2)	---
			Bermudagrass (CYDA)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Ripgut brome (BRDI3)	---
			Yellow salsify (TRDU)	---
			Wild oat (AVFA)	---
			Soft chess (BRHOH)	---
			Blue oak (QUDO)	---
			Foothill pine (PISA2)	---
			Buckbrush (CECU)	---
			Wild onion (ALLIU)	---
			Dandelion (TARAX)	---
			Columbine (AQUL)	---
			Red clover (TRPR2)	---
			Thistle (CIRSI)	---
			Ragweed (AMBRO)	---
567:				
Dunstone-----	Blue oak (QUDO)	---	Soft chess (BRHOH)	---
	Interior live oak (QUWI2)	---	Rattlesnake brome (BRBR5)	---
			Ripgut brome (BRDI3)	---
			Hedgehog dogtail (CYEC)	---
			Red clover (TRPR2)	---
			Medusahead (TACA8)	---
			Junegrass (KOMA)	---
Loafercreek-----	Blue oak (QUDO)	---	Soft chess (BRHOH)	---
	Foothill pine (PISA2)	---	Rattlesnake brome (BRBR5)	---
	Interior live oak (QUWI2)	---	Ripgut brome (BRDI3)	---
			Hedgehog dogtail (CYEC)	---
			Red clover (TRPR2)	---
			Medusahead (TACA8)	---
			Junegrass (KOMA)	---
Argonaut taxadjunct-----	Blue oak (QUDO)	---	Wild oat (AVFA)	---
	Foothill pine (PISA2)	---	Soft chess (BRHOH)	---
	Interior live oak (QUWI2)	---	Ripgut brome (BRDI3)	---
			Hedgehog dogtail (CYEC)	---
			Red clover (TRPR2)	---
			Pacific poison oak (TODI)	---
			Blue oak (QUDO)	---
			Foothill pine (PISA2)	---
			Buckbrush (CECU)	---
			Medusahead (TACA8)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
577:				
Parkshill-----	Foothill pine (PISA2)	---	Soft chess (BRHOH)	---
	Interior live oak (QUWI2)	---	Ripgut brome (BRDI3)	---
	Ponderosa pine (PIPO)	---	Wild oat (AVFA)	---
	Valley oak (QULO)	---	Hedgehog dogtail (CYEC)	---
	Blue oak (QUDO)	---	Rattlesnake brome (BRBR5)	---
			Pacific poison oak (TODI)	---
			Clover (TRIFO)	---
			Blue oak (QUDO)	---
			Valley oak (QULO)	---
			Interior live oak (QUWI2)	---
			Foothill pine (PISA2)	---
			Ponderosa pine (PIPO)	---
			Whiteleaf manzanita (ARMA)	---
			Buckbrush (CECU)	---
Flanly-----	Foothill pine (PISA2)	---	Soft chess (BRHOH)	---
	Interior live oak (QUWI2)	---	Ripgut brome (BRDI3)	---
	Blue oak (QUDO)	---	Wild oat (AVFA)	---
			Blue oak (QUDO)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Whiteleaf manzanita (ARMA)	---
			Buckbrush (CECU)	---
			Foothill pine (PISA2)	---
			Interior live oak (QUWI2)	---
			Wild onion (ALLIU)	---
			Rattlesnake brome (BRBR5)	---
			Mariposa lily (CALOC)	---
			Vinegarweed (TRLA4)	---
			Hayfield tarweed (HECOL3)	---
Hurleton-----	Foothill pine (PISA2)	---	Soft chess (BRHOH)	---
	Blue oak (QUDO)	---	Ripgut brome (BRDI3)	---
			Wild oat (AVFA)	---
			Hedgehog dogtail (CYEC)	---
			Rose clover (TRHI4)	---
			Pacific poison oak (TODI)	---
			Blue oak (QUDO)	---
			Rattlesnake brome (BRBR5)	---
			Buckbrush (CECU)	---
			Whiteleaf manzanita (ARMA)	---
			Chapparal coffeeberry (FRCA12)	---
			Foothill pine (PISA2)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
578:				
Flanly-----	Foothill pine (PISA2)	---	Soft chess (BRHOH)	---
	Blue oak (QUDO)	---	Ripgut brome (BRDI3)	---
			Wild oat (AVFA)	---
			Blue oak (QUDO)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Whiteleaf manzanita (ARMA)	---
			Buckbrush (CECU)	---
			Foothill pine (PISA2)	---
			Interior live oak (QUWI2)	---
			Wild onion (ALLIU)	---
			Rattlesnake brome (BRBR5)	---
			Mariposa lily (CALOC)	---
			Vinegarweed (TRLA4)	---
			Hayfield tarweed (HECOL3)	---
Swedesflat-----	Foothill pine (PISA2)	---	Soft chess (BRHOH)	---
	Interior live oak (QUWI2)	---	Ripgut brome (BRDI3)	---
	Blue oak (QUDO)	---	Wild oat (AVFA)	---
			Red brome (BRRU2)	---
			Pacific poison oak (TODI)	---
			Medusahead (TACA8)	---
			Blue oak (QUDO)	---
			Whiteleaf manzanita (ARMA)	---
			Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			Foothill pine (PISA2)	---
			Interior live oak (QUWI2)	---
580:				
Surnuf				
taxadjunct-----	Ponderosa pine (PIPO)	42	Deerbrush (CEIN3)	15
	Douglas-fir (PSME)	32	California buckthorn (FRCAT2)	5
	California black oak (QUKE)	10	Bigleaf maple (ACMA3)	3
	Pacific madrone (ARME)	8	Pacific madrone (ARME)	3
	Sugar pine (PILA)	8	Pacific poison oak (TODI)	---
			Pacific dogwood (CONU4)	3
			California honeysuckle (LOHI2)	3
			Western brackenfern (PTAQ)	3
			California black oak (QUKE)	3
			Whiteleaf manzanita (ARMA)	3
			Himalaya blackberry (RUDI2)	3
			California needlegrass (ACOCC)	1
			Toyon (HEAR5)	1
			Iris (IRIS)	1
			Ryegrass (LOLIU)	1
			Douglas-fir (PSME)	1
			Broadleaf starflower (TRBOL)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
580: Griffgulch-----	Ponderosa pine (PIPO)	55	Whiteleaf manzanita (ARMA)	19
	Douglas-fir (PSME)	16	Pacific madrone (ARME)	6
	California black oak (QUKE)	12	Canyon live oak (QUCH2)	5
	Sugar pine (PILA)	8	California laurel (UMCA)	5
	Canyon live oak (QUCH2)	5	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	4	Toyon (HEAR5)	5
			California black oak (QUKE)	5
			Douglas-fir (PSME)	3
			Pursh's buckthorn (FRPU7)	3
			California scrub oak (QUDU)	3
			Deerbrush (CEIN3)	2
			Incense cedar (CADE27)	2
			Ponderosa pine (PIPO)	2
			Lemmon ceanothus (CELE)	1
			California redbud (CEOR9)	1
			Tall Oregon grape (MAAQ2)	1
			Sugar pine (PILA)	1
Rock outcrop.				
581: Surnuf taxadjunct-----	Ponderosa pine (PIPO)	42	Deerbrush (CEIN3)	15
	Douglas-fir (PSME)	32	California buckthorn (FRCAT2)	5
	California black oak (QUKE)	10	Bigleaf maple (ACMA3)	3
	Pacific madrone (ARME)	8	Pacific madrone (ARME)	3
	Sugar pine (PILA)	8	Pacific poison oak (TODI)	---
			Pacific dogwood (CONU4)	3
			California honeysuckle (LOHI2)	3
			Western brackenfern (PTAQ)	3
			California black oak (QUKE)	3
			Whiteleaf manzanita (ARMA)	3
			Himalaya blackberry (RUDI2)	3
			California needlegrass (ACOCC)	1
			Toyon (HEAR5)	1
			Iris (IRIS)	1
			Ryegrass (LOLIU)	1
			Douglas-fir (PSME)	1
			Broadleaf starflower (TRBOL)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
581: Griffgulch-----	Ponderosa pine (PIPO)	55	Whiteleaf manzanita (ARMA)	19
	Douglas-fir (PSME)	16	Pacific madrone (ARME)	6
	California black oak (QUKE)	12	Canyon live oak (QUCH2)	5
	Sugar pine (PILA)	8	California laurel (UMCA)	5
	Canyon live oak (QUCH2)	5	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	4	Toyon (HEAR5)	5
			California black oak (QUKE)	5
			Douglas-fir (PSME)	3
			Pursh's buckthorn (FRPU7)	3
			California scrub oak (QUDU)	3
			Deerbrush (CEIN3)	2
			Incense cedar (CADE27)	2
			Ponderosa pine (PIPO)	2
			Lemmon ceanothus (CELE)	1
			California redbud (CEOR9)	1
			Tall Oregon grape (MAAQ2)	1
			Sugar pine (PILA)	1
582: Surnuf taxadjunct-----	Ponderosa pine (PIPO)	42	Deerbrush (CEIN3)	15
	Douglas-fir (PSME)	32	California buckthorn (FRCAT2)	5
	California black oak (QUKE)	10	Bigleaf maple (ACMA3)	3
	Pacific madrone (ARME)	8	Pacific madrone (ARME)	3
	Sugar pine (PILA)	8	Pacific poison oak (TODI)	---
			Pacific dogwood (CONU4)	3
			California honeysuckle (LOHI2)	3
			Western brackenfern (PTAQ)	3
			California black oak (QUKE)	3
			Whiteleaf manzanita (ARMA)	3
			Himalaya blackberry (RUDI2)	3
			California needlegrass (ACOCC)	1
			Toyon (HEAR5)	1
			Iris (IRIS)	1
			Ryegrass (LOLIU)	1
			Douglas-fir (PSME)	1
			Broadleaf starflower (TRBOL)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
582: Griffgulch-----	Ponderosa pine (PIPO)	55	Whiteleaf manzanita (ARMA)	19
	Douglas-fir (PSME)	16	Pacific madrone (ARME)	6
	California black oak (QUKE)	12	Canyon live oak (QUCH2)	5
	Sugar pine (PILA)	8	California laurel (UMCA)	5
	Canyon live oak (QUCH2)	5	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	4	Toyon (HEAR5)	5
			California black oak (QUKE)	5
			Douglas-fir (PSME)	3
			Pursh's buckthorn (FRPU7)	3
			California scrub oak (QUDU)	3
			Deerbrush (CEIN3)	2
			Incense cedar (CADE27)	2
			Ponderosa pine (PIPO)	2
			Lemmon ceanothus (CELE)	1
			California redbud (CEOR9)	1
			Tall Oregon grape (MAAQ2)	1
			Sugar pine (PILA)	1
583: Surnuf taxadjunct-----	Ponderosa pine (PIPO)	42	Deerbrush (CEIN3)	15
	Douglas-fir (PSME)	32	California buckthorn (FRCAT2)	5
	California black oak (QUKE)	10	Bigleaf maple (ACMA3)	3
	Pacific madrone (ARME)	8	Pacific madrone (ARME)	3
	Sugar pine (PILA)	8	Pacific poison oak (TODI)	---
			Pacific dogwood (CONU4)	3
			California honeysuckle (LOHI2)	3
			Western brackenfern (PTAQ)	3
			California black oak (QUKE)	3
			Whiteleaf manzanita (ARMA)	3
			Himalaya blackberry (RUDI2)	3
			California needlegrass (ACOCC)	1
			Toyon (HEAR5)	1
			Iris (IRIS)	1
			Ryegrass (LOLIU)	1
			Douglas-fir (PSME)	1
			Broadleaf starflower (TRBOL)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
583: Griffgulch-----	Ponderosa pine (PIPO)	55	Whiteleaf manzanita (ARMA)	19
	Douglas-fir (PSME)	16	Pacific madrone (ARME)	6
	California black oak (QUKE)	12	Canyon live oak (QUCH2)	5
	Sugar pine (PILA)	8	California laurel (UMCA)	5
	Canyon live oak (QUCH2)	5	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	4	Toyon (HEAR5)	5
			California black oak (QUKE)	5
			Douglas-fir (PSME)	3
			Pursh's buckthorn (FRPU7)	3
			California scrub oak (QUDU)	3
			Deerbrush (CEIN3)	2
			Incense cedar (CADE27)	2
			Ponderosa pine (PIPO)	2
			Lemmon ceanothus (CELE)	1
			California redbud (CEOR9)	1
			Tall Oregon grape (MAAQ2)	1
			Sugar pine (PILA)	1
584: Flanly-----	Foothill pine (PISA2)	---	Soft chess (BRHOH)	---
	Interior live oak (QUWI2)	---	Ripgut brome (BRDI3)	---
	Blue oak (QUDO)	---	Wild oat (AVFA)	---
			Blue oak (QUDO)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Whiteleaf manzanita (ARMA)	---
			Buckbrush (CECU)	---
			Foothill pine (PISA2)	---
			Interior live oak (QUWI2)	---
			Wild onion (ALLIU)	---
			Rattlesnake brome (BRBR5)	---
			Mariposa lily (CALOC)	---
			Vinegarweed (TRLA4)	---
			Hayfield tarweed (HECOL3)	---
Swedesflat-----	Blue oak (QUDO)	---	Ripgut brome (BRDI3)	---
	Foothill pine (PISA2)	---	Red brome (BRRU2)	---
	Interior live oak (QUWI2)	---	Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			Pacific poison oak (TODI)	---
			Whiteleaf manzanita (ARMA)	---
			Blue oak (QUDO)	---
			Foothill pine (PISA2)	---
			Interior live oak (QUWI2)	---
Rackerby-----	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
	Interior live oak (QUWI2)	---	Interior live oak (QUWI2)	---
			Whiteleaf manzanita (ARMA)	---
			Pacific poison oak (TODI)	---
			Toyon (HEAR5)	---
			Buckbrush (CECU)	---
			Wild oat (AVFA)	---
			Ripgut brome (BRDI3)	---
			Medusahead (TACA8)	---
			Rattlesnake brome (BRBR5)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
585:				
Flanly-----	Foothill pine (PISA2)	---	Buckbrush (CECU)	---
	Interior live oak (QUWI2)	---	Foothill pine (PISA2)	---
	Blue oak (QUDO)	---	Interior live oak (QUWI2)	---
			Whiteleaf manzanita (ARMA)	---
			Soft chess (BRHOH)	---
			Ripgut brome (BRDI3)	---
			Wild oat (AVFA)	---
			Blue oak (QUDO)	---
			Pacific poison oak (TODI)	---
Sommeyflat-----	Foothill pine (PISA2)	---	Soft chess (BRHOH)	---
	Interior live oak (QUWI2)	---	Wild oat (AVFA)	---
	Blue oak (QUDO)	---	Ripgut brome (BRDI3)	---
			Red clover (TRPR2)	---
			Pacific poison oak (TODI)	---
			Blue oak (QUDO)	---
			Interior live oak (QUWI2)	---
			Foothill pine (PISA2)	---
			Whiteleaf manzanita (ARMA)	---
			Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			Creeping sage (SASO)	---
			Ponderosa pine (PIPO)	---
586:				
Sommeyflat-----	Blue oak (QUDO)	---	Soft chess (BRHOH)	---
	Foothill pine (PISA2)	---	Wild oat (AVFA)	---
	Interior live oak (QUWI2)	---	Ripgut brome (BRDI3)	---
	Ponderosa pine (PIPO)	---	Red clover (TRPR2)	---
			Pacific poison oak (TODI)	---
			Blue oak (QUDO)	---
			Interior live oak (QUWI2)	---
			Foothill pine (PISA2)	---
			Whiteleaf manzanita (ARMA)	---
			Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			Creeping sage (SASO)	---
			Ponderosa pine (PIPO)	---
Mounthope-----	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Foothill pine (PISA2)	---	Buckbrush (CECU)	---
	Interior live oak (QUWI2)	---	Foothill pine (PISA2)	---
	Ponderosa pine (PIPO)	---	Interior live oak (QUWI2)	---
			Ponderosa pine (PIPO)	---
			Toyon (HEAR5)	---
			Whiteleaf manzanita (ARMA)	---
		Pacific poison oak (TODI)	---	

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
587:				
Sommeyleft-----	Blue oak (QUDO)	---	Soft chess (BRHOH)	---
	Foothill pine (PISA2)	---	Wild oat (AVFA)	---
	Interior live oak (QUWI2)	---	Ripgut brome (BRDI3)	---
	Ponderosa pine (PIPO)	---	Red clover (TRPR2)	---
			Pacific poison oak (TODI)	---
			Blue oak (QUDO)	---
			Interior live oak (QUWI2)	---
			Foothill pine (PISA2)	---
			Whiteleaf manzanita (ARMA)	---
			Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			Creeping sage (SASO)	---
			Ponderosa pine (PIPO)	---
Mounthope-----	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Foothill pine (PISA2)	---	Buckbrush (CECU)	---
	Interior live oak (QUWI2)	---	Foothill pine (PISA2)	---
	Ponderosa pine (PIPO)	---	Interior live oak (QUWI2)	---
			Ponderosa pine (PIPO)	---
			Toyon (HEAR5)	---
			Whiteleaf manzanita (ARMA)	---
			Pacific poison oak (TODI)	---
Hurleton-----	Foothill pine (PISA2)	---	Soft chess (BRHOH)	---
	Blue oak (QUDO)	---	Ripgut brome (BRDI3)	---
	Interior live oak (QUWI2)	---	Wild oat (AVFA)	---
			Hedgehog dogtail (CYEC)	---
			Rose clover (TRHI4)	---
			Pacific poison oak (TODI)	---
			Blue oak (QUDO)	---
			Rattlesnake brome (BRBR5)	---
			Buckbrush (CECU)	---
			Whiteleaf manzanita (ARMA)	---
			Chapparal coffeeberry (FRCA12)	---
			Foothill pine (PISA2)	---
588:				
Ultic				
Haploxeralfs,				
thermic, high				
terrace-----	Blue oak (QUDO)	---	Ripgut brome (BRDI3)	---
	Foothill pine (PISA2)	---	Soft chess (BRHOH)	---
			Dandelion (TARAX)	---
			Hedgehog dogtail (CYEC)	---
			Wild onion (ALLIU)	---
			Pacific poison oak (TODI)	---
			Red clover (TRPR2)	---
			Wild oat (AVFA)	---
			Whiteleaf manzanita (ARMA)	---
			Junegrass (KOMA)	---
			Navarretia (NAVAR)	---
			Rattlesnake brome (BRBR5)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
589: Ultic Haploxeralfs, thermic, high terrace-----	Blue oak (QUDO) Foothill pine (PISA2)	--- ---	Ripgut brome (BRDI3) Soft chess (BRHOH) Dandelion (TARAX) Hedgehog dogtail (CYEC) Wild onion (ALLIU) Pacific poison oak (TODI) Red clover (TRPR2) Wild oat (AVFA) Whiteleaf manzanita (ARMA) Junegrass (KOMA) Navarretia (NAVAR) Rattlesnake brome (BRBR5)	--- --- --- --- --- --- --- --- --- --- ---
590: Vistarobles-----	---	---	Navarretia (NAVAR) Coyote thistle (ERCA33) Soft blow wives (ACMO2) Fremont's tidytips (LAFR2) Goldfields (LASTH) Yellow carpet (BLNAN) Medusahead (TACA8) Filaree (ERODI) Hairgrass (DESCH) Soft chess (BRHOH) Bluestars (BRMI3)	--- --- --- --- --- --- --- --- --- ---
Redding-----	---	---	Filaree (ERODI) Soft chess (BRHOH) Ripgut brome (BRDI3) Wild oat (AVFA) Rose clover (TRHI4) White brodiaea (TRHY3) Wild onion (ALLIU) Bluedicks (DICAC5) Dandelion (TARAX) Medusahead (TACA8) Coyote thistle (ERCA33)	--- --- --- --- --- --- --- --- --- ---
Argonaut taxadjunct-----	Blue oak (QUDO) Foothill pine (PISA2) Interior live oak (QUWI2)	--- --- ---	Wild oat (AVFA) Soft chess (BRHOH) Ripgut brome (BRDI3) Hedgehog dogtail (CYEC) Red clover (TRPR2) Pacific poison oak (TODI) Blue oak (QUDO) Foothill pine (PISA2) Buckbrush (CECU) Medusahead (TACA8)	--- --- --- --- --- --- --- --- --- ---
Haploxererts-----	---	---	Soft chess (BRHOH) Medusahead (TACA8) Hedgehog dogtail (CYEC) Tarweed (HEMIZ) Brodiaea (BRODI)	--- --- --- --- ---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
616: Typic Haploxeralfs---	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Interior live oak (QUWI2)	---	Interior live oak (QUWI2)	---
	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Manzanita (ARCTO3)	---
			Buckbrush (CECU)	---
			Filaree (ERODI)	---
			Soft chess (BRHOH)	---
			Ryegrass (LOLIU)	---
			Wild oat (AVFA)	---
			Brodiaea (BRODI)	---
			Red brome (BRRU2)	---
			Mediterranean barley (HOMUL)	---
			Medusahead (TACA8)	---
			California buckeye (AECA)	---
			Ripgut brome (BRDI3)	---
			Yellow starthistle (CESO3)	---
			Clover (TRIFO)	---
			Hairypink (PEDU2)	---
			Mouse barley (HOMAG)	---
			Toyon (HEAR5)	---
			Yerba santa (ERIOD)	---
			California buckthorn (FRCAT2)	---
			Miners lettuce (CLPE)	---
			Navarretia (NAVAR)	---
			California redbud (CEOR9)	---
			Scrub oak (QUBE5)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
617: Typic Haploxeralfs---	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Interior live oak (QUWI2)	---	Interior live oak (QUWI2)	---
	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Manzanita (ARCTO3)	---
			Buckbrush (CECU)	---
			Filaree (ERODI)	---
			Soft chess (BRHOH)	---
			Ryegrass (LOLIU)	---
			Wild oat (AVFA)	---
			Brodiaea (BRODI)	---
			Red brome (BRRU2)	---
			Mediterranean barley (HOMUL)	---
			Medusahead (TACA8)	---
			California buckeye (AECA)	---
			Ripgut brome (BRDI3)	---
			Yellow starthistle (CESO3)	---
			Clover (TRIFO)	---
			Hairy pink (PEDU2)	---
			Mouse barley (HOMAG)	---
			Toyon (HEAR5)	---
			Yerba santa (ERIOD)	---
			California buckthorn (FRCAT2)	---
			Miners lettuce (CLPE)	---
			Navarretia (NAVAR)	---
			California redbud (CEOR9)	---
			Scrub oak (QUBE5)	---
619: Carhart taxadjunct-----	---	---	Ryegrass (LOLIU)	---
			Navarretia (NAVAR)	---
			Mediterranean barley (HOMUL)	---
			Brodiaea (BRODI)	---
			Soft chess (BRHOH)	---
			Coyote thistle (ERCA33)	---
			Spikerush (ELEOC)	---
			Soft blow wifes (ACMO2)	---
			Goldfields (LASTH)	---
			Clover (TRIFO)	---
			Fremont's deathcamas (ZIFR)	---
			Meadowfoam (LIMNA)	---
			Butter-n-eggs (TRERE2)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
622: Typic Haploxeralfs---	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Interior live oak (QUWI2)	---	Interior live oak (QUWI2)	---
	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Manzanita (ARCTO3)	---
			Buckbrush (CECU)	---
			Filaree (ERODI)	---
			Soft chess (BRHOH)	---
			Ryegrass (LOLIU)	---
			Wild oat (AVFA)	---
			Brodiaea (BRODI)	---
			Red brome (BRRU2)	---
			Mediterranean barley (HOMUL)	---
			Medusahead (TACA8)	---
			California buckeye (AECA)	---
			Ripgut brome (BRDI3)	---
			Yellow starthistle (CESO3)	---
			Clover (TRIFO)	---
			Hairypink (PEDU2)	---
			Mouse barley (HOMAG)	---
			Toyon (HEAR5)	---
			Yerba santa (ERIOD)	---
			California buckthorn (FRCAT2)	---
			Miners lettuce (CLPE)	---
			Navarretia (NAVAR)	---
			California redbud (CEOR9)	---
			Scrub oak (QUBE5)	---
Rock outcrop.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
623: Typic Haploxeralfs---	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Interior live oak (QUWI2)	---	Interior live oak (QUWI2)	---
	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Manzanita (ARCTO3)	---
			Buckbrush (CECU)	---
			Filaree (ERODI)	---
			Soft chess (BRHOH)	---
			Ryegrass (LOLIU)	---
			Wild oat (AVFA)	---
			Brodiaea (BRODI)	---
			Red brome (BRRU2)	---
			Mediterranean barley (HOMUL)	---
			Medusahead (TACA8)	---
			California buckeye (AECA)	---
			Ripgut brome (BRDI3)	---
			Yellow starthistle (CESO3)	---
			Clover (TRIFO)	---
			Hairy pink (PEDU2)	---
			Mouse barley (HOMAG)	---
			Toyon (HEAR5)	---
			Yerba santa (ERIOD)	---
			California buckthorn (FRCAT2)	---
			Miners lettuce (CLPE)	---
			Navarretia (NAVAR)	---
			California redbud (CEOR9)	---
			Scrub oak (QUBE5)	---
Rock outcrop.				
624: Ultic Haploxeralfs, mesic-----	California black oak (QUKE)	---	Manzanita (ARCTO3)	---
	Foothill pine (PISA2)	---	Buckbrush (CECU)	---
			Scrub oak (QUBE5)	---
			Hedgehog dogtail (CYEC)	---
			California black oak (QUKE)	---
			Pacific poison oak (TODI)	---
			Foothill pine (PISA2)	---
			California laurel (UMCA)	---
			California buckeye (AECA)	---
			Toyon (HEAR5)	---
			California buckthorn (FRCAT2)	---
			Buckbrush (CECU)	---
			Barbed goatgrass (AETR)	---
			Clover (TRIFO)	---
			Red brome (BRRU2)	---
			Ripgut brome (BRDI3)	---
			Yellow starthistle (CESO3)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
625: Rockstripe-----	---	---	Soft chess (BRHOH) Red brome (BRRU2) Wild oat (AVFA) Hairypink (PEDU2) Hedgehog dogtail (CYEC) Pacific poison oak (TODI) Foxtail fescue (FEME) Hansen's spikemoss (SEHA2) Buckbrush (CECU) Manzanita (ARCTO3) California laurel (UMCA) Scrub oak (QUBE5) Yerba santa (ERIOD) Foothill pine (PISA2) Canyon live oak (QUCH2) Interior live oak (QUWI2) Yellow starthistle (CESO3) Buckbrush (CECU)	--- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---
626: Ultic Haploxeralfs---	Canyon live oak (QUCH2) California black oak (QUKE) Interior live oak (QUWI2) Foothill pine (PISA2)	--- --- --- ---	Scrub oak (QUBE5) Canyon live oak (QUCH2) California black oak (QUKE) Interior live oak (QUWI2) California laurel (UMCA) Pacific poison oak (TODI) Manzanita (ARCTO3) Foothill pine (PISA2) California buckeye (AECA) Deerbrush (CEIN3) Toyon (HEAR5) California buckthorn (FRCAT2) California redbud (CEOR9) Buckbrush (CECU) Buckbrush (CECU)	--- --- --- --- --- --- --- --- --- --- --- --- --- --- ---
Rockstripe-----	---	---	Soft chess (BRHOH) Red brome (BRRU2) Wild oat (AVFA) Hairypink (PEDU2) Hedgehog dogtail (CYEC) Pacific poison oak (TODI) Foxtail fescue (FEME) Hansen's spikemoss (SEHA2) Buckbrush (CECU) Manzanita (ARCTO3) California laurel (UMCA) Scrub oak (QUBE5) Yerba santa (ERIOD) Foothill pine (PISA2) Canyon live oak (QUCH2) Interior live oak (QUWI2) Yellow starthistle (CESO3) Buckbrush (CECU)	--- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---
Rock outcrop.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
628: Ultic Haploxeralfs---	Canyon live oak (QUCH2)	---	Scrub oak (QUBE5)	---
	California black oak (QUKE)	---	Canyon live oak (QUCH2)	---
	Interior live oak (QUWI2)	---	California black oak (QUKE)	---
	Foothill pine (PISA2)	---	Interior live oak (QUWI2)	---
			California laurel (UMCA)	---
			Pacific poison oak (TODI)	---
			Manzanita (ARCTO3)	---
			Foothill pine (PISA2)	---
			California buckeye (AECA)	---
			Deerbrush (CEIN3)	---
			Toyon (HEAR5)	---
			California buckthorn (FRCAT2)	---
			California redbud (CEOR9)	---
			Buckbrush (CECU)	---
Rock outcrop.				
629: Slideland-----	Blue oak (QUDO)	---	Toyon (HEAR5)	5
	Canyon live oak (QUCH2)	---	Hedgehog dogtail (CYEC)	---
	Valley oak (QULO)	---	Western brackenfern (PTAQ)	5
	Ponderosa pine (PIPO)	75	California laurel (UMCA)	5
	California black oak (QUKE)	20	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	5	Hedgehog dogtail (CYEC)	7
			Whiteleaf manzanita (ARMA)	1
			Orcutt brome (BROR2)	1
			Incense cedar (CADE27)	1
			Deerbrush (CEIN3)	1
			Pacific dogwood (CONU4)	1
			Canyon live oak (QUCH2)	1
			California black oak (QUKE)	1
			California wild grape (VICA5)	1
			Bigleaf maple (ACMA3)	---
			Wild oat (AVFA)	---
			Beggartick (sticktight) (BIFR)	---
			Soft chess (BRHOH)	---
			Yellow starthistle (CESO3)	---
			California buckthorn (FRCAT2)	---
			Foothill pine (PISA2)	---
			Blue oak (QUDO)	---
			Clover (TRIFO)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
630: Slideland-----	Blue oak (QUDO)	---	Toyon (HEAR5)	5
	Canyon live oak (QUCH2)	---	Hedgehog dogtail (CYEC)	---
	Valley oak (QULO)	---	Western brackenfern (PTAQ)	5
	Ponderosa pine (PIPO)	75	California laurel (UMCA)	5
	California black oak (QUKE)	20	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	5	Hedgehog dogtail (CYEC)	7
			Whiteleaf manzanita (ARMA)	1
			Orcutt brome (BROR2)	1
			Incense cedar (CADE27)	1
			Deerbrush (CEIN3)	1
			Pacific dogwood (CONU4)	1
			Canyon live oak (QUCH2)	1
			California black oak (QUKE)	1
			California wild grape (VICA5)	1
			Bigleaf maple (ACMA3)	---
			Wild oat (AVFA)	---
			Beggartick (sticktight) (BIFR)	---
			Soft chess (BRHOH)	---
			Yellow starthistle (CESO3)	---
			California buckthorn (FRCAT2)	---
			Foothill pine (PISA2)	---
			Blue oak (QUDO)	---
			Clover (TRIFO)	---
631: Slideland-----	Blue oak (QUDO)	---	Toyon (HEAR5)	5
	Canyon live oak (QUCH2)	---	Hedgehog dogtail (CYEC)	---
	Valley oak (QULO)	---	Western brackenfern (PTAQ)	5
	Ponderosa pine (PIPO)	75	California laurel (UMCA)	5
	California black oak (QUKE)	20	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	5	Hedgehog dogtail (CYEC)	7
			Whiteleaf manzanita (ARMA)	1
			Orcutt brome (BROR2)	1
			Incense cedar (CADE27)	1
			Deerbrush (CEIN3)	1
			Pacific dogwood (CONU4)	1
			Canyon live oak (QUCH2)	1
			California black oak (QUKE)	1
			California wild grape (VICA5)	1
			Bigleaf maple (ACMA3)	---
			Wild oat (AVFA)	---
			Beggartick (sticktight) (BIFR)	---
			Soft chess (BRHOH)	---
			Yellow starthistle (CESO3)	---
			California buckthorn (FRCAT2)	---
			Foothill pine (PISA2)	---
			Blue oak (QUDO)	---
			Clover (TRIFO)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
633: Ultic Haploxeralfs, conglomerate, very deep-----	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Blue oak (QUDO)	---	California black oak (QUKE)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
	California black oak (QUKE)	---	Hedgehog dogtail (CYEC)	---
	Douglas-fir (PSME)	---	Pacific poison oak (TODI)	---
	Ponderosa pine (PIPO)	---	Toyon (HEAR5)	---
	Incense cedar (CADE27)	---	Scrub oak (QUBE5)	---
	Valley oak (QULO)	---	Manzanita (ARCTO3)	---
			California laurel (UMCA)	---
			California buckeye (AECA)	---
			Buckbrush (CECU)	---
			Blue oak (QUDO)	---
			Tanoak (LIDE3)	---
			Douglas-fir (PSME)	---
			Bigleaf maple (ACMA3)	---
			Ponderosa pine (PIPO)	---
			Incense cedar (CADE27)	---
		Valley oak (QULO)	---	
		Yellow starthistle (CESO3)	---	
		Wild oat (AVFA)	---	
		Clover (TRIFO)	---	
		Red brome (BRRU2)	---	
		Hairypink (PEDU2)	---	
Ultic Haploxeralfs, conglomerate, moderately deep	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
	California black oak (QUKE)	---	Hedgehog dogtail (CYEC)	---
			Toyon (HEAR5)	---
			Manzanita (ARCTO3)	---
			California black oak (QUKE)	---
			California laurel (UMCA)	---
			California buckeye (AECA)	---
			Hairypink (PEDU2)	---
			Red brome (BRRU2)	---
		Yellow starthistle (CESO3)	---	
		Clover (TRIFO)	---	
		Wild oat (AVFA)	---	

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
635: Ultic Haploxeralfs, conglomerate, very deep-----	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Blue oak (QUDO)	---	California black oak (QUKE)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
	California black oak (QUKE)	---	Hedgehog dogtail (CYEC)	---
	Douglas-fir (PSME)	---	Pacific poison oak (TODI)	---
	Ponderosa pine (PIPO)	---	Toyon (HEAR5)	---
	Incense cedar (CADE27)	---	Scrub oak (QUBE5)	---
	Valley oak (QULO)	---	Manzanita (ARCTO3)	---
			California laurel (UMCA)	---
			California buckeye (AECA)	---
			Buckbrush (CECU)	---
			Blue oak (QUDO)	---
			Tanoak (LIDE3)	---
			Douglas-fir (PSME)	---
			Bigleaf maple (ACMA3)	---
			Ponderosa pine (PIPO)	---
			Incense cedar (CADE27)	---
			Valley oak (QULO)	---
			Yellow starthistle (CESO3)	---
			Wild oat (AVFA)	---
		Clover (TRIFO)	---	
		Red brome (BRRU2)	---	
		Hairypink (PEDU2)	---	
Ultic Haploxeralfs, conglomerate, moderately deep	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
	California black oak (QUKE)	---	Hedgehog dogtail (CYEC)	---
			Toyon (HEAR5)	---
			Manzanita (ARCTO3)	---
			California black oak (QUKE)	---
			California laurel (UMCA)	---
			California buckeye (AECA)	---
			Hairypink (PEDU2)	---
			Red brome (BRRU2)	---
			Yellow starthistle (CESO3)	---
		Clover (TRIFO)	---	
		Wild oat (AVFA)	---	

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
636: Ultic Haploxeralfs, conglomerate, moderately deep	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
	California black oak (QUKE)	---	Hedgehog dogtail (CYEC)	---
			Toyon (HEAR5)	---
			Manzanita (ARCTO3)	---
			California black oak (QUKE)	---
			California laurel (UMCA)	---
			California buckeye (AECA)	---
			Hairy pink (PEDU2)	---
			Red brome (BRRU2)	---
			Yellow starthistle (CESO3)	---
			Clover (TRIFO)	---
			Wild oat (AVFA)	---
Ultic Haploxeralfs, conglomerate, very deep-----	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Blue oak (QUDO)	---	California black oak (QUKE)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
	California black oak (QUKE)	---	Hedgehog dogtail (CYEC)	---
	Douglas-fir (PSME)	---	Pacific poison oak (TODI)	---
	Ponderosa pine (PIPO)	---	Toyon (HEAR5)	---
	Incense cedar (CADE27)	---	Scrub oak (QUBE5)	---
	Valley oak (QULO)	---	Manzanita (ARCTO3)	---
			California laurel (UMCA)	---
			California buckeye (AECA)	---
			Buckbrush (CECU)	---
			Blue oak (QUDO)	---
			Tanoak (LIDE3)	---
			Douglas-fir (PSME)	---
			Bigleaf maple (ACMA3)	---
			Ponderosa pine (PIPO)	---
			Incense cedar (CADE27)	---
			Valley oak (QULO)	---
			Yellow starthistle (CESO3)	---
			Wild oat (AVFA)	---
			Clover (TRIFO)	---
			Red brome (BRRU2)	---
			Hairy pink (PEDU2)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
637: Ultic Haploxeralfs, sandstone-----	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	California black oak (QUKE)	---	California black oak (QUKE)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
	Ponderosa pine (PIPO)	---	Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Ponderosa pine (PIPO)	---
			Manzanita (ARCTO3)	---
			Deerbrush (CEIN3)	---
			California laurel (UMCA)	---
			Bigleaf maple (ACMA3)	---
			Toyon (HEAR5)	---
			Clover (TRIFO)	---
			Beggartick (sticktights) (BIFR)	---
		Red brome (BRRU2)	---	
		Yellow starthistle (CESO3)	---	
638: Ultic Haploxeralfs, sandstone-----	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	California black oak (QUKE)	---	California black oak (QUKE)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
	Ponderosa pine (PIPO)	---	Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Ponderosa pine (PIPO)	---
			Manzanita (ARCTO3)	---
			Deerbrush (CEIN3)	---
			California laurel (UMCA)	---
			Bigleaf maple (ACMA3)	---
			Toyon (HEAR5)	---
			Clover (TRIFO)	---
			Beggartick (sticktights) (BIFR)	---
		Red brome (BRRU2)	---	
		Yellow starthistle (CESO3)	---	

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
641: Ultic Haploxeralfs, sandstone-----	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Douglas-fir (PSME)	---	Douglas-fir (PSME)	---
	California black oak (QUKE)	---	California black oak (QUKE)	---
	Incense cedar (CADE27)	---	Hedgehog dogtail (CYEC)	---
	Ponderosa pine (PIPO)	---	Incense cedar (CADE27)	---
			Pacific poison oak (TODI)	---
			Ponderosa pine (PIPO)	---
			Manzanita (ARCTO3)	---
			Deerbrush (CEIN3)	---
			California laurel (UMCA)	---
			Bigleaf maple (ACMA3)	---
			Toyon (HEAR5)	---
			California wild grape (VICA5)	---
		Beggartick (stickights) (BIFR)	---	
642: Chinacamp-----	Canyon live oak (QUCH2)	---	California black oak (QUKE)	---
	Foothill pine (PISA2)	---	California laurel (UMCA)	---
	Blue oak (QUDO)	---	California wild grape (VICA5)	---
	Ponderosa pine (PIPO)	---	Bigleaf maple (ACMA3)	---
	California black oak (QUKE)	---	Blue oak (QUDO)	---
	Valley oak (QULO)	---	Canyon live oak (QUCH2)	---
	Interior live oak (QUWI2)	---	Deerbrush (CEIN3)	---
			Foothill pine (PISA2)	---
			Interior live oak (QUWI2)	---
			Manzanita (ARCTO3)	---
			Ponderosa pine (PIPO)	---
			Valley oak (QULO)	---
			Hedgehog dogtail (CYEC)	---
		Pacific poison oak (TODI)	---	
643: Chinacamp-----	Canyon live oak (QUCH2)	---	California black oak (QUKE)	---
	Foothill pine (PISA2)	---	California laurel (UMCA)	---
	Blue oak (QUDO)	---	California wild grape (VICA5)	---
	Ponderosa pine (PIPO)	---	Bigleaf maple (ACMA3)	---
	California black oak (QUKE)	---	Blue oak (QUDO)	---
	Valley oak (QULO)	---	Canyon live oak (QUCH2)	---
	Interior live oak (QUWI2)	---	Deerbrush (CEIN3)	---
			Foothill pine (PISA2)	---
			Interior live oak (QUWI2)	---
			Manzanita (ARCTO3)	---
			Ponderosa pine (PIPO)	---
			Valley oak (QULO)	---
			Hedgehog dogtail (CYEC)	---
		Pacific poison oak (TODI)	---	

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
644: Chinacamp-----	Canyon live oak (QUCH2)	---	California black oak (QUKE)	---
	Foothill pine (PISA2)	---	California laurel (UMCA)	---
	Blue oak (QUDO)	---	California wild grape (VICA5)	---
	Ponderosa pine (PIPO)	---	Bigleaf maple (ACMA3)	---
	California black oak (QUKE)	---	Blue oak (QUDO)	---
	Valley oak (QULO)	---	Canyon live oak (QUCH2)	---
	Interior live oak (QUWI2)	---	Deerbrush (CEIN3)	---
			Foothill pine (PISA2)	---
			Interior live oak (QUWI2)	---
			Manzanita (ARCTO3)	---
			Ponderosa pine (PIPO)	---
			Valley oak (QULO)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
645: Chinacamp-----	Canyon live oak (QUCH2)	---	California black oak (QUKE)	---
	Foothill pine (PISA2)	---	California laurel (UMCA)	---
	Blue oak (QUDO)	---	California wild grape (VICA5)	---
	Ponderosa pine (PIPO)	---	Bigleaf maple (ACMA3)	---
	California black oak (QUKE)	---	Blue oak (QUDO)	---
	Valley oak (QULO)	---	Canyon live oak (QUCH2)	---
	Interior live oak (QUWI2)	---	Deerbrush (CEIN3)	---
			Foothill pine (PISA2)	---
			Interior live oak (QUWI2)	---
			Manzanita (ARCTO3)	---
			Ponderosa pine (PIPO)	---
			Valley oak (QULO)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
646: Coalcanyon taxadjunct-----	Blue oak (QUDO)	---	California buckeye (AECA)	---
	Foothill pine (PISA2)	---	California laurel (UMCA)	---
	Interior live oak (QUWI2)	---	Beggartick (sticktight)	---
	Valley oak (QULO)	---	(BIFR)	---
	Canyon live oak (QUCH2)	---	Blue oak (QUDO)	---
			Canyon live oak (QUCH2)	---
			Clover (TRIFO)	---
			Deerbrush (CEIN3)	---
			Foothill pine (PISA2)	---
			Interior live oak (QUWI2)	---
			Manzanita (ARCTO3)	---
			Red brome (BRRU2)	---
			Soft chess (BRHOH)	---
			Toyon (HEAR5)	---
			Valley oak (QULO)	---
			Wild oat (AVFA)	---
			Yellow starthistle (CESO3)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
647: Coalcanyon taxadjunct-----	Blue oak (QUDO)	---	California buckeye (AECA)	---
	Foothill pine (PISA2)	---	California laurel (UMCA)	---
	Interior live oak (QUWI2)	---	Beggartick (sticktight)	---
	Valley oak (QULO)	---	(BIFR)	
	Canyon live oak (QUCH2)	---	Blue oak (QUDO)	---
			Canyon live oak (QUCH2)	---
			Clover (TRIFO)	---
			Deerbrush (CEIN3)	---
			Foothill pine (PISA2)	---
			Interior live oak (QUWI2)	---
			Manzanita (ARCTO3)	---
			Red brome (BRRU2)	---
			Soft chess (BRHOH)	---
			Toyon (HEAR5)	---
			Valley oak (QULO)	---
			Wild oat (AVFA)	---
			Yellow starthistle (CESO3)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
648: Coalcanyon taxadjunct-----	Blue oak (QUDO)	---	California buckeye (AECA)	---
	Foothill pine (PISA2)	---	California laurel (UMCA)	---
	Interior live oak (QUWI2)	---	Beggartick (sticktight)	---
	Valley oak (QULO)	---	(BIFR)	
	Canyon live oak (QUCH2)	---	Blue oak (QUDO)	---
			Canyon live oak (QUCH2)	---
			Clover (TRIFO)	---
			Deerbrush (CEIN3)	---
			Foothill pine (PISA2)	---
			Interior live oak (QUWI2)	---
			Manzanita (ARCTO3)	---
			Red brome (BRRU2)	---
			Soft chess (BRHOH)	---
			Toyon (HEAR5)	---
			Valley oak (QULO)	---
			Wild oat (AVFA)	---
			Yellow starthistle (CESO3)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
649: Coalcanyon taxadjunct-----	Blue oak (QUDO)	---	California buckeye (AECA)	---
	Foothill pine (PISA2)	---	California laurel (UMCA)	---
	Interior live oak (QUWI2)	---	Beggartick (stickights)	---
	Valley oak (QULO)	---	(BIFR)	---
	Canyon live oak (QUCH2)	---	Blue oak (QUDO)	---
			Canyon live oak (QUCH2)	---
			Clover (TRIFO)	---
			Deerbrush (CEIN3)	---
			Foothill pine (PISA2)	---
			Interior live oak (QUWI2)	---
			Manzanita (ARCTO3)	---
			Red brome (BRRU2)	---
			Soft chess (BRHOH)	---
			Toyon (HEAR5)	---
			Valley oak (QULO)	---
			Wild oat (AVFA)	---
			Yellow starthistle (CESO3)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
650: Schott-----	Ponderosa pine (PIPO)	50	Whiteleaf manzanita (ARMA)	20
	Douglas-fir (PSME)	25	California buckthorn (FRCAT2)	10
	Incense cedar (CADE27)	8	Incense cedar (CADE27)	8
	Canyon live oak (QUCH2)	7	Pacific poison oak (TODI)	---
	California black oak (QUKE)	7	Greenleaf manzanita (ARPA6)	8
	Sugar pine (PILA)	3	Douglas-fir (PSME)	5
			Canyon live oak (QUCH2)	5
			Lemmon ceanothus (CELE)	3
			California black oak (QUKE)	3
			Deerbrush (CEIN3)	3
			Western brackenfern (PTAQ)	3
			California laurel (UMCA)	3
			Ponderosa pine (PIPO)	1
			California torreyia (TOCA)	1
651: Schott-----	Ponderosa pine (PIPO)	50	Whiteleaf manzanita (ARMA)	20
	Douglas-fir (PSME)	25	California buckthorn (FRCAT2)	10
	Incense cedar (CADE27)	8	Incense cedar (CADE27)	8
	Canyon live oak (QUCH2)	7	Pacific poison oak (TODI)	---
	California black oak (QUKE)	7	Greenleaf manzanita (ARPA6)	8
	Sugar pine (PILA)	3	Douglas-fir (PSME)	5
			Canyon live oak (QUCH2)	5
			Lemmon ceanothus (CELE)	3
			California black oak (QUKE)	3
			Deerbrush (CEIN3)	3
			Western brackenfern (PTAQ)	3
			California laurel (UMCA)	3
			Ponderosa pine (PIPO)	1
			California torreyia (TOCA)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
652:				
Schott-----	Ponderosa pine (PIPO)	50	Whiteleaf manzanita (ARMA)	20
	Douglas-fir (PSME)	25	California buckthorn (FRCAT2)	10
	Incense cedar (CADE27)	8	Incense cedar (CADE27)	8
	Canyon live oak (QUCH2)	7	Pacific poison oak (TODI)	---
	California black oak (QUKE)	7	Greenleaf manzanita (ARPA6)	8
	Sugar pine (PILA)	3	Douglas-fir (PSME)	5
			Canyon live oak (QUCH2)	5
			Lemmon ceanothus (CELE)	3
			California black oak (QUKE)	3
			Deerbrush (CEIN3)	3
			Western brackenfern (PTAQ)	3
			California laurel (UMCA)	3
			Ponderosa pine (PIPO)	1
			California torreyia (TOCA)	1
Rock outcrop.				
654:				
Coridge-----	Blue oak (QUDO)	---	Mediterranean barley (HOMUL)	---
	Foothill pine (PISA2)	---	Blue oak (QUDO)	---
	Interior live oak (QUWI2)	---	Brodiaea (BRODI)	---
			Buckbrush (CECU)	---
			Buckbrush (CECU)	---
			Chamise (ADFA)	---
			Dandelion (TARAX)	---
			Filaree (ERODI)	---
			Foothill pine (PISA2)	---
			Foxtail fescue (FEME)	---
			Hairgrass (DESCH)	---
			Interior live oak (QUWI2)	---
			Manzanita (ARCTO3)	---
			Navarretia (NAVAR)	---
			Red brome (BRRU2)	---
			Scrub oak (QUBE5)	---
			Soft chess (BRHOH)	---
			Yerba santa (ERIOD)	---
			Pacific poison oak (TODI)	---
Rock outcrop.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
657:				
Bonneyridge-----	Ponderosa pine (PIPO)	25	White fir (ABCO)	11
	Sugar pine (PILA)	24	Incense cedar (CADE27)	10
	White fir (ABCO)	22	Tanoak (LIDE3)	9
	Incense cedar (CADE27)	14	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	8	Western brackenfern (PTAQ)	4
	Douglas-fir (PSME)	6	Greenleaf manzanita (ARPA6)	3
	Pacific madrone (ARME)	1	Pacific dogwood (CONU4)	3
			Sierra chinquapin (CHSE11)	2
			Deerbrush (CEIN3)	2
			California black oak (QUKE)	2
			California hazel (COCOC)	2
			Sugar pine (PILA)	2
			Whiteleaf manzanita (ARMA)	1
			Common snowberry (SYAL)	1
			Pipsissewa (CHUM)	1
			Whitevein shinleaf (PYPI2)	1
			California needlegrass (ACOCC)	1
			Iris (IRIS)	1
			Sierra gooseberry (RIRO)	1
			Broadleaf starflower (TRBOL)	1
			Lupine (LUPIN)	1
			Ponderosa pine (PIPO)	1
Chawanakee-----	Ponderosa pine (PIPO)	43	Canyon live oak (QUCH2)	10
	Sugar pine (PILA)	23	Whiteleaf manzanita (ARMA)	10
	White fir (ABCO)	14	Greenleaf manzanita (ARPA6)	8
	Incense cedar (CADE27)	10	Shrub tanoak (LIDEE)	7
	Canyon live oak (QUCH2)	7	Sugar pine (PILA)	4
	California black oak (QUKE)	3	Ponderosa pine (PIPO)	4
			White fir (ABCO)	4
			Incense cedar (CADE27)	2
			Whitethorn ceanothus (CECO)	2
			Sierra chinquapin (CHSE11)	2
			Western brackenfern (PTAQ)	1
Rock outcrop.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
658:				
Bonneyridge-----	Ponderosa pine (PIPO)	25	White fir (ABCO)	11
	Sugar pine (PILA)	24	Incense cedar (CADE27)	10
	White fir (ABCO)	22	Tanoak (LIDE3)	9
	Incense cedar (CADE27)	14	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	8	Western brackenfern (PTAQ)	4
	Douglas-fir (PSME)	6	Greenleaf manzanita (ARPA6)	3
	Pacific madrone (ARME)	1	Pacific dogwood (CONU4)	3
			Sierra chinquapin (CHSE11)	2
			Deerbrush (CEIN3)	2
			California black oak (QUKE)	2
			California hazel (COCOC)	2
			Sugar pine (PILA)	2
			Whiteleaf manzanita (ARMA)	1
			Common snowberry (SYAL)	1
			Pipsissewa (CHUM)	1
			Whitevein shinleaf (PYPI2)	1
			California needlegrass (ACOCC)	1
			Iris (IRIS)	1
			Sierra gooseberry (RIRO)	1
			Broadleaf starflower (TRBOL)	1
			Lupine (LUPIN)	1
			Ponderosa pine (PIPO)	1
Chawanakee-----	Ponderosa pine (PIPO)	43	Canyon live oak (QUCH2)	10
	Sugar pine (PILA)	23	Whiteleaf manzanita (ARMA)	10
	White fir (ABCO)	14	Greenleaf manzanita (ARPA6)	8
	Incense cedar (CADE27)	10	Shrub tanoak (LIDEE)	7
	Canyon live oak (QUCH2)	7	Sugar pine (PILA)	4
	California black oak (QUKE)	3	Ponderosa pine (PIPO)	4
			White fir (ABCO)	4
			Incense cedar (CADE27)	2
			Whitethorn ceanothus (CECO)	2
			Sierra chinquapin (CHSE11)	2
			Western brackenfern (PTAQ)	1
Rock outcrop.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
659:				
Bonneyridge-----	Ponderosa pine (PIPO)	25	White fir (ABCO)	11
	Sugar pine (PILA)	24	Incense cedar (CADE27)	10
	White fir (ABCO)	22	Tanoak (LIDE3)	9
	Incense cedar (CADE27)	14	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	8	Western brackenfern (PTAQ)	4
	Douglas-fir (PSME)	6	Greenleaf manzanita (ARPA6)	3
	Pacific madrone (ARME)	1	Pacific dogwood (CONU4)	3
			Sierra chinquapin (CHSE11)	2
			Deerbrush (CEIN3)	2
			California black oak (QUKE)	2
			California hazel (COCOC)	2
			Sugar pine (PILA)	2
			Whiteleaf manzanita (ARMA)	1
			Common snowberry (SYAL)	1
			Pipsissewa (CHUM)	1
			Whitevein shinleaf (PYPI2)	1
			California needlegrass (ACOCC)	1
			Iris (IRIS)	1
			Sierra gooseberry (RIRO)	1
			Broadleaf starflower (TRBOL)	1
			Lupine (LUPIN)	1
			Ponderosa pine (PIPO)	1
Chawanakee-----	Ponderosa pine (PIPO)	43	Canyon live oak (QUCH2)	10
	Sugar pine (PILA)	23	Whiteleaf manzanita (ARMA)	10
	White fir (ABCO)	14	Greenleaf manzanita (ARPA6)	8
	Incense cedar (CADE27)	10	Shrub tanoak (LIDEE)	7
	Canyon live oak (QUCH2)	7	Sugar pine (PILA)	4
	California black oak (QUKE)	3	Ponderosa pine (PIPO)	4
			White fir (ABCO)	4
			Incense cedar (CADE27)	2
			Whitethorn ceanothus (CECO)	2
			Sierra chinquapin (CHSE11)	2
			Western brackenfern (PTAQ)	1
Rock outcrop.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
660:				
Bonneyridge-----	Ponderosa pine (PIPO)	25	White fir (ABCO)	11
	Sugar pine (PILA)	24	Incense cedar (CADE27)	10
	White fir (ABCO)	22	Tanoak (LIDE3)	9
	Incense cedar (CADE27)	14	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	8	Western brackenfern (PTAQ)	4
	Douglas-fir (PSME)	6	Greenleaf manzanita (ARPA6)	3
	Pacific madrone (ARME)	1	Pacific dogwood (CONU4)	3
			Sierra chinquapin (CHSE11)	2
			Deerbrush (CEIN3)	2
			California black oak (QUKE)	2
			California hazel (COCOC)	2
			Sugar pine (PILA)	2
			Whiteleaf manzanita (ARMA)	1
			Common snowberry (SYAL)	1
			Pipsissewa (CHUM)	1
			Whitevein shinleaf (PYPI2)	1
			California needlegrass (ACOCC)	1
			Iris (IRIS)	1
			Sierra gooseberry (RIRO)	1
			Broadleaf starflower (TRBOL)	1
			Lupine (LUPIN)	1
			Ponderosa pine (PIPO)	1
Chawanakee-----	Ponderosa pine (PIPO)	43	Canyon live oak (QUCH2)	10
	Sugar pine (PILA)	23	Whiteleaf manzanita (ARMA)	10
	White fir (ABCO)	14	Greenleaf manzanita (ARPA6)	8
	Incense cedar (CADE27)	10	Shrub tanoak (LIDEE)	7
	Canyon live oak (QUCH2)	7	Sugar pine (PILA)	4
	California black oak (QUKE)	3	Ponderosa pine (PIPO)	4
			White fir (ABCO)	4
			Incense cedar (CADE27)	2
			Whitethorn ceanothus (CECO)	2
			Sierra chinquapin (CHSE11)	2
			Western brackenfern (PTAQ)	1
Rock outcrop.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
661:				
Millerridge-----	Blue oak (QUDO)	---	California buckthorn (FRCAT2)	---
	Canyon live oak (QUCH2)	---	California laurel (UMCA)	---
	Foothill pine (PISA2)	---	Blue oak (QUDO)	---
			Buckbrush (CECU)	---
			Canyon live oak (QUCH2)	---
			Foothill pine (PISA2)	---
			Toyon (HEAR5)	---
			Whiteleaf manzanita (ARMA)	---
			Yellow starthistle (CESO3)	---
Boxrobber-----	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Canyon live oak (QUCH2)	---	Whiteleaf manzanita (ARMA)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
			California laurel (UMCA)	---
			Hedgehog dogtail (CYEC)	---
			Canyon live oak (QUCH2)	---
			Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			Yellow starthistle (CESO3)	---
			Medusahead (TACA8)	---
			Clover (TRIFO)	---
			Wild oat (AVFA)	---
			Wheatgrass (AGROP2)	---
662:				
Millerridge-----	Blue oak (QUDO)	---	California buckthorn (FRCAT2)	---
	Canyon live oak (QUCH2)	---	California laurel (UMCA)	---
	Foothill pine (PISA2)	---	Blue oak (QUDO)	---
			Buckbrush (CECU)	---
			Canyon live oak (QUCH2)	---
			Foothill pine (PISA2)	---
			Toyon (HEAR5)	---
			Whiteleaf manzanita (ARMA)	---
			Yellow starthistle (CESO3)	---
Boxrobber-----	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Canyon live oak (QUCH2)	---	Whiteleaf manzanita (ARMA)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
			California laurel (UMCA)	---
			Hedgehog dogtail (CYEC)	---
			Canyon live oak (QUCH2)	---
			Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			Yellow starthistle (CESO3)	---
			Medusahead (TACA8)	---
			Clover (TRIFO)	---
			Wild oat (AVFA)	---
			Wheatgrass (AGROP2)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
663:				
Millerridge-----	Blue oak (QUDO)	---	California buckthorn (FRCAT2)	---
	Canyon live oak (QUCH2)	---	California laurel (UMCA)	---
	Foothill pine (PISA2)	---	Blue oak (QUDO)	---
			Buckbrush (CECU)	---
			Canyon live oak (QUCH2)	---
			Foothill pine (PISA2)	---
			Toyon (HEAR5)	---
			Whiteleaf manzanita (ARMA)	---
			Yellow starthistle (CESO3)	---
Boxrobber-----	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Canyon live oak (QUCH2)	---	Whiteleaf manzanita (ARMA)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
			California laurel (UMCA)	---
			Hedgehog dogtail (CYEC)	---
			Canyon live oak (QUCH2)	---
			Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			Yellow starthistle (CESO3)	---
			Medusahead (TACA8)	---
			Clover (TRIFO)	---
			Wild oat (AVFA)	---
			Wheatgrass (AGROP2)	---
664:				
Millerridge-----	Blue oak (QUDO)	---	California buckthorn (FRCAT2)	---
	Canyon live oak (QUCH2)	---	California laurel (UMCA)	---
	Foothill pine (PISA2)	---	Blue oak (QUDO)	---
			Buckbrush (CECU)	---
			Canyon live oak (QUCH2)	---
			Foothill pine (PISA2)	---
			Toyon (HEAR5)	---
			Whiteleaf manzanita (ARMA)	---
			Yellow starthistle (CESO3)	---
Boxrobber-----	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Canyon live oak (QUCH2)	---	Whiteleaf manzanita (ARMA)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
			California laurel (UMCA)	---
			Hedgehog dogtail (CYEC)	---
			Canyon live oak (QUCH2)	---
			Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			Yellow starthistle (CESO3)	---
			Medusahead (TACA8)	---
			Clover (TRIFO)	---
			Wild oat (AVFA)	---
			Wheatgrass (AGROP2)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
665:				
Surnuf-----	Ponderosa pine (PIPO)	27	Tanoak (LIDE3)	11
	Douglas-fir (PSME)	19	Whiteleaf manzanita (ARMA)	8
	California black oak (QUKE)	17	Canyon live oak (QUCH2)	8
	Canyon live oak (QUCH2)	17	Pacific poison oak (TODI)	--
	Pacific madrone (ARME)	6	Toyon (HEAR5)	8
	Tanoak (LIDE3)	4	California honeysuckle (LOHI2)	5
	Incense cedar (CADE27)	4	Pacific madrone (ARME)	4
	Sugar pine (PILA)	3	California buckthorn (FRCAT2)	4
	Foothill pine (PISA2)	3	California black oak (QUKE)	4
			Pacific dogwood (CONU4)	3
			Deerbrush (CEIN3)	2
			Incense cedar (CADE27)	2
			Douglas-fir (PSME)	2
			Ponderosa pine (PIPO)	2
			Sierra gooseberry (RIRO)	2
			Orcutt brome (BROR2)	1
			Iris (IRIS)	1
Bigridge-----	Ponderosa pine (PIPO)	45	Whiteleaf manzanita (ARMA)	10
	California black oak (QUKE)	28	Toyon (HEAR5)	5
	Interior live oak (QUWI2)	13	Ryegrass (LOLIU)	3
	Pacific madrone (ARME)	5	Pacific poison oak (TODI)	--
	Foothill pine (PISA2)	3	Ponderosa pine (PIPO)	3
	Douglas-fir (PSME)	3	Deerbrush (CEIN3)	3
	Canyon live oak (QUCH2)	3	California buckthorn (FRCAT2)	3
			Canyon live oak (QUCH2)	3
			Bigleaf maple (ACMA3)	1
			Pacific madrone (ARME)	1
666:				
Surnuf-----	Ponderosa pine (PIPO)	27	Tanoak (LIDE3)	11
	Douglas-fir (PSME)	19	Whiteleaf manzanita (ARMA)	8
	California black oak (QUKE)	17	Canyon live oak (QUCH2)	8
	Canyon live oak (QUCH2)	17	Pacific poison oak (TODI)	--
	Pacific madrone (ARME)	6	Toyon (HEAR5)	8
	Tanoak (LIDE3)	4	California honeysuckle (LOHI2)	5
	Incense cedar (CADE27)	4	Pacific madrone (ARME)	4
	Sugar pine (PILA)	3	California buckthorn (FRCAT2)	4
	Foothill pine (PISA2)	3	California black oak (QUKE)	4
			Pacific dogwood (CONU4)	3
			Deerbrush (CEIN3)	2
			Incense cedar (CADE27)	2
			Douglas-fir (PSME)	2
			Ponderosa pine (PIPO)	2
			Sierra gooseberry (RIRO)	2
			Orcutt brome (BROR2)	1
			Iris (IRIS)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
666: Bigridge-----	Ponderosa pine (PIPO)	45	Whiteleaf manzanita (ARMA)	10
	California black oak (QUKE)	28	Toyon (HEAR5)	5
	Interior live oak (QUWI2)	13	Ryegrass (LOLIU)	3
	Pacific madrone (ARME)	5	Pacific poison oak (TODI)	--
	Foothill pine (PISA2)	3	Ponderosa pine (PIPO)	3
	Douglas-fir (PSME)	3	Deerbrush (CEIN3)	3
	Canyon live oak (QUCH2)	3	California buckthorn (FRCAT2)	3
			Canyon live oak (QUCH2)	3
			Bigleaf maple (ACMA3)	1
			Pacific madrone (ARME)	1
667: Surnuf-----	Ponderosa pine (PIPO)	27	Tanoak (LIDE3)	11
	Douglas-fir (PSME)	19	Whiteleaf manzanita (ARMA)	8
	California black oak (QUKE)	17	Canyon live oak (QUCH2)	8
	Canyon live oak (QUCH2)	17	Pacific poison oak (TODI)	--
	Pacific madrone (ARME)	6	Toyon (HEAR5)	8
	Tanoak (LIDE3)	4	California honeysuckle (LOHI2)	5
	Incense cedar (CADE27)	4	Pacific madrone (ARME)	4
	Sugar pine (PILA)	3	California buckthorn (FRCAT2)	4
	Foothill pine (PISA2)	3	California black oak (QUKE)	4
			Pacific dogwood (CONU4)	3
			Deerbrush (CEIN3)	2
			Incense cedar (CADE27)	2
			Douglas-fir (PSME)	2
			Ponderosa pine (PIPO)	2
			Sierra gooseberry (RIRO)	2
			Orcutt brome (BROR2)	1
			Iris (IRIS)	1
Bigridge-----	Ponderosa pine (PIPO)	45	Whiteleaf manzanita (ARMA)	10
	California black oak (QUKE)	28	Toyon (HEAR5)	5
	Interior live oak (QUWI2)	13	Ryegrass (LOLIU)	3
	Pacific madrone (ARME)	5	Pacific poison oak (TODI)	--
	Foothill pine (PISA2)	3	Ponderosa pine (PIPO)	3
	Douglas-fir (PSME)	3	Deerbrush (CEIN3)	3
	Canyon live oak (QUCH2)	3	California buckthorn (FRCAT2)	3
			Canyon live oak (QUCH2)	3
			Bigleaf maple (ACMA3)	1
			Pacific madrone (ARME)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
668:				
Surnuf-----	Ponderosa pine (PIPO)	27	Tanoak (LIDE3)	11
	Douglas-fir (PSME)	19	Whiteleaf manzanita (ARMA)	8
	California black oak (QUKE)	17	Canyon live oak (QUCH2)	8
	Canyon live oak (QUCH2)	17	Pacific poison oak (TODI)	---
	Pacific madrone (ARME)	6	Toyon (HEAR5)	8
	Tanoak (LIDE3)	4	California honeysuckle (LOHI2)	5
	Incense cedar (CADE27)	4	Pacific madrone (ARME)	4
	Sugar pine (PILA)	3	California buckthorn (FRCAT2)	4
	Foothill pine (PISA2)	3	California black oak (QUKE)	4
			Pacific dogwood (CONU4)	3
			Deerbrush (CEIN3)	2
			Incense cedar (CADE27)	2
			Douglas-fir (PSME)	2
			Ponderosa pine (PIPO)	2
			Sierra gooseberry (RIRO)	2
			Orcutt brome (BROR2)	1
			Iris (IRIS)	1
Bigridge-----	Ponderosa pine (PIPO)	45	Whiteleaf manzanita (ARMA)	10
	California black oak (QUKE)	28	Toyon (HEAR5)	5
	Interior live oak (QUWI2)	13	Ryegrass (LOLIU)	3
	Pacific madrone (ARME)	5	Pacific poison oak (TODI)	---
	Foothill pine (PISA2)	3	Ponderosa pine (PIPO)	3
	Douglas-fir (PSME)	3	Deerbrush (CEIN3)	3
	Canyon live oak (QUCH2)	3	California buckthorn (FRCAT2)	3
			Canyon live oak (QUCH2)	3
			Bigleaf maple (ACMA3)	1
			Pacific madrone (ARME)	1
669:				
Oroshore-----	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Interior live oak (QUWI2)	---	Blue oak (QUDO)	---
	Blue oak (QUDO)	---	Interior live oak (QUWI2)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Whiteleaf manzanita (ARMA)	---
			Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			California buckthorn (FRCAT2)	---
			Pacific madrone (ARME)	---
			California redbud (CEOR9)	---
			Wild oat (AVFA)	---
			Clover (TRIFO)	---
			Wheatgrass (AGROP2)	---
			Orcutt brome (BROR2)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
669:				
Mounthope-----	Blue oak (QUDO)	---	Canyon live oak (QUCH2)	---
	Foothill pine (PISA2)	---	Interior live oak (QUWI2)	---
	Interior live oak (QUWI2)	---	Blue oak (QUDO)	---
	Ponderosa pine (PIPO)	---	Foothill pine (PISA2)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Whiteleaf manzanita (ARMA)	---
			Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			California buckthorn (FRCAT2)	---
			Ponderosa pine (PIPO)	---
			Wild oat (AVFA)	---
			Wheatgrass (AGROP2)	---
Dunstone-----	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Foothill pine (PISA2)	---	Whiteleaf manzanita (ARMA)	---
			Foothill pine (PISA2)	---
			Buckbrush (CECU)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Toyon (HEAR5)	---
			Wild oat (AVFA)	---
			Wheatgrass (AGROP2)	---
			Ryegrass (LOLIU)	---
670:				
Oroshore-----	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Interior live oak (QUWI2)	---	Blue oak (QUDO)	---
	Blue oak (QUDO)	---	Interior live oak (QUWI2)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Whiteleaf manzanita (ARMA)	---
			Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			California buckthorn (FRCAT2)	---
			Pacific madrone (ARME)	---
			California redbud (CEOR9)	---
			Wild oat (AVFA)	---
			Clover (TRIFO)	---
			Wheatgrass (AGROP2)	---
			Orcutt brome (BROR2)	---
Mounthope-----	Blue oak (QUDO)	---	Canyon live oak (QUCH2)	---
	Foothill pine (PISA2)	---	Interior live oak (QUWI2)	---
	Interior live oak (QUWI2)	---	Blue oak (QUDO)	---
	Ponderosa pine (PIPO)	---	Foothill pine (PISA2)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Whiteleaf manzanita (ARMA)	---
			Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			California buckthorn (FRCAT2)	---
			Ponderosa pine (PIPO)	---
			Wild oat (AVFA)	---
			Wheatgrass (AGROP2)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
672:				
Oroshore-----	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Interior live oak (QUWI2)	---	Blue oak (QUDO)	---
	Blue oak (QUDO)	---	Interior live oak (QUWI2)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Whiteleaf manzanita (ARMA)	---
			Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			California buckthorn (FRCAT2)	---
			Pacific madrone (ARME)	---
			California redbud (CEOR9)	---
			Wild oat (AVFA)	---
			Clover (TRIFO)	---
			Wheatgrass (AGROP2)	---
			Orcutt brome (BROR2)	---
Mounthope-----	Blue oak (QUDO)	---	Canyon live oak (QUCH2)	---
	Foothill pine (PISA2)	---	Interior live oak (QUWI2)	---
	Interior live oak (QUWI2)	---	Blue oak (QUDO)	---
	Ponderosa pine (PIPO)	---	Foothill pine (PISA2)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Whiteleaf manzanita (ARMA)	---
			Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			California buckthorn (FRCAT2)	---
			Ponderosa pine (PIPO)	---
			Wild oat (AVFA)	---
			Wheatgrass (AGROP2)	---
Dunstone-----	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Foothill pine (PISA2)	---	Whiteleaf manzanita (ARMA)	---
			Foothill pine (PISA2)	---
			Buckbrush (CECU)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Toyon (HEAR5)	---
			Wild oat (AVFA)	---
			Wheatgrass (AGROP2)	---
			Ryegrass (LOLIU)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
674:				
Chawanakee-----	Ponderosa pine (PIPO)	43	Canyon live oak (QUCH2)	10
	Sugar pine (PILA)	23	Whiteleaf manzanita	10
	White fir (ABCO)	14	(ARMA)	
	Incense cedar (CADE27)	10	Greenleaf manzanita	8
	Canyon live oak (QUCH2)	7	(ARPA6)	
	California black oak (QUKE)	3	Shrub tanoak (LIDEE)	7
			Sugar pine (PILA)	4
			Ponderosa pine (PIPO)	4
			White fir (ABCO)	4
			Incense cedar (CADE27)	2
			Whitethorn ceanothus (CECO)	2
			Sierra chinquapin (CHSE11)	2
			Western brackenfern (PTAQ)	1
Bonneyridge-----	Ponderosa pine (PIPO)	25	White fir (ABCO)	11
	Sugar pine (PILA)	24	Incense cedar (CADE27)	10
	White fir (ABCO)	22	Tanoak (LIDE3)	9
	Incense cedar (CADE27)	14	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	8	Western brackenfern (PTAQ)	4
	Douglas-fir (PSME)	6	Greenleaf manzanita (ARPA6)	3
	Pacific madrone (ARME)	1	Pacific dogwood (CONU4)	3
			Sierra chinquapin (CHSE11)	2
			Deerbrush (CEIN3)	2
			California black oak (QUKE)	2
			California hazel (COCOC)	2
			Sugar pine (PILA)	2
			Whiteleaf manzanita (ARMA)	1
			Common snowberry (SYAL)	1
			Pipsissewa (CHUM)	1
			Whitevein shinleaf (PYPI2)	1
			California needlegrass (ACOCC)	1
			Iris (IRIS)	1
			Sierra gooseberry (RIRO)	1
			Broadleaf starflower (TRBOL)	1
			Lupine (LUPIN)	1
			Ponderosa pine (PIPO)	1
Rock outcrop.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
683: Typic Haploxeralfs, magnesian-----	Blue oak (QUDO)	---	Whiteleaf manzanita (ARMA)	---
	Foothill pine (PISA2)	---	Buckbrush (CECU)	---
	Canyon live oak (QUCH2)	---	Foothill pine (PISA2)	---
			California laurel (UMCA)	---
			Pacific poison oak (TODI)	---
			Blue oak (QUDO)	---
			Toyon (HEAR5)	---
			Canyon live oak (QUCH2)	---
Earlall-----	Blue oak (QUDO)	---	California laurel (UMCA)	---
	Foothill pine (PISA2)	---	Blue oak (QUDO)	---
			Buckbrush (CECU)	---
			Foothill pine (PISA2)	---
			Toyon (HEAR5)	---
			Whiteleaf manzanita (ARMA)	---
Rock outcrop.				
684: Typic Haploxeralfs, magnesian-----	Blue oak (QUDO)	---	Ryegrass (LOLIU)	---
	Foothill pine (PISA2)	---	Whiteleaf manzanita (ARMA)	---
	Canyon live oak (QUCH2)	---	Buckbrush (CECU)	---
			Medusahead (TACA8)	---
			Foothill pine (PISA2)	---
			Lupine (LUPIN)	---
			California laurel (UMCA)	---
			Soft chess (BRHOH)	---
			Pacific poison oak (TODI)	---
			Blue oak (QUDO)	---
			Mouse barley (HOMAG)	---
			Mediterranean barley (HOMUL)	---
			Toyon (HEAR5)	---
			Brodiaea (BRODI)	---
			Canyon live oak (QUCH2)	---
			Spikerush (ELEOC)	---
			Filaree (ERODI)	---
			Clover (TRIFO)	---
			Vinegarweed (TRLA4)	---
			Popcornflower (PLAGI)	---
			Wild oat (AVFA)	---
	Earlall-----	Blue oak (QUDO)	---	California laurel (UMCA)
Foothill pine (PISA2)		---	Blue oak (QUDO)	---
			Buckbrush (CECU)	---
			Foothill pine (PISA2)	---
			Toyon (HEAR5)	---
		Whiteleaf manzanita (ARMA)	---	
Rock outcrop.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
700:				
Retsongulch-----	Douglas-fir (PSME)	27	Tanoak (LIDE3)	40
	Tanoak (LIDE3)	25	Incense cedar (CADE27)	5
	Canyon live oak (QUCH2)	15	Douglas-fir (PSME)	5
	Ponderosa pine (PIPO)	15	Canyon live oak (QUCH2)	5
	California black oak (QUKE)	5	Whiteleaf manzanita (ARMA)	5
	Sugar pine (PILA)	5	Deerbrush (CEIN3)	1
	Incense cedar (CADE27)	5	Pacific dogwood (CONU4)	1
	White fir (ABCO)	3	California black oak (QUKE)	1
			White fir (ABCO)	1
Flumewall-----	Douglas-fir (PSME)	42	Tanoak (LIDE3)	25
	Ponderosa pine (PIPO)	22	White fir (ABCO)	5
	Tanoak (LIDE3)	10	Incense cedar (CADE27)	5
	California black oak (QUKE)	8	Douglas-fir (PSME)	5
	Incense cedar (CADE27)	7	Whiteleaf manzanita (ARMA)	3
	Sugar pine (PILA)	5	California black oak (QUKE)	3
	Canyon live oak (QUCH2)	5	California honeysuckle (LOHI2)	3
	White fir (ABCO)	1	Deerbrush (CEIN3)	1
			Pacific dogwood (CONU4)	1
701:				
Powellton-----	Ponderosa pine (PIPO)	38	Tanoak (LIDE3)	33
	Douglas-fir (PSME)	23	White fir (ABCO)	5
	Sugar pine (PILA)	13	Incense cedar (CADE27)	3
	Incense cedar (CADE27)	11	Pacific dogwood (CONU4)	2
	White fir (ABCO)	6	Western brackenfern (PTAQ)	2
	Tanoak (LIDE3)	5	Douglas-fir (PSME)	2
	California black oak (QUKE)	2	Orcutt brome (BROR2)	2
	Pacific madrone (ARME)	2	California honeysuckle (LOHI2)	2
			Deerbrush (CEIN3)	1
Obstruction-----	White fir (ABCO)	26	White fir (ABCO)	9
	Ponderosa pine (PIPO)	21	Tanoak (LIDE3)	8
	Douglas-fir (PSME)	18	Incense cedar (CADE27)	7
	Sugar pine (PILA)	17	Whitevein shinleaf (PYPI2)	4
	Incense cedar (CADE27)	8	Pacific dogwood (CONU4)	3
	California black oak (QUKE)	8	Western brackenfern (PTAQ)	3
	Tanoak (LIDE3)	2	Whitethorn ceanothus (CECO)	3
			Sugar pine (PILA)	2
			Douglas-fir (PSME)	2
			California black oak (QUKE)	2
			Bigleaf maple (ACMA3)	2
			Sierra chinquapin (CHSE11)	2
			California hazel (COCOC)	1
			Broadleaf starflower (TRBOL)	1
			Greenleaf manzanita (ARPA6)	1
			Prostrate ceanothus (CEPR)	1
			Sierra gooseberry (RIRO)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
702:				
Cerpone-----	Jeffrey pine (PIJE)	25	Whiteleaf manzanita (ARMA)	15
	Incense cedar (CADE27)	22	Buckbrush (CECU)	10
	Ponderosa pine (PIPO)	20	California laurel (UMCA)	10
	Douglas-fir (PSME)	15	California buckthorn (FRCAT2)	8
	Foothill pine (PISA2)	12	Incense cedar (CADE27)	5
	Sugar pine (PILA)	5	Orcutt brome (BROR2)	3
	California black oak (QUKE)	1	Bottlebrush squirreltail (ELEL5)	3
			Toyon (HEAR5)	3
			Jeffrey pine (PIJE)	3
			Foothill pine (PISA2)	3
			Douglas-fir (PSME)	1
Typic Haploxeralfs, magnesian-----	Foothill pine (PISA2)	---	Whiteleaf manzanita (ARMA)	---
	Jeffrey pine (PIJE)	---	Whitethorn ceanothus (CECO)	---
	Incense cedar (CADE27)	---	Foothill pine (PISA2)	---
			California laurel (UMCA)	---
			Pacific poison oak (TODI)	---
			California buckthorn (FRCAT2)	---
			Toyon (HEAR5)	---
			Scrub oak (QUBE5)	---
			Jeffrey pine (PIJE)	---
			California black oak (QUKE)	---
			Douglas-fir (PSME)	---
			Incense cedar (CADE27)	---
			Ponderosa pine (PIPO)	---
			Bigleaf maple (ACMA3)	---
Earlal-----	Foothill pine (PISA2)	---	Whiteleaf manzanita (ARMA)	---
	Jeffrey pine (PIJE)	---	Buckbrush (CECU)	---
	Ponderosa pine (PIPO)	---	California laurel (UMCA)	---
	Incense cedar (CADE27)	---	Canyon live oak (QUCH2)	---
	Douglas-fir (PSME)	---	California buckthorn (FRCAT2)	---
	Canyon live oak (QUCH2)	---	Foothill pine (PISA2)	---
			Incense cedar (CADE27)	---
			Jeffrey pine (PIJE)	---
			Ponderosa pine (PIPO)	---
			Douglas-fir (PSME)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
703:				
Cerpone-----	Jeffrey pine (PIJE)	25	Whiteleaf manzanita (ARMA)	15
	Incense cedar (CADE27)	22	Buckbrush (CECU)	10
	Ponderosa pine (PIPO)	20	California laurel (UMCA)	10
	Douglas-fir (PSME)	15	California buckthorn (FRCAT2)	8
	Foothill pine (PISA2)	12	Incense cedar (CADE27)	5
	Sugar pine (PILA)	5	Orcutt brome (BROR2)	3
	California black oak (QUKE)	1	Bottlebrush squirreltail (ELEL5)	3
			Toyon (HEAR5)	3
			Jeffrey pine (PIJE)	3
			Foothill pine (PISA2)	3
			Douglas-fir (PSME)	1
Typic Haploxeralfs, magnesianic-----	Foothill pine (PISA2)	---	Whiteleaf manzanita (ARMA)	---
	Jeffrey pine (PIJE)	---	Whitethorn ceanothus (CECO)	---
	Incense cedar (CADE27)	---	Foothill pine (PISA2)	---
			California laurel (UMCA)	---
			Pacific poison oak (TODI)	---
			California buckthorn (FRCAT2)	---
			Toyon (HEAR5)	---
			Scrub oak (QUBE5)	---
			Jeffrey pine (PIJE)	---
			California black oak (QUKE)	---
			Douglas-fir (PSME)	---
			Incense cedar (CADE27)	---
			Ponderosa pine (PIPO)	---
			Bigleaf maple (ACMA3)	---
Earlal-----	Foothill pine (PISA2)	---	Whiteleaf manzanita (ARMA)	---
	Jeffrey pine (PIJE)	---	Buckbrush (CECU)	---
	Ponderosa pine (PIPO)	---	California laurel (UMCA)	---
	Incense cedar (CADE27)	---	Canyon live oak (QUCH2)	---
	Douglas-fir (PSME)	---	California buckthorn (FRCAT2)	---
	Canyon live oak (QUCH2)	---	Foothill pine (PISA2)	---
			Incense cedar (CADE27)	---
			Jeffrey pine (PIJE)	---
			Ponderosa pine (PIPO)	---
			Douglas-fir (PSME)	---
Rock outcrop.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
704: Typic Haploxeralfs, magnesian-----	Foothill pine (PISA2)	---	Whiteleaf manzanita (ARMA)	---
	Jeffrey pine (PIJE)	---	Whitethorn ceanothus (CECO)	---
	Incense cedar (CADE27)	---	Foothill pine (PISA2)	---
			California laurel (UMCA)	---
			Pacific poison oak (TODI)	---
			California buckthorn (FRCAT2)	---
			Toyon (HEAR5)	---
			Scrub oak (QUBE5)	---
			Jeffrey pine (PIJE)	---
			California black oak (QUKE)	---
			Douglas-fir (PSME)	---
			Incense cedar (CADE27)	---
			Ponderosa pine (PIPO)	---
			Bigleaf maple (ACMA3)	---
Earlial-----	Foothill pine (PISA2)	---	Whiteleaf manzanita (ARMA)	---
	Jeffrey pine (PIJE)	---	Buckbrush (CECU)	---
	Ponderosa pine (PIPO)	---	California laurel (UMCA)	---
	Incense cedar (CADE27)	---	Canyon live oak (QUCH2)	---
	Douglas-fir (PSME)	---	California buckthorn (FRCAT2)	---
	Canyon live oak (QUCH2)	---	Foothill pine (PISA2)	---
			Incense cedar (CADE27)	---
			Jeffrey pine (PIJE)	---
			Ponderosa pine (PIPO)	---
			Douglas-fir (PSME)	---
Cerpone-----	Jeffrey pine (PIJE)	25	Whiteleaf manzanita (ARMA)	15
	Incense cedar (CADE27)	22	Buckbrush (CECU)	10
	Ponderosa pine (PIPO)	20	California laurel (UMCA)	10
	Douglas-fir (PSME)	15	California buckthorn (FRCAT2)	8
	Foothill pine (PISA2)	12	Incense cedar (CADE27)	5
	Sugar pine (PILA)	5	Orcutt brome (BROR2)	3
	California black oak (QUKE)	1	Bottlebrush squirreltail (ELEL5)	3
			Toyon (HEAR5)	3
			Jeffrey pine (PIJE)	3
			Foothill pine (PISA2)	3
			Douglas-fir (PSME)	1
Rock outcrop.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
705: Typic Haploxeralfs, magnesian-----	Foothill pine (PISA2)	---	Whiteleaf manzanita (ARMA)	---
	Jeffrey pine (PIJE)	---	Whitethorn ceanothus (CECO)	---
	Incense cedar (CADE27)	---	Foothill pine (PISA2)	---
			California laurel (UMCA)	---
			Pacific poison oak (TODI)	---
			California buckthorn (FRCAT2)	---
			Toyon (HEAR5)	---
			Scrub oak (QUBE5)	---
			Jeffrey pine (PIJE)	---
			California black oak (QUKE)	---
			Douglas-fir (PSME)	---
			Incense cedar (CADE27)	---
			Ponderosa pine (PIPO)	---
		Bigleaf maple (ACMA3)	---	
Earlial-----	Foothill pine (PISA2)	---	Whiteleaf manzanita (ARMA)	---
	Jeffrey pine (PIJE)	---	Buckbrush (CECU)	---
	Ponderosa pine (PIPO)	---	California laurel (UMCA)	---
	Incense cedar (CADE27)	---	Canyon live oak (QUCH2)	---
	Douglas-fir (PSME)	---	California buckthorn (FRCAT2)	---
	Canyon live oak (QUCH2)	---	Foothill pine (PISA2)	---
			Incense cedar (CADE27)	---
			Jeffrey pine (PIJE)	---
			Ponderosa pine (PIPO)	---
			Douglas-fir (PSME)	---
Cerpone-----	Jeffrey pine (PIJE)	25	Whiteleaf manzanita (ARMA)	15
	Incense cedar (CADE27)	22	Buckbrush (CECU)	10
	Ponderosa pine (PIPO)	20	California laurel (UMCA)	10
	Douglas-fir (PSME)	15	California buckthorn (FRCAT2)	8
	Foothill pine (PISA2)	12	Incense cedar (CADE27)	5
	Sugar pine (PILA)	5	Orcutt brome (BROR2)	3
	California black oak (QUKE)	1	Bottlebrush squirreltail (ELEL5)	3
			Toyon (HEAR5)	3
			Jeffrey pine (PIJE)	3
			Foothill pine (PISA2)	3
			Douglas-fir (PSME)	1
	Rock outcrop.			

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
711:				
Dixmine-----	Douglas-fir (PSME)	45	Tanoak (LIDE3)	7
	California black oak (QUKE)	15	Canyon live oak (QUCH2)	7
	Sugar pine (PILA)	8	Deerbrush (CEIN3)	5
	White fir (ABCO)	8	Douglas-fir (PSME)	5
	Incense cedar (CADE27)	8	Pacific poison oak (TODI)	---
	Ponderosa pine (PIPO)	7	Broadleaf starflower	4
	Canyon live oak (QUCH2)	6	(TRBOL)	
	Tanoak (LIDE3)	3	Incense cedar (CADE27)	2
			Sugar pine (PILA)	2
			California black oak (QUKE)	2
			White fir (ABCO)	2
			California needlegrass (ACOCC)	2
Toadtown-----	Ponderosa pine (PIPO)	32	Tanoak (LIDE3)	36
	Sugar pine (PILA)	24	White fir (ABCO)	9
	Douglas-fir (PSME)	19	Incense cedar (CADE27)	6
	Tanoak (LIDE3)	9	Whitevein shinleaf	5
	White fir (ABCO)	9	(PYPI2)	
	Incense cedar (CADE27)	7	Pacific dogwood (CONU4)	3
			California black oak (QUKE)	2
			Douglas-fir (PSME)	1
			Broadleaf starflower (TRBOL)	1
712:				
Dixmine-----	Douglas-fir (PSME)	45	Tanoak (LIDE3)	7
	California black oak (QUKE)	15	Canyon live oak (QUCH2)	7
	Sugar pine (PILA)	8	Deerbrush (CEIN3)	5
	White fir (ABCO)	8	Douglas-fir (PSME)	5
	Incense cedar (CADE27)	8	Pacific poison oak (TODI)	---
	Ponderosa pine (PIPO)	7	Broadleaf starflower	4
	Canyon live oak (QUCH2)	6	(TRBOL)	
	Tanoak (LIDE3)	3	Incense cedar (CADE27)	2
			Sugar pine (PILA)	2
			California black oak (QUKE)	2
			White fir (ABCO)	2
			California needlegrass (ACOCC)	2
Toadtown-----	Ponderosa pine (PIPO)	32	Tanoak (LIDE3)	36
	Sugar pine (PILA)	24	White fir (ABCO)	9
	Douglas-fir (PSME)	19	Incense cedar (CADE27)	6
	Tanoak (LIDE3)	9	Whitevein shinleaf	5
	White fir (ABCO)	9	(PYPI2)	
	Incense cedar (CADE27)	7	Pacific dogwood (CONU4)	3
			California black oak (QUKE)	2
			Douglas-fir (PSME)	1
			Broadleaf starflower (TRBOL)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
713:				
Dixmine-----	Douglas-fir (PSME)	45	Tanoak (LIDE3)	7
	California black oak (QUKE)	15	Canyon live oak (QUCH2)	7
	Sugar pine (PILA)	8	Deerbrush (CEIN3)	5
	White fir (ABCO)	8	Douglas-fir (PSME)	5
	Incense cedar (CADE27)	8	Pacific poison oak (TODI)	---
	Ponderosa pine (PIPO)	7	Broadleaf starflower (TRBOL)	4
	Canyon live oak (QUCH2)	6	Incense cedar (CADE27)	2
	Tanoak (LIDE3)	3	Sugar pine (PILA)	2
			California black oak (QUKE)	2
			White fir (ABCO)	2
			California needlegrass (ACOCC)	2
Toadtown-----	Ponderosa pine (PIPO)	32	Tanoak (LIDE3)	36
	Sugar pine (PILA)	24	White fir (ABCO)	9
	Douglas-fir (PSME)	19	Incense cedar (CADE27)	6
	Tanoak (LIDE3)	9	Whitevein shinleaf (PYPI2)	5
	White fir (ABCO)	9	Pacific dogwood (CONU4)	3
	Incense cedar (CADE27)	7	California black oak (QUKE)	2
			Douglas-fir (PSME)	1
			Broadleaf starflower (TRBOL)	1
714:				
Dixmine-----	Douglas-fir (PSME)	45	Tanoak (LIDE3)	7
	California black oak (QUKE)	15	Canyon live oak (QUCH2)	7
	Sugar pine (PILA)	8	Deerbrush (CEIN3)	5
	White fir (ABCO)	8	Douglas-fir (PSME)	5
	Incense cedar (CADE27)	8	Pacific poison oak (TODI)	---
	Ponderosa pine (PIPO)	7	Broadleaf starflower (TRBOL)	4
	Canyon live oak (QUCH2)	6	Incense cedar (CADE27)	2
	Tanoak (LIDE3)	3	Sugar pine (PILA)	2
			California black oak (QUKE)	2
			White fir (ABCO)	2
			California needlegrass (ACOCC)	2
Toadtown-----	Ponderosa pine (PIPO)	32	Tanoak (LIDE3)	36
	Sugar pine (PILA)	24	White fir (ABCO)	9
	Douglas-fir (PSME)	19	Incense cedar (CADE27)	6
	Tanoak (LIDE3)	9	Whitevein shinleaf (PYPI2)	5
	White fir (ABCO)	9	Pacific dogwood (CONU4)	3
	Incense cedar (CADE27)	7	California black oak (QUKE)	2
			Douglas-fir (PSME)	1
			Broadleaf starflower (TRBOL)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
715:				
Logtrain-----	Ponderosa pine (PIPO)	32	Tanoak (LIDE3)	9
	Douglas-fir (PSME)	18	Canyon live oak (QUCH2)	9
	Sugar pine (PILA)	14	Incense cedar (CADE27)	5
	Incense cedar (CADE27)	10	Douglas-fir (PSME)	4
	White fir (ABCO)	8	Pacific poison oak (TODI)	---
	California black oak (QUKE)	6	Sierra chinquapin (CHSE11)	3
	Canyon live oak (QUCH2)	6	Ponderosa pine (PIPO)	3
	Tanoak (LIDE3)	5	Greenleaf manzanita (ARPA6)	3
	Jeffrey pine (PIJE)	1	Prostrate ceanothus (CEPR)	3
			California black oak (QUKE)	2
			White fir (ABCO)	2
			Pacific dogwood (CONU4)	2
			Deerbrush (CEIN3)	1
			California hazel (COCOC)	1
			Sugar pine (PILA)	1
Bottlehill-----	Ponderosa pine (PIPO)	43	Greenleaf manzanita (ARPA6)	15
	Sugar pine (PILA)	18	Prostrate ceanothus (CEPR)	10
	White fir (ABCO)	17	White fir (ABCO)	8
	Douglas-fir (PSME)	13	Sierra chinquapin (CHSE11)	5
	California black oak (QUKE)	9	Incense cedar (CADE27)	2
			Pinemat manzanita (ARNE)	2
			Sugar pine (PILA)	2
			Ponderosa pine (PIPO)	2
			California black oak (QUKE)	2
			Whitevein shinleaf (PYPI2)	1
Walkermine-----	Douglas-fir (PSME)	25	Canyon live oak (QUCH2)	18
	Sugar pine (PILA)	15	Sierra chinquapin (CHSE11)	8
	White fir (ABCO)	13	Incense cedar (CADE27)	5
	Ponderosa pine (PIPO)	13	Douglas-fir (PSME)	5
	California black oak (QUKE)	12	Deerbrush (CEIN3)	3
	Canyon live oak (QUCH2)	12	California black oak (QUKE)	3
	Incense cedar (CADE27)	10	White fir (ABCO)	3
			Broadleaf starflower (TRBOL)	3
			Bigleaf maple (ACMA3)	1
			Greenleaf manzanita (ARPA6)	1
			Sugar pine (PILA)	1
			Ponderosa pine (PIPO)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
716:				
Griffgulch-----	Ponderosa pine (PIPO)	55	Whiteleaf manzanita (ARMA)	19
	Douglas-fir (PSME)	16	Pacific madrone (ARME)	6
	California black oak (QUKE)	12	Canyon live oak (QUCH2)	5
	Sugar pine (PILA)	8	California laurel (UMCA)	5
	Canyon live oak (QUCH2)	5	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	4	Toyon (HEAR5)	5
			California black oak (QUKE)	5
			Douglas-fir (PSME)	3
			Pursh's buckthorn (FRPU7)	3
			California scrub oak (QUDU)	3
			Deerbrush (CEIN3)	2
			Incense cedar (CADE27)	2
			Ponderosa pine (PIPO)	2
			Lemmon ceanothus (CELE)	1
			California redbud (CEOR9)	1
			Tall Oregon grape (MAAQ2)	1
			Sugar pine (PILA)	1
Surnuf-----	Ponderosa pine (PIPO)	27	Tanoak (LIDE3)	11
	Douglas-fir (PSME)	19	Whiteleaf manzanita (ARMA)	8
	California black oak (QUKE)	17	Canyon live oak (QUCH2)	8
	Canyon live oak (QUCH2)	17	Pacific poison oak (TODI)	---
	Pacific madrone (ARME)	6	Toyon (HEAR5)	8
	Tanoak (LIDE3)	4	California honeysuckle (LOHI2)	5
	Incense cedar (CADE27)	4	Pacific madrone (ARME)	4
	Sugar pine (PILA)	3	California buckthorn (FRCAT2)	4
	Foothill pine (PISA2)	3	California black oak (QUKE)	4
			Pacific dogwood (CONU4)	3
			Deerbrush (CEIN3)	2
			Incense cedar (CADE27)	2
			Douglas-fir (PSME)	2
			Ponderosa pine (PIPO)	2
			Sierra gooseberry (RIRO)	2
			Orcutt brome (BROR2)	1
			Iris (IRIS)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
717:				
Griffgulch-----	Ponderosa pine (PIPO)	55	Whiteleaf manzanita (ARMA)	19
	Douglas-fir (PSME)	16	Pacific madrone (ARME)	6
	California black oak (QUKE)	12	Canyon live oak (QUCH2)	5
	Sugar pine (PILA)	8	California laurel (UMCA)	5
	Canyon live oak (QUCH2)	5	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	4	Toyon (HEAR5)	5
			California black oak (QUKE)	5
			Douglas-fir (PSME)	3
			Pursh's buckthorn (FRPU7)	3
			California scrub oak (QUDU)	3
			Deerbrush (CEIN3)	2
			Incense cedar (CADE27)	2
			Ponderosa pine (PIPO)	2
			Lemmon ceanothus (CELE)	1
			California redbud (CEOR9)	1
			Tall Oregon grape (MAAQ2)	1
			Sugar pine (PILA)	1
Surnuf-----	Ponderosa pine (PIPO)	27	Tanoak (LIDE3)	11
	Douglas-fir (PSME)	19	Whiteleaf manzanita (ARMA)	8
	California black oak (QUKE)	17	Canyon live oak (QUCH2)	8
	Canyon live oak (QUCH2)	17	Pacific poison oak (TODI)	---
	Pacific madrone (ARME)	6	Toyon (HEAR5)	8
	Tanoak (LIDE3)	4	California honeysuckle (LOHI2)	5
	Incense cedar (CADE27)	4	Pacific madrone (ARME)	4
	Sugar pine (PILA)	3	California buckthorn (FRCAT2)	4
	Foothill pine (PISA2)	3	California black oak (QUKE)	4
			Pacific dogwood (CONU4)	3
			Deerbrush (CEIN3)	2
			Incense cedar (CADE27)	2
			Douglas-fir (PSME)	2
			Ponderosa pine (PIPO)	2
			Sierra gooseberry (RIRO)	2
			Orcutt brome (BROR2)	1
			Iris (IRIS)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
718:				
Griffgulch-----	Ponderosa pine (PIPO)	55	Whiteleaf manzanita (ARMA)	19
	Douglas-fir (PSME)	16	Pacific madrone (ARME)	6
	California black oak (QUKE)	12	Canyon live oak (QUCH2)	5
	Sugar pine (PILA)	8	California laurel (UMCA)	5
	Canyon live oak (QUCH2)	5	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	4	Toyon (HEAR5)	5
			California black oak (QUKE)	5
			Douglas-fir (PSME)	3
			Pursh's buckthorn (FRPU7)	3
			California scrub oak (QUDU)	3
			Deerbrush (CEIN3)	2
			Incense cedar (CADE27)	2
			Ponderosa pine (PIPO)	2
			Lemmon ceanothus (CELE)	1
		California redbud (CEOR9)	1	
		Tall Oregon grape (MAAQ2)	1	
		Sugar pine (PILA)	1	
Surnuf-----	Ponderosa pine (PIPO)	27	Tanoak (LIDE3)	11
	Douglas-fir (PSME)	19	Whiteleaf manzanita (ARMA)	8
	California black oak (QUKE)	17	Canyon live oak (QUCH2)	8
	Canyon live oak (QUCH2)	17	Pacific poison oak (TODI)	---
	Pacific madrone (ARME)	6	Toyon (HEAR5)	8
	Tanoak (LIDE3)	4	California honeysuckle (LOHI2)	5
	Incense cedar (CADE27)	4	Pacific madrone (ARME)	4
	Sugar pine (PILA)	3	California buckthorn (FRCAT2)	4
	Foothill pine (PISA2)	3	California black oak (QUKE)	4
			Pacific dogwood (CONU4)	3
			Deerbrush (CEIN3)	2
			Incense cedar (CADE27)	2
			Douglas-fir (PSME)	2
			Ponderosa pine (PIPO)	2
		Sierra gooseberry (RIRO)	2	
		Orcutt brome (BROR2)	1	
		Iris (IRIS)	1	
Spine taxadjunct	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Douglas-fir (PSME)	---	California scrub oak (QUDU)	---
	California black oak (QUKE)	---	Interior live oak (QUWI2)	---
	Ponderosa pine (PIPO)	---	California laurel (UMCA)	---
	Incense cedar (CADE27)	---	California black oak (QUKE)	---
			Pacific poison oak (TODI)	---
			Whiteleaf manzanita (ARMA)	---
			Douglas-fir (PSME)	---
			Toyon (HEAR5)	---
			Ponderosa pine (PIPO)	---
			Foothill pine (PISA2)	---
			Pacific madrone (ARME)	---
			Tanoak (LIDE3)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
719:				
Griffgulch-----	Ponderosa pine (PIPO)	55	Whiteleaf manzanita (ARMA)	19
	Douglas-fir (PSME)	16	Pacific madrone (ARME)	6
	California black oak (QUKE)	12	Canyon live oak (QUCH2)	5
	Sugar pine (PILA)	8	California laurel (UMCA)	5
	Canyon live oak (QUCH2)	5	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	4	Toyon (HEAR5)	5
			California black oak (QUKE)	5
			Douglas-fir (PSME)	3
			Pursh's buckthorn (FRPU7)	3
			California scrub oak (QUDU)	3
			Deerbrush (CEIN3)	2
			Incense cedar (CADE27)	2
			Ponderosa pine (PIPO)	2
			Lemmon ceanothus (CELE)	1
			California redbud (CEOR9)	1
			Tall Oregon grape (MAAQ2)	1
			Sugar pine (PILA)	1
Surnuf-----	Ponderosa pine (PIPO)	27	Tanoak (LIDE3)	11
	Douglas-fir (PSME)	19	Whiteleaf manzanita (ARMA)	8
	California black oak (QUKE)	17	Canyon live oak (QUCH2)	8
	Canyon live oak (QUCH2)	17	Pacific poison oak (TODI)	---
	Pacific madrone (ARME)	6	Toyon (HEAR5)	8
	Tanoak (LIDE3)	4	California honeysuckle (LOHI2)	5
	Incense cedar (CADE27)	4	Pacific madrone (ARME)	4
	Sugar pine (PILA)	3	California buckthorn (FRCAT2)	4
	Foothill pine (PISA2)	3	California black oak (QUKE)	4
			Pacific dogwood (CONU4)	3
			Deerbrush (CEIN3)	2
			Incense cedar (CADE27)	2
			Douglas-fir (PSME)	2
			Ponderosa pine (PIPO)	2
			Sierra gooseberry (RIRO)	2
			Orcutt brome (BROR2)	1
			Iris (IRIS)	1
Spine taxadjunct	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Douglas-fir (PSME)	---	California scrub oak (QUDU)	---
	California black oak (QUKE)	---	Interior live oak (QUWI2)	---
	Ponderosa pine (PIPO)	---	California laurel (UMCA)	---
	Incense cedar (CADE27)	---	California black oak (QUKE)	---
			Pacific poison oak (TODI)	---
			Whiteleaf manzanita (ARMA)	---
			Douglas-fir (PSME)	---
			Toyon (HEAR5)	---
			Ponderosa pine (PIPO)	---
			Foothill pine (PISA2)	---
			Pacific madrone (ARME)	---
			Tanoak (LIDE3)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
720:				
Dystroxerepts---	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Interior live oak (QUWI2)	---	California scrub oak (QUDU)	---
	Foothill pine (PISA2)	---	Interior live oak (QUWI2)	---
	California black oak (QUKE)	---	California laurel (UMCA)	---
	Douglas-fir (PSME)	---	California black oak (QUKE)	---
	Ponderosa pine (PIPO)	---	Pacific poison oak (TODI)	---
	Blue oak (QUDO)	---	Whiteleaf manzanita (ARMA)	---
			Douglas-fir (PSME)	---
			Toyon (HEAR5)	---
			Ponderosa pine (PIPO)	---
			Foothill pine (PISA2)	---
			Buckbrush (CECU)	---
			Pacific madrone (ARME)	---
			Blue oak (QUDO)	---
			Buckbrush (CECU)	---
			Tanoak (LIDE3)	---
Haploxerales---	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Interior live oak (QUWI2)	---	California scrub oak (QUDU)	---
	Foothill pine (PISA2)	---	Interior live oak (QUWI2)	---
	California black oak (QUKE)	---	California laurel (UMCA)	---
	Douglas-fir (PSME)	---	California black oak (QUKE)	---
	Ponderosa pine (PIPO)	---	Pacific poison oak (TODI)	---
	Blue oak (QUDO)	---	Whiteleaf manzanita (ARMA)	---
			Douglas-fir (PSME)	---
			Toyon (HEAR5)	---
			Ponderosa pine (PIPO)	---
			Foothill pine (PISA2)	---
			Buckbrush (CECU)	---
			Pacific madrone (ARME)	---
			Blue oak (QUDO)	---
			Buckbrush (CECU)	---
			Tanoak (LIDE3)	---
Rock outcrop.				
721:				
Haploxerands, granitic till--	White fir (ABCO)	36	White fir (ABCO)	18
	Ponderosa pine (PIPO)	25	Sierra chinquapin (CHSE11)	10
	Sugar pine (PILA)	17	Incense cedar (CADE27)	8
	Incense cedar (CADE27)	8	Greenleaf manzanita (ARPA6)	7
	California red fir (ARMA)	7	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	5	Pipsissewa (CHUM)	1
	Douglas-fir (PSME)	2	Sugar pine (PILA)	1
			Whitevein shinleaf (PYPI2)	1
			California needlegrass (ACOCC)	1
			Bitter cherry (PREM)	1
			California black oak (QUKE)	1
			Sierra gooseberry (RIRO)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
722: Haploxerands, granitic till--	White fir (ABCO)	36	White fir (ABCO)	18
	Ponderosa pine (PIPO)	25	Sierra chinquapin (CHSE11)	10
	Sugar pine (PILA)	17	Incense cedar (CADE27)	8
	Incense cedar (CADE27)	8	Greenleaf manzanita (ARPA6)	7
	California red fir (ABMA)	7	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	5	Pipsissewa (CHUM)	1
	Douglas-fir (PSME)	2	Sugar pine (PILA)	1
			Whitevein shinleaf (PYPI2)	1
			California needlegrass (ACOCC)	1
			Bitter cherry (PREM)	1
			California black oak (QUKE)	1
			Sierra gooseberry (RIRO)	1
723: Haploxerands, granitic till--	White fir (ABCO)	36	White fir (ABCO)	18
	Ponderosa pine (PIPO)	25	Sierra chinquapin (CHSE11)	10
	Sugar pine (PILA)	17	Incense cedar (CADE27)	8
	Incense cedar (CADE27)	8	Greenleaf manzanita (ARPA6)	7
	California red fir (ABMA)	7	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	5	Pipsissewa (CHUM)	1
	Douglas-fir (PSME)	2	Sugar pine (PILA)	1
			Whitevein shinleaf (PYPI2)	1
			California needlegrass (ACOCC)	1
			Bitter cherry (PREM)	1
			California black oak (QUKE)	1
			Sierra gooseberry (RIRO)	1
724: Haploxerands, volcanic till--	White fir (ABCO)	36	White fir (ABCO)	18
	Ponderosa pine (PIPO)	25	Sierra chinquapin (CHSE11)	10
	Sugar pine (PILA)	17	Incense cedar (CADE27)	8
	Incense cedar (CADE27)	8	Greenleaf manzanita (ARPA6)	7
	California red fir (ABMA)	7	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	5	Pipsissewa (CHUM)	1
	Douglas-fir (PSME)	2	Sugar pine (PILA)	1
			Whitevein shinleaf (PYPI2)	1
			California needlegrass (ACOCC)	1
			Bitter cherry (PREM)	1
			California black oak (QUKE)	1
			Sierra gooseberry (RIRO)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
725: Haploxerands, volcanic till--	White fir (ABCO)	36	White fir (ABCO)	18
	Ponderosa pine (PIPO)	25	Sierra chinquapin (CHSE11)	10
	Sugar pine (PILA)	17	Incense cedar (CADE27)	8
	Incense cedar (CADE27)	8	Greenleaf manzanita (ARPA6)	7
	California red fir (ABMA)	7	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	5	Pipsissewa (CHUM)	1
	Douglas-fir (PSME)	2	Sugar pine (PILA)	1
			Whitevein shinleaf (PYPI2)	1
			California needlegrass (ACOCC)	1
			Bitter cherry (PREM)	1
			California black oak (QUKE)	1
		Sierra gooseberry (RIRO)	1	
726: Haploxerands, volcanic till--	White fir (ABCO)	36	White fir (ABCO)	18
	Ponderosa pine (PIPO)	25	Sierra chinquapin (CHSE11)	10
	Sugar pine (PILA)	17	Incense cedar (CADE27)	8
	Incense cedar (CADE27)	8	Greenleaf manzanita (ARPA6)	7
	California red fir (ABMA)	7	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	5	Pipsissewa (CHUM)	1
	Douglas-fir (PSME)	2	Sugar pine (PILA)	1
			Whitevein shinleaf (PYPI2)	1
			California needlegrass (ACOCC)	1
			Bitter cherry (PREM)	1
			California black oak (QUKE)	1
		Sierra gooseberry (RIRO)	1	

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
727: Bonneyridge-----	Ponderosa pine (PIPO)	25	White fir (ABCO)	11
	Sugar pine (PILA)	24	Incense cedar (CADE27)	10
	White fir (ABCO)	22	Tanoak (LIDE3)	9
	Incense cedar (CADE27)	14	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	8	Western brackenfern (PTAQ)	4
	Douglas-fir (PSME)	6	Greenleaf manzanita (ARPA6)	3
	Pacific madrone (ARME)	1	Pacific dogwood (CONU4)	3
			Sierra chinquapin (CHSE11)	2
			Deerbrush (CEIN3)	2
			California black oak (QUKE)	2
			California hazel (COCOC)	2
			Sugar pine (PILA)	2
			Whiteleaf manzanita (ARMA)	1
			Common snowberry (SYAL)	1
			Pipsissewa (CHUM)	1
			Whitevein shinleaf (PYPI2)	1
			California needlegrass (ACOCC)	1
			Iris (IRIS)	1
			Sierra gooseberry (RIRO)	1
			Broadleaf starflower (TRBOL)	1
			Lupine (LUPIN)	1
			Ponderosa pine (PIPO)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
728: Bonneyridge-----	Ponderosa pine (PIPO)	25	White fir (ABCO)	11
	Sugar pine (PILA)	24	Incense cedar (CADE27)	10
	White fir (ABCO)	22	Tanoak (LIDE3)	9
	Incense cedar (CADE27)	14	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	8	Western brackenfern (PTAQ)	4
	Douglas-fir (PSME)	6	Greenleaf manzanita (ARPA6)	3
	Pacific madrone (ARME)	1	Pacific dogwood (CONU4)	3
			Sierra chinquapin (CHSE11)	2
			Deerbrush (CEIN3)	2
			California black oak (QUKE)	2
			California hazel (COCOC)	2
			Sugar pine (PILA)	2
			Whiteleaf manzanita (ARMA)	1
			Common snowberry (SYAL)	1
			Pipsissewa (CHUM)	1
			Whitevein shinleaf (PYPI2)	1
			California needlegrass (ACOCC)	1
			Iris (IRIS)	1
			Sierra gooseberry (RIRO)	1
			Broadleaf starflower (TRBOL)	1
			Lupine (LUPIN)	1
			Ponderosa pine (PIPO)	1
729: Bonneyridge-----	Ponderosa pine (PIPO)	25	White fir (ABCO)	11
	Sugar pine (PILA)	24	Incense cedar (CADE27)	10
	White fir (ABCO)	22	Tanoak (LIDE3)	9
	Incense cedar (CADE27)	14	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	8	Western brackenfern (PTAQ)	4
	Douglas-fir (PSME)	6	Greenleaf manzanita (ARPA6)	3
	Pacific madrone (ARME)	1	Pacific dogwood (CONU4)	3
			Sierra chinquapin (CHSE11)	2
			Deerbrush (CEIN3)	2
			California black oak (QUKE)	2
			California hazel (COCOC)	2
			Sugar pine (PILA)	2
			Whiteleaf manzanita (ARMA)	1
			Common snowberry (SYAL)	1
			Pipsissewa (CHUM)	1
			Whitevein shinleaf (PYPI2)	1
			California needlegrass (ACOCC)	1
			Iris (IRIS)	1
			Sierra gooseberry (RIRO)	1
			Broadleaf starflower (TRBOL)	1
			Lupine (LUPIN)	1
			Ponderosa pine (PIPO)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
730:				
Tusccoll-----	Douglas-fir (PSME)	45	Douglas-fir (PSME)	15
	Incense cedar (CADE27)	15	California honeysuckle (LOHI2)	7
	Ponderosa pine (PIPO)	15	Canyon live oak (QUCH2)	7
	California black oak (QUKE)	13	California torreyea (TOCA)	5
	Canyon live oak (QUCH2)	7	Pacific poison oak (TODI)	---
	Sugar pine (PILA)	5	California black oak (QUKE)	4
			California laurel (UMCA)	4
			Incense cedar (CADE27)	3
			Whitethorn ceanothus (CECO)	2
			California honeysuckle (LOHI2)	
			Pacific dogwood (CONU4)	1
			Bigleaf maple (ACMA3)	1
			Deerbrush (CEIN3)	1
			Western brackenfern (PTAQ)	1
			Sierra gooseberry (RIRO)	1
			Broadleaf starflower (TRBOL)	1
Schott-----	Ponderosa pine (PIPO)	50	Whiteleaf manzanita (ARMA)	20
	Douglas-fir (PSME)	25	California buckthorn (FRCAT2)	10
	Incense cedar (CADE27)	8	Incense cedar (CADE27)	8
	Canyon live oak (QUCH2)	7	Pacific poison oak (TODI)	---
	California black oak (QUKE)	7	Greenleaf manzanita (ARPA6)	8
	Sugar pine (PILA)	3	Douglas-fir (PSME)	5
			Canyon live oak (QUCH2)	5
			Lemmon ceanothus (CELE)	3
			California black oak (QUKE)	3
			Deerbrush (CEIN3)	3
			Western brackenfern (PTAQ)	3
			California laurel (UMCA)	3
			Ponderosa pine (PIPO)	1
			California torreyea (TOCA)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
731:				
Tusccoll-----	Douglas-fir (PSME)	45	Douglas-fir (PSME)	15
	Incense cedar (CADE27)	15	California honeysuckle (LOHI2)	7
	Ponderosa pine (PIPO)	15	Canyon live oak (QUCH2)	7
	California black oak (QUKE)	13	California torreyia (TOCA)	5
	Canyon live oak (QUCH2)	7	Pacific poison oak (TODI)	---
	Sugar pine (PILA)	5	California black oak (QUKE)	4
			California laurel (UMCA)	4
			Incense cedar (CADE27)	3
			Whitethorn ceanothus (CECO)	2
			California honeysuckle (LOHI2)	2
			Pacific dogwood (CONU4)	1
			Bigleaf maple (ACMA3)	1
			Deerbrush (CEIN3)	1
			Western brackenfern (PTAQ)	1
			Sierra gooseberry (RIRO)	1
			Broadleaf starflower (TRBOL)	1
Schott-----	Ponderosa pine (PIPO)	50	Whiteleaf manzanita (ARMA)	20
	Douglas-fir (PSME)	25	California buckthorn (FRCAT2)	10
	Incense cedar (CADE27)	8	Incense cedar (CADE27)	8
	Canyon live oak (QUCH2)	7	Pacific poison oak (TODI)	---
	California black oak (QUKE)	7	Greenleaf manzanita (ARPA6)	8
	Sugar pine (PILA)	3	Douglas-fir (PSME)	5
			Canyon live oak (QUCH2)	5
			Lemmon ceanothus (CELE)	3
			California black oak (QUKE)	3
			Deerbrush (CEIN3)	3
			Western brackenfern (PTAQ)	3
			California laurel (UMCA)	3
			Ponderosa pine (PIPO)	1
			California torreyia (TOCA)	1
732:				
Bonepile taxadjunct-----	Ponderosa pine (PIPO)	37	White fir (ABCO)	10
	Incense cedar (CADE27)	25	Incense cedar (CADE27)	10
	Douglas-fir (PSME)	15	Greenleaf manzanita (ARPA6)	8
	White fir (ABCO)	13	Prostrate ceanothus (CEPR)	3
	Sugar pine (PILA)	5	Bottlebrush squirreltail (ELEL5)	3
	California black oak (QUKE)	5	Douglas-fir (PSME)	3
			Ponderosa pine (PIPO)	3
			California black oak (QUKE)	3
			California needlegrass (ACOCC)	1
			Whitevein shinleaf (PYPI2)	1
			Sierra gooseberry (RIRO)	1
			Common snowberry (SYAL)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
733: Haploxeralfs, terrace-----	Blue oak (QUDO)	---	Yellow starthistle (CESO3)	---
	Interior live oak (QUWI2)	---	Soft chess (BRHOH)	---
	Canyon live oak (QUCH2)	---	Hedgehog dogtail (CYEC)	---
	Valley oak (QULO)	---	Ripgut brome (BRDI3)	---
			Mediterranean barley (HOMUL)	---
			Blue oak (QUDO)	---
			Interior live oak (QUWI2)	---
			Canyon live oak (QUCH2)	---
			Valley oak (QULO)	---
			Foothill pine (PISA2)	---
734: Haploxerands----	White fir (ABCO)	40	White fir (ABCO)	10
	Sugar pine (PILA)	22	Incense cedar (CADE27)	10
	California red fir (ABMA)	17	Sierra chinquapin (CHSE11)	5
	Ponderosa pine (PIPO)	10	Western brackenfern (PTAQ)	5
	Incense cedar (CADE27)	8	California red fir (ABMA)	3
	California black oak (QUKE)	3	Huckleberry oak (QUVA)	3
			Pipsissewa (CHUM)	1
			Sugar pine (PILA)	1
			Whitevein shinleaf (PYPI2)	1
Aquic Xerofluvents---	---	---	Carex (CAREX)	---
			Rush (JUNCU)	---
			Willow (SALIX)	---
			California false hellebore (VECAC2)	---
735: Fluvaquents, loamy-----	Ponderosa pine (PIPO)	---	Ponderosa pine (PIPO)	---
	California black oak (QUKE)	---	White alder (ALRH2)	---
			Bigleaf maple (ACMA3)	---
			Willow (SALIX)	---
			Himalaya blackberry (RUDI2)	---
			California black oak (QUKE)	---
			Thistle (CIRSI)	---
			Carex (CAREX)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
801:				
Obstruction-----	White fir (ABCO)	26	White fir (ABCO)	9
	Ponderosa pine (PIPO)	21	Tanoak (LIDE3)	8
	Douglas-fir (PSME)	18	Incense cedar (CADE27)	7
	Sugar pine (PILA)	17	Whitevein shinleaf (PYPI2)	4
	Incense cedar (CADE27)	8	Pacific dogwood (CONU4)	3
	California black oak (QUKE)	8	Western brackenfern (PTAQ)	3
	Tanoak (LIDE3)	2	Whitethorn ceanothus (CECO)	3
			Sugar pine (PILA)	2
			Douglas-fir (PSME)	2
			California black oak (QUKE)	2
			Bigleaf maple (ACMA3)	2
			Sierra chinquapin (CHSE11)	2
			California hazel (COCOC)	1
			Broadleaf starflower (TRBOL)	1
			Greenleaf manzanita (ARPA6)	1
			Prostrate ceanothus (CEPR)	1
			Sierra gooseberry (RIRO)	1
802:				
Obskel-----	Ponderosa pine (PIPO)	32	Tanoak (LIDE3)	11
	White fir (ABCO)	18	Incense cedar (CADE27)	10
	Douglas-fir (PSME)	17	Broadleaf starflower (TRBOL)	7
	Incense cedar (CADE27)	15	White fir (ABCO)	5
	Sugar pine (PILA)	10	Pacific dogwood (CONU4)	5
	California black oak (QUKE)	5	Western brackenfern (PTAQ)	5
	Tanoak (LIDE3)	3	California hazel (COCOC)	4
			Douglas-fir (PSME)	2
			California black oak (QUKE)	1
			Sierra chinquapin (CHSE11)	1
			Ponderosa pine (PIPO)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
802:				
Obstruction-----	White fir (ABCO)	26	White fir (ABCO)	9
	Ponderosa pine (PIPO)	21	Tanoak (LIDE3)	8
	Douglas-fir (PSME)	18	Incense cedar (CADE27)	7
	Sugar pine (PILA)	17	Whitevein shinleaf (PYPI2)	4
	Incense cedar (CADE27)	8	Pacific dogwood (CONU4)	3
	California black oak (QUKE)	8	Western brackenfern (PTAQ)	3
	Tanoak (LIDE3)	2	Whitethorn ceanothus (CECO)	3
			Sugar pine (PILA)	2
			Douglas-fir (PSME)	2
			California black oak (QUKE)	2
			Bigleaf maple (ACMA3)	2
			Sierra chinquapin (CHSE11)	2
			California hazel (COCOC)	1
			Broadleaf starflower (TRBOL)	1
			Greenleaf manzanita (ARPA6)	1
			Prostrate ceanothus (CEPR)	1
			Sierra gooseberry (RIRO)	1
803:				
Obskel-----	Ponderosa pine (PIPO)	32	Tanoak (LIDE3)	11
	White fir (ABCO)	18	Incense cedar (CADE27)	10
	Douglas-fir (PSME)	17	Broadleaf starflower (TRBOL)	7
	Incense cedar (CADE27)	15	White fir (ABCO)	5
	Sugar pine (PILA)	10	Pacific dogwood (CONU4)	5
	California black oak (QUKE)	5	Western brackenfern (PTAQ)	5
	Tanoak (LIDE3)	3	California hazel (COCOC)	4
			Douglas-fir (PSME)	2
			California black oak (QUKE)	1
			Sierra chinquapin (CHSE11)	1
			Ponderosa pine (PIPO)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
803:				
Obstruction-----	White fir (ABCO)	26	White fir (ABCO)	9
	Ponderosa pine (PIPO)	21	Tanoak (LIDE3)	8
	Douglas-fir (PSME)	18	Incense cedar (CADE27)	7
	Sugar pine (PILA)	17	Whitevein shinleaf (PYPI2)	4
	Incense cedar (CADE27)	8	Pacific dogwood (CONU4)	3
	California black oak (QUKE)	8	Western brackenfern (PTAQ)	3
	Tanoak (LIDE3)	2	Whitethorn ceanothus (CECO)	3
			Sugar pine (PILA)	2
			Douglas-fir (PSME)	2
			California black oak (QUKE)	2
			Bigleaf maple (ACMA3)	2
			Sierra chinquapin (CHSE11)	2
			California hazel (COCOC)	1
			Broadleaf starflower (TRBOL)	1
			Greenleaf manzanita (ARPA6)	1
			Prostrate ceanothus (CEPR)	1
			Sierra gooseberry (RIRO)	1
804:				
Obskel-----	Ponderosa pine (PIPO)	32	Tanoak (LIDE3)	11
	White fir (ABCO)	18	Incense cedar (CADE27)	10
	Douglas-fir (PSME)	17	Broadleaf starflower (TRBOL)	7
	Incense cedar (CADE27)	15	White fir (ABCO)	5
	Sugar pine (PILA)	10	Pacific dogwood (CONU4)	5
	California black oak (QUKE)	5	Western brackenfern (PTAQ)	5
	Tanoak (LIDE3)	3	California hazel (COCOC)	4
			Douglas-fir (PSME)	2
			California black oak (QUKE)	1
			Sierra chinquapin (CHSE11)	1
			Ponderosa pine (PIPO)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
804:				
Obstruction-----	White fir (ABCO)	26	White fir (ABCO)	9
	Ponderosa pine (PIPO)	21	Tanoak (LIDE3)	8
	Douglas-fir (PSME)	18	Incense cedar (CADE27)	7
	Sugar pine (PILA)	17	Whitevein shinleaf (PYPI2)	4
	Incense cedar (CADE27)	8	Pacific dogwood (CONU4)	3
	California black oak (QUKE)	8	Western brackenfern (PTAQ)	3
	Tanoak (LIDE3)	2	Whitethorn ceanothus (CECO)	3
			Sugar pine (PILA)	2
			Douglas-fir (PSME)	2
			California black oak (QUKE)	2
			Bigleaf maple (ACMA3)	2
			Sierra chinquapin (CHSE11)	2
			California hazel (COCOC)	1
			Broadleaf starflower (TRBOL)	1
			Greenleaf manzanita (ARPA6)	1
			Prostrate ceanothus (CEPR)	1
			Sierra gooseberry (RIRO)	1
Retsongulch-----	Douglas-fir (PSME)	27	Tanoak (LIDE3)	40
	Tanoak (LIDE3)	25	Incense cedar (CADE27)	5
	Canyon live oak (QUCH2)	15	Douglas-fir (PSME)	5
	Ponderosa pine (PIPO)	15	Canyon live oak (QUCH2)	5
	California black oak (QUKE)	5	Whiteleaf manzanita (ARMA)	5
	Sugar pine (PILA)	5	Deerbrush (CEIN3)	1
	Incense cedar (CADE27)	5	Pacific dogwood (CONU4)	1
	White fir (ABCO)	3	California black oak (QUKE)	1
			White fir (ABCO)	1
805:				
Bottlehill-----	Ponderosa pine (PIPO)	43	Greenleaf manzanita (ARPA6)	15
	Sugar pine (PILA)	18	Prostrate ceanothus (CEPR)	10
	White fir (ABCO)	17	White fir (ABCO)	8
	Douglas-fir (PSME)	13	Sierra chinquapin (CHSE11)	5
	California black oak (QUKE)	9	Incense cedar (CADE27)	2
			Pinemat manzanita (ARNE)	2
			Sugar pine (PILA)	2
			Ponderosa pine (PIPO)	2
			California black oak (QUKE)	2
			Whitevein shinleaf (PYPI2)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
805:				
Walkermine-----	Douglas-fir (PSME)	25	Canyon live oak (QUCH2)	18
	Sugar pine (PILA)	15	Sierra chinquapin (CHSE11)	8
	White fir (ABCO)	13	Incense cedar (CADE27)	5
	Ponderosa pine (PIPO)	13	Douglas-fir (PSME)	5
	California black oak (QUKE)	12	Deerbrush (CEIN3)	3
	Canyon live oak (QUCH2)	12	California black oak (QUKE)	3
	Incense cedar (CADE27)	10	White fir (ABCO)	3
			Broadleaf starflower (TRBOL)	3
			Bigleaf maple (ACMA3)	1
			Greenleaf manzanita (ARPA6)	1
			Sugar pine (PILA)	1
			Ponderosa pine (PIPO)	1
	Logtrain-----	Ponderosa pine (PIPO)	32	Tanoak (LIDE3)
Douglas-fir (PSME)		18	Canyon live oak (QUCH2)	9
Sugar pine (PILA)		14	Incense cedar (CADE27)	5
Incense cedar (CADE27)		10	Douglas-fir (PSME)	4
White fir (ABCO)		8	Pacific poison oak (TODI)	---
California black oak (QUKE)		6	Sierra chinquapin (CHSE11)	3
Canyon live oak (QUCH2)		6	Ponderosa pine (PIPO)	3
Tanoak (LIDE3)		5	Greenleaf manzanita (ARPA6)	3
Jeffrey pine (PIJE)		1	Prostrate ceanothus (CEPR)	3
			California black oak (QUKE)	2
			White fir (ABCO)	2
			Pacific dogwood (CONU4)	2
			Deerbrush (CEIN3)	1
		California hazel (COCOC)	1	
		Sugar pine (PILA)	1	
806:				
Bottlehill-----	Ponderosa pine (PIPO)	43	Greenleaf manzanita (ARPA6)	15
	Sugar pine (PILA)	18	Prostrate ceanothus (CEPR)	10
	White fir (ABCO)	17	White fir (ABCO)	8
	Douglas-fir (PSME)	13	Sierra chinquapin (CHSE11)	5
	California black oak (QUKE)	9	Incense cedar (CADE27)	2
			Pinemat manzanita (ARNE)	2
			Sugar pine (PILA)	2
			Ponderosa pine (PIPO)	2
			California black oak (QUKE)	2
			Whitevein shinleaf (PYPI2)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
806:				
Walkermine-----	Douglas-fir (PSME)	25	Canyon live oak (QUCH2)	18
	Sugar pine (PILA)	15	Sierra chinquapin (CHSE11)	8
	White fir (ABCO)	13	Incense cedar (CADE27)	5
	Ponderosa pine (PIPO)	13	Douglas-fir (PSME)	5
	California black oak (QUKE)	12	Deerbrush (CEIN3)	3
	Canyon live oak (QUCH2)	12	California black oak (QUKE)	3
	Incense cedar (CADE27)	10	White fir (ABCO)	3
			Broadleaf starflower (TRBOL)	3
			Bigleaf maple (ACMA3)	1
			Greenleaf manzanita (ARPA6)	1
			Sugar pine (PILA)	1
			Ponderosa pine (PIPO)	1
Logtrain-----	Ponderosa pine (PIPO)	32	Tanoak (LIDE3)	9
	Douglas-fir (PSME)	18	Canyon live oak (QUCH2)	9
	Sugar pine (PILA)	14	Incense cedar (CADE27)	5
	Incense cedar (CADE27)	10	Douglas-fir (PSME)	4
	White fir (ABCO)	8	Pacific poison oak (TODI)	---
	California black oak (QUKE)	6	Sierra chinquapin (CHSE11)	3
	Canyon live oak (QUCH2)	6	Ponderosa pine (PIPO)	3
	Tanoak (LIDE3)	5	Greenleaf manzanita (ARPA6)	3
	Jeffrey pine (PIJE)	1	Prostrate ceanothus (CEPR)	3
			California black oak (QUKE)	2
			White fir (ABCO)	2
			Pacific dogwood (CONU4)	2
			Deerbrush (CEIN3)	1
			California hazel (COCOC)	1
			Sugar pine (PILA)	1
807:				
Bottlehill-----	Ponderosa pine (PIPO)	43	Greenleaf manzanita (ARPA6)	15
	Sugar pine (PILA)	18	Prostrate ceanothus (CEPR)	10
	White fir (ABCO)	17	White fir (ABCO)	8
	Douglas-fir (PSME)	13	Sierra chinquapin (CHSE11)	5
	California black oak (QUKE)	9	Incense cedar (CADE27)	2
			Pinemat manzanita (ARNE)	2
			Sugar pine (PILA)	2
			Ponderosa pine (PIPO)	2
			California black oak (QUKE)	2
			Whitevein shinleaf (PYPI2)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
807:				
Logtrain-----	Ponderosa pine (PIPO)	32	Tanoak (LIDE3)	9
	Douglas-fir (PSME)	18	Canyon live oak (QUCH2)	9
	Sugar pine (PILA)	14	Incense cedar (CADE27)	5
	Incense cedar (CADE27)	10	Douglas-fir (PSME)	4
	White fir (ABCO)	8	Sierra chinquapin (CHSE11)	3
	California black oak (QUKE)	6	Ponderosa pine (PIPO)	3
	Canyon live oak (QUCH2)	6	Greenleaf manzanita (ARPA6)	3
	Tanoak (LIDE3)	5	Prostrate ceanothus (CEPR)	3
	Jeffrey pine (PIJE)	1	California black oak (QUKE)	2
			White fir (ABCO)	2
			Pacific dogwood (CONU4)	2
			Deerbrush (CEIN3)	1
			California hazel (COCOC)	1
			Sugar pine (PILA)	1
Walkermine-----	Douglas-fir (PSME)	25	Canyon live oak (QUCH2)	18
	Sugar pine (PILA)	15	Sierra chinquapin (CHSE11)	8
	White fir (ABCO)	13	Incense cedar (CADE27)	5
	Ponderosa pine (PIPO)	13	Douglas-fir (PSME)	5
	California black oak (QUKE)	12	Deerbrush (CEIN3)	3
	Canyon live oak (QUCH2)	12	California black oak (QUKE)	3
	Incense cedar (CADE27)	10	White fir (ABCO)	3
			Broadleaf starflower (TRBOL)	3
			Bigleaf maple (ACMA3)	1
			Greenleaf manzanita (ARPA6)	1
			Sugar pine (PILA)	1
			Ponderosa pine (PIPO)	1
808:				
Bottlehill-----	Ponderosa pine (PIPO)	43	Greenleaf manzanita (ARPA6)	15
	Sugar pine (PILA)	18	Prostrate ceanothus (CEPR)	10
	White fir (ABCO)	17	White fir (ABCO)	8
	Douglas-fir (PSME)	13	Sierra chinquapin (CHSE11)	5
	California black oak (QUKE)	9	Incense cedar (CADE27)	2
			Pinemat manzanita (ARNE)	2
			Sugar pine (PILA)	2
			Ponderosa pine (PIPO)	2
			California black oak (QUKE)	2
			Whitevein shinleaf (PYPI2)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species	
808:					
Walkermine-----	Douglas-fir (PSME)	25	Canyon live oak (QUCH2)	18	
	Sugar pine (PILA)	15	Sierra chinquapin (CHSE11)	8	
	White fir (ABCO)	13	Incense cedar (CADE27)	5	
	Ponderosa pine (PIPO)	13	Douglas-fir (PSME)	5	
	California black oak (QUKE)	12	Deerbrush (CEIN3)	3	
	Canyon live oak (QUCH2)	12	California black oak (QUKE)	3	
	Incense cedar (CADE27)	10	White fir (ABCO)	3	
			Broadleaf starflower (TRBOL)	3	
			Bigleaf maple (ACMA3)	1	
			Greenleaf manzanita (ARPA6)	1	
			Sugar pine (PILA)	1	
			Ponderosa pine (PIPO)	1	
	Logtrain-----	Ponderosa pine (PIPO)	32	Tanoak (LIDE3)	9
		Douglas-fir (PSME)	18	Canyon live oak (QUCH2)	9
Sugar pine (PILA)		14	Incense cedar (CADE27)	5	
Incense cedar (CADE27)		10	Douglas-fir (PSME)	4	
White fir (ABCO)		8	Sierra chinquapin (CHSE11)	3	
California black oak (QUKE)		6	Ponderosa pine (PIPO)	3	
Canyon live oak (QUCH2)		6	Greenleaf manzanita (ARPA6)	3	
Tanoak (LIDE3)		5	Prostrate ceanothus (CEPR)	3	
Jeffrey pine (PIJE)		1	California black oak (QUKE)	2	
			White fir (ABCO)	2	
			Pacific dogwood (CONU4)	2	
			Deerbrush (CEIN3)	1	
			California hazel (COCOC)	1	
			Sugar pine (PILA)	1	
809:					
Walkermine-----	Douglas-fir (PSME)	25	Canyon live oak (QUCH2)	18	
	Sugar pine (PILA)	15	Sierra chinquapin (CHSE11)	8	
	White fir (ABCO)	13	Incense cedar (CADE27)	5	
	Ponderosa pine (PIPO)	13	Douglas-fir (PSME)	5	
	California black oak (QUKE)	12	Deerbrush (CEIN3)	3	
	Canyon live oak (QUCH2)	12	California black oak (QUKE)	3	
	Incense cedar (CADE27)	10	White fir (ABCO)	3	
			Broadleaf starflower (TRBOL)	3	
			Bigleaf maple (ACMA3)	1	
			Greenleaf manzanita (ARPA6)	1	
			Sugar pine (PILA)	1	
			Ponderosa pine (PIPO)	1	

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
809:				
Bottlehill-----	Ponderosa pine (PIPO)	43	Greenleaf manzanita (ARPA6)	15
	Sugar pine (PILA)	18	Prostrate ceanothus (CEPR)	10
	White fir (ABCO)	17	White fir (ABCO)	8
	Douglas-fir (PSME)	13	Sierra chinquapin (CHSE11)	5
	California black oak (QUKE)	9	Incense cedar (CADE27)	2
			Pinemat manzanita (ARNE)	2
			Sugar pine (PILA)	2
			Ponderosa pine (PIPO)	2
			California black oak (QUKE)	2
			Whitevein shinleaf (PYPI2)	1
Logtrain-----	Ponderosa pine (PIPO)	32	Tanoak (LIDE3)	9
	Douglas-fir (PSME)	18	Canyon live oak (QUCH2)	9
	Sugar pine (PILA)	14	Incense cedar (CADE27)	5
	Incense cedar (CADE27)	10	Douglas-fir (PSME)	4
	White fir (ABCO)	8	Pacific poison oak (TODI)	---
	California black oak (QUKE)	6	Sierra chinquapin (CHSE11)	3
	Canyon live oak (QUCH2)	6	Ponderosa pine (PIPO)	3
	Tanoak (LIDE3)	5	Greenleaf manzanita (ARPA6)	3
	Jeffrey pine (PIJE)	1	Prostrate ceanothus (CEPR)	3
			California black oak (QUKE)	2
			White fir (ABCO)	2
			Pacific dogwood (CONU4)	2
			Deerbrush (CEIN3)	1
			California hazel (COCOC)	1
			Sugar pine (PILA)	1
Rock outcrop.				
810:				
Dixmine-----	Douglas-fir (PSME)	45	Tanoak (LIDE3)	7
	California black oak (QUKE)	15	Canyon live oak (QUCH2)	7
	Sugar pine (PILA)	8	Deerbrush (CEIN3)	5
	White fir (ABCO)	8	Douglas-fir (PSME)	5
	Incense cedar (CADE27)	8	Pacific poison oak (TODI)	---
	Ponderosa pine (PIPO)	7	Broadleaf starflower (TRBOL)	4
	Canyon live oak (QUCH2)	6	Incense cedar (CADE27)	2
	Tanoak (LIDE3)	3	Sugar pine (PILA)	2
			California black oak (QUKE)	2
			White fir (ABCO)	2
			California needlegrass (ACOCC)	2

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
810:				
Mac-----	Douglas-fir (PSME)	33	Tanoak (LIDE3)	30
	Ponderosa pine (PIPO)	20	Douglas-fir (PSME)	8
	Sugar pine (PILA)	15	Incense cedar (CADE27)	3
	Tanoak (LIDE3)	12	Sugar pine (PILA)	2
	California black oak (QUKE)	10	Pacific poison oak (TODI)	---
	White fir (ABCO)	7	White fir (ABCO)	2
	Incense cedar (CADE27)	3	California black oak (QUKE)	2
			California honeysuckle (LOHI2)	2
Spine-----	Douglas-fir (PSME)	25	Tanoak (LIDE3)	26
	Sugar pine (PILA)	16	Whiteleaf manzanita (ARMA)	8
	Tanoak (LIDE3)	15	Canyon live oak (QUCH2)	8
	Ponderosa pine (PIPO)	13	Pacific poison oak (TODI)	---
	Canyon live oak (QUCH2)	13	Incense cedar (CADE27)	3
	California black oak (QUKE)	11	Douglas-fir (PSME)	3
	Incense cedar (CADE27)	5	California black oak (QUKE)	3
	White fir (ABCO)	2	Broadleaf starflower (TRBOL)	3
			White fir (ABCO)	1
			Pacific madrone (ARME)	1
			Greenleaf manzanita (ARPA6)	1
			Sugar pine (PILA)	1
811:				
Powellton-----	Ponderosa pine (PIPO)	38	Tanoak (LIDE3)	33
	Douglas-fir (PSME)	23	White fir (ABCO)	5
	Sugar pine (PILA)	13	Incense cedar (CADE27)	3
	Incense cedar (CADE27)	11	Pacific dogwood (CONU4)	2
	White fir (ABCO)	6	Western brackenfern (PTAQ)	2
	Tanoak (LIDE3)	5	Douglas-fir (PSME)	2
	California black oak (QUKE)	2	Orcutt brome (BROR2)	2
	Pacific madrone (ARME)	2	California honeysuckle (LOHI2)	2
			Deerbrush (CEIN3)	1
Toadtown-----	Ponderosa pine (PIPO)	32	Tanoak (LIDE3)	36
	Sugar pine (PILA)	24	White fir (ABCO)	9
	Douglas-fir (PSME)	19	Incense cedar (CADE27)	6
	Tanoak (LIDE3)	9	Whitevein shinleaf (PYPI2)	5
	White fir (ABCO)	9	Pacific dogwood (CONU4)	3
	Incense cedar (CADE27)	7	California black oak (QUKE)	2
			Douglas-fir (PSME)	1
			Broadleaf starflower (TRBOL)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
812:				
Powellton-----	Ponderosa pine (PIPO)	38	Tanoak (LIDE3)	33
	Douglas-fir (PSME)	23	White fir (ABCO)	5
	Sugar pine (PILA)	13	Incense cedar (CADE27)	3
	Incense cedar (CADE27)	11	Pacific dogwood (CONU4)	2
	White fir (ABCO)	6	Western brackenfern (PTAQ)	2
	Tanoak (LIDE3)	5	Douglas-fir (PSME)	2
	California black oak (QUKE)	2	Orcutt brome (BROR2)	2
	Pacific madrone (ARME)	2	California honeysuckle (LOHI2)	2
			Deerbrush (CEIN3)	1
Toadtown-----	Ponderosa pine (PIPO)	32	Tanoak (LIDE3)	36
	Sugar pine (PILA)	24	White fir (ABCO)	9
	Douglas-fir (PSME)	19	Incense cedar (CADE27)	6
	Tanoak (LIDE3)	9	Whitevein shinleaf (PYPI2)	5
	White fir (ABCO)	9	Pacific dogwood (CONU4)	3
	Incense cedar (CADE27)	7	California black oak (QUKE)	2
			Douglas-fir (PSME)	1
			Broadleaf starflower (TRBOL)	1
813:				
Powellton-----	Ponderosa pine (PIPO)	38	Tanoak (LIDE3)	33
	Douglas-fir (PSME)	23	White fir (ABCO)	5
	Sugar pine (PILA)	13	Incense cedar (CADE27)	3
	Incense cedar (CADE27)	11	Pacific dogwood (CONU4)	2
	White fir (ABCO)	6	Western brackenfern (PTAQ)	2
	Tanoak (LIDE3)	5	Douglas-fir (PSME)	2
	California black oak (QUKE)	2	Orcutt brome (BROR2)	2
	Pacific madrone (ARME)	2	California honeysuckle (LOHI2)	2
			Deerbrush (CEIN3)	1
Toadtown-----	Ponderosa pine (PIPO)	32	Tanoak (LIDE3)	36
	Sugar pine (PILA)	24	White fir (ABCO)	9
	Douglas-fir (PSME)	19	Incense cedar (CADE27)	6
	Tanoak (LIDE3)	9	Whitevein shinleaf (PYPI2)	5
	White fir (ABCO)	9	Pacific dogwood (CONU4)	3
	Incense cedar (CADE27)	7	California black oak (QUKE)	2
			Douglas-fir (PSME)	1
			Broadleaf starflower (TRBOL)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
814: Mountyana-----	Ponderosa pine (PIPO)	23	Tanoak (LIDE3)	15
	Sugar pine (PILA)	21	White fir (ABCO)	10
	White fir (ABCO)	18	Incense cedar (CADE27)	9
	Douglas-fir (PSME)	17	Deerbrush (CEIN3)	6
	Tanoak (LIDE3)	8	Broadleaf starflower (TRBOL)	4
	Incense cedar (CADE27)	8	Sugar pine (PILA)	3
	California black oak (QUKE)	5	Ponderosa pine (PIPO)	3
			Western brackenfern (PTAQ)	3
			Pacific dogwood (CONU4)	2
			Prostrate ceanothus (CEPR)	2
			Douglas-fir (PSME)	2
			California black oak (QUKE)	2
			California needlegrass (ACOCC)	2
			Common snowberry (SYAL)	2
			Whitevein shinleaf (PYPI2)	1
			Greenleaf manzanita (ARPA6)	1
			Wax currant (RICE)	1
815: Mountyana-----	Ponderosa pine (PIPO)	23	Tanoak (LIDE3)	15
	Sugar pine (PILA)	21	White fir (ABCO)	10
	White fir (ABCO)	18	Incense cedar (CADE27)	9
	Douglas-fir (PSME)	17	Deerbrush (CEIN3)	6
	Tanoak (LIDE3)	8	Broadleaf starflower (TRBOL)	4
	Incense cedar (CADE27)	8	Sugar pine (PILA)	3
	California black oak (QUKE)	5	Ponderosa pine (PIPO)	3
			Western brackenfern (PTAQ)	3
			Pacific dogwood (CONU4)	2
			Prostrate ceanothus (CEPR)	2
			Douglas-fir (PSME)	2
			California black oak (QUKE)	2
			California needlegrass (ACOCC)	2
			Common snowberry (SYAL)	2
			Whitevein shinleaf (PYPI2)	1
			Greenleaf manzanita (ARPA6)	1
			Wax currant (RICE)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
817: Lydon-----	California black oak (QUKE)	25	Canyon live oak (QUCH2)	10
	Douglas-fir (PSME)	21	California needlegrass (ACOCC)	8
	Ponderosa pine (PIPO)	20	Carex (CAREX)	7
	Canyon live oak (QUCH2)	13	California black oak (QUKE)	7
	Incense cedar (CADE27)	12	Pacific poison oak (TODI)	---
	Sugar pine (PILA)	7	Incense cedar (CADE27)	5
	White fir (ABCO)	2	California honeysuckle (LOHI2)	5
			Ponderosa pine (PIPO)	4
			Douglas-fir (PSME)	3
			Sugar pine (PILA)	2
			Greenleaf manzanita (ARPA6)	2
			Tanoak (LIDE3)	2
			White fir (ABCO)	2
			Whiteleaf manzanita (ARMA)	2
			Orcutt brome (BROR2)	2
			Deerbrush (CEIN3)	2
818: Lydon-----	California black oak (QUKE)	25	Canyon live oak (QUCH2)	10
	Douglas-fir (PSME)	21	California needlegrass (ACOCC)	8
	Ponderosa pine (PIPO)	20	Carex (CAREX)	7
	Canyon live oak (QUCH2)	13	California black oak (QUKE)	7
	Incense cedar (CADE27)	12	Pacific poison oak (TODI)	---
	Sugar pine (PILA)	7	Incense cedar (CADE27)	5
	White fir (ABCO)	2	California honeysuckle (LOHI2)	5
			Ponderosa pine (PIPO)	4
			Douglas-fir (PSME)	3
			Sugar pine (PILA)	2
			Greenleaf manzanita (ARPA6)	2
			Tanoak (LIDE3)	2
			White fir (ABCO)	2
			Whiteleaf manzanita (ARMA)	2
			Orcutt brome (BROR2)	2
			Deerbrush (CEIN3)	2

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
819: Lydon-----	California black oak (QUKE)	25	Canyon live oak (QUCH2)	10
	Douglas-fir (PSME)	21	California needlegrass (ACOCC)	8
	Ponderosa pine (PIPO)	20	Carex (CAREX)	7
	Canyon live oak (QUCH2)	13	California black oak (QUKE)	7
	Incense cedar (CADE27)	12	Pacific poison oak (TODI)	---
	Sugar pine (PILA)	7	Incense cedar (CADE27)	5
	White fir (ABCO)	2	California honeysuckle (LOHI2)	5
			Ponderosa pine (PIPO)	4
			Douglas-fir (PSME)	3
			Sugar pine (PILA)	2
			Greenleaf manzanita (ARPA6)	2
			Tanoak (LIDE3)	2
			White fir (ABCO)	2
			Whiteleaf manzanita (ARMA)	2
			Orcutt brome (BROR2)	2
			Deerbrush (CEIN3)	2
Rock outcrop.				
820: Lydon-----	California black oak (QUKE)	25	Canyon live oak (QUCH2)	10
	Douglas-fir (PSME)	21	California needlegrass (ACOCC)	8
	Ponderosa pine (PIPO)	20	Carex (CAREX)	7
	Canyon live oak (QUCH2)	13	California black oak (QUKE)	7
	Incense cedar (CADE27)	12	Pacific poison oak (TODI)	---
	Sugar pine (PILA)	7	Incense cedar (CADE27)	5
	White fir (ABCO)	2	California honeysuckle (LOHI2)	5
			Ponderosa pine (PIPO)	4
			Douglas-fir (PSME)	3
			Sugar pine (PILA)	2
			Greenleaf manzanita (ARPA6)	2
			Tanoak (LIDE3)	2
			White fir (ABCO)	2
			Whiteleaf manzanita (ARMA)	2
			Orcutt brome (BROR2)	2
			Deerbrush (CEIN3)	2
Rock outcrop.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
821:				
Lydon-----	California black oak (QUKE)	25	Canyon live oak (QUCH2)	10
	Douglas-fir (PSME)	21	California needlegrass (ACOCC)	8
	Ponderosa pine (PIPO)	20	Carex (CAREX)	7
	Canyon live oak (QUCH2)	13	California black oak (QUKE)	7
	Incense cedar (CADE27)	12	Pacific poison oak (TODI)	---
	Sugar pine (PILA)	7	Incense cedar (CADE27)	5
	White fir (ABCO)	2	California honeysuckle (LOHI2)	5
			Ponderosa pine (PIPO)	4
			Douglas-fir (PSME)	3
			Sugar pine (PILA)	2
			Greenleaf manzanita (ARPA6)	2
			Tanoak (LIDE3)	2
			White fir (ABCO)	2
			Whiteleaf manzanita (ARMA)	2
			Orcutt brome (BROR2)	2
			Deerbrush (CEIN3)	2
Rock outcrop.				
822:				
Bonepile-----	White fir (ABCO)	37	Greenleaf manzanita (ARPA6)	18
	Ponderosa pine (PIPO)	29	White fir (ABCO)	15
	Sugar pine (PILA)	17	Sierra chinquapin (CHSE11)	15
	Douglas-fir (PSME)	7	Whitethorn ceanothus (CECO)	12
	California black oak (QUKE)	6	Sugar pine (PILA)	4
	Incense cedar (CADE27)	4	Douglas-fir (PSME)	4
			Western brackenfern (PTAQ)	4
			California needlegrass (ACOCC)	3
			California black oak (QUKE)	2
			Sierra gooseberry (RIRO)	2
			Incense cedar (CADE27)	2
			Bottlebrush squirreltail (ELEL5)	2
			Ponderosa pine (PIPO)	2
			Whitevein shinleaf (PYPI2)	2
			Common snowberry (SYAL)	2
			Pipsissewa (CHUM)	1
			Bitter cherry (PREM)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
823: Bonepile-----	White fir (ABCO)	37	Greenleaf manzanita (ARPA6)	18
	Ponderosa pine (PIPO)	29	White fir (ABCO)	15
	Sugar pine (PILA)	17	Sierra chinquapin (CHSE11)	15
	Douglas-fir (PSME)	7	Whitethorn ceanothus (CECO)	12
	California black oak (QUKE)	6	Sugar pine (PILA)	4
	Incense cedar (CADE27)	4	Douglas-fir (PSME)	4
			Western brackenfern (PTAQ)	4
			California needlegrass (ACOCC)	3
			California black oak (QUKE)	2
			Sierra gooseberry (RIRO)	2
			Incense cedar (CADE27)	2
			Bottlebrush squirreltail (ELEL5)	2
			Ponderosa pine (PIPO)	2
			Whitevein shinleaf (PYPI2)	2
			Common snowberry (SYAL)	2
			Pipsissewa (CHUM)	1
			Bitter cherry (PREM)	1
824: Beecee-----	Douglas-fir (PSME)	30	California hazel (COCOC)	10
	White fir (ABCO)	25	Pacific dogwood (CONU4)	10
	California black oak (QUKE)	20	Incense cedar (CADE27)	8
	Incense cedar (CADE27)	12	California black oak (QUKE)	7
	Ponderosa pine (PIPO)	8	White fir (ABCO)	7
	Sugar pine (PILA)	5	Douglas-fir (PSME)	5
			Deerbrush (CEIN3)	4
			Broadleaf starflower (TRBOL)	4
			Sierra chinquapin (CHSE11)	3
			Tanoak (LIDE3)	3
			Western brackenfern (PTAQ)	2
			Whitevein shinleaf (PYPI2)	2
825: Beecee-----	Douglas-fir (PSME)	30	California hazel (COCOC)	10
	White fir (ABCO)	25	Pacific dogwood (CONU4)	10
	California black oak (QUKE)	20	Incense cedar (CADE27)	8
	Incense cedar (CADE27)	12	California black oak (QUKE)	7
	Ponderosa pine (PIPO)	8	White fir (ABCO)	7
	Sugar pine (PILA)	5	Douglas-fir (PSME)	5
			Deerbrush (CEIN3)	4
			Broadleaf starflower (TRBOL)	4
			Sierra chinquapin (CHSE11)	3
			Tanoak (LIDE3)	3
			Western brackenfern (PTAQ)	2
			Whitevein shinleaf (PYPI2)	2

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
825: Lydon-----	California black oak (QUKE)	25	Canyon live oak (QUCH2)	10
	Douglas-fir (PSME)	21	California needlegrass (ACOCC)	8
	Ponderosa pine (PIPO)	20	Carex (CAREX)	7
	Canyon live oak (QUCH2)	13	California black oak (QUKE)	7
	Incense cedar (CADE27)	12	Pacific poison oak (TODI)	---
	Sugar pine (PILA)	7	Incense cedar (CADE27)	5
	White fir (ABCO)	2	California honeysuckle (LOHI2)	5
			Ponderosa pine (PIPO)	4
			Douglas-fir (PSME)	3
			Sugar pine (PILA)	2
			Greenleaf manzanita (ARPA6)	2
			Tanoak (LIDE3)	2
			White fir (ABCO)	2
			Whiteleaf manzanita (ARMA)	2
			Orcutt brome (BROR2)	2
			Deerbrush (CEIN3)	2
826: Redbone-----	Ponderosa pine (PIPO)	27	Incense cedar (CADE27)	15
	White fir (ABCO)	25	White fir (ABCO)	12
	Sugar pine (PILA)	18	Prostrate ceanothus (CEPR)	12
	Douglas-fir (PSME)	16	Common snowberry (SYAL)	10
	Incense cedar (CADE27)	13	Pacific dogwood (CONU4)	7
	California black oak (QUKE)	1	Sierra chinquapin (CHSE11)	7
			Greenleaf manzanita (ARPA6)	5
			Deerbrush (CEIN3)	5
			California needlegrass (ACOCC)	5
			Whitevein shinleaf (PYPI2)	3
			Sugar pine (PILA)	2
			Douglas-fir (PSME)	2
			Canyon live oak (QUCH2)	2
			Broadleaf starflower (TRBOL)	2

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
827: Redbone-----	Ponderosa pine (PIPO)	27	Incense cedar (CADE27)	15
	White fir (ABCO)	25	White fir (ABCO)	12
	Sugar pine (PILA)	18	Prostrate ceanothus	12
	Douglas-fir (PSME)	16	(CEPR)	
	Incense cedar (CADE27)	13	Common snowberry (SYAL)	10
	California black oak (QUKE)	1	Pacific dogwood (CONU4)	7
			Sierra chinquapin	7
			(CHSE11)	
			Greenleaf manzanita	5
			(ARPA6)	
			Deerbrush (CEIN3)	5
			California needlegrass	5
			(ACOCC)	
			Whitevein shinleaf	3
			(PYPI2)	
			Sugar pine (PILA)	2
			Douglas-fir (PSME)	2
			Canyon live oak (QUCH2)	2
			Broadleaf starflower	2
			(TRBOL)	
829: Paradiso-----	Ponderosa pine (PIPO)	42	California black oak	10
	Douglas-fir (PSME)	19	(QUKE)	
	California black oak (QUKE)	13	Incense cedar (CADE27)	9
	Incense cedar (CADE27)	11	Western brackenfern	7
	White fir (ABCO)	10	(PTAQ)	
	Sugar pine (PILA)	4	Scotch broom (CYSC4)	6
	Tanoak (LIDE3)	1	Pacific poison oak (TODI)	---
			Broadleaf starflower	5
			(TRBOL)	
			Deerbrush (CEIN3)	4
			Whiteleaf manzanita	4
			(ARMA)	
			Lupine (LUPIN)	4
			White fir (ABCO)	1
			Orcutt brome (BROR2)	1
			Ponderosa pine (PIPO)	1
			Canyon live oak (QUCH2)	1
830: Paradiso-----	Ponderosa pine (PIPO)	42	California black oak	10
	Douglas-fir (PSME)	19	(QUKE)	
	California black oak (QUKE)	13	Incense cedar (CADE27)	9
	Incense cedar (CADE27)	11	Western brackenfern	7
	White fir (ABCO)	10	(PTAQ)	
	Sugar pine (PILA)	4	Scotch broom (CYSC4)	6
	Tanoak (LIDE3)	1	Pacific poison oak (TODI)	---
			Broadleaf starflower	5
			(TRBOL)	
			Deerbrush (CEIN3)	4
			Whiteleaf manzanita	4
			(ARMA)	
			Lupine (LUPIN)	4
			White fir (ABCO)	1
			Orcutt brome (BROR2)	1
			Ponderosa pine (PIPO)	1
			Canyon live oak (QUCH2)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
831:				
Surnuf-----	Douglas-fir (PSME)	25	Tanoak (LIDE3)	28
	Ponderosa pine (PIPO)	22	White fir (ABCO)	7
	Sugar pine (PILA)	18	Incense cedar (CADE27)	4
	White fir (ABCO)	13	California black oak (QUKE)	2
	Tanoak (LIDE3)	10	Pacific poison oak (TODI)	---
	California black oak (QUKE)	7	Broadleaf starflower (TRBOL)	2
	Incense cedar (CADE27)	5	Douglas-fir (PSME)	2
			Common snowberry (SYAL)	2
Bigridge-----	Ponderosa pine (PIPO)	45	Whiteleaf manzanita (ARMA)	10
	California black oak (QUKE)	28	Toyon (HEAR5)	5
	Interior live oak (QUWI2)	13	Ryegrass (LOLIU)	3
	Pacific madrone (ARME)	5	Pacific poison oak (TODI)	---
	Foothill pine (PISA2)	3	Ponderosa pine (PIPO)	3
	Douglas-fir (PSME)	3	Deerbrush (CEIN3)	3
	Canyon live oak (QUCH2)	3	California buckthorn (FRCAT2)	3
			Canyon live oak (QUCH2)	3
			Bigleaf maple (ACMA3)	1
			Pacific madrone (ARME)	1
Spine-----	Douglas-fir (PSME)	25	Tanoak (LIDE3)	26
	Sugar pine (PILA)	16	Whiteleaf manzanita (ARMA)	8
	Tanoak (LIDE3)	15	Canyon live oak (QUCH2)	8
	Ponderosa pine (PIPO)	13	Pacific poison oak (TODI)	---
	Canyon live oak (QUCH2)	13	Incense cedar (CADE27)	3
	California black oak (QUKE)	11	Douglas-fir (PSME)	3
	Incense cedar (CADE27)	5	California black oak (QUKE)	3
	White fir (ABCO)	2	Broadleaf starflower (TRBOL)	3
			White fir (ABCO)	1
			Pacific madrone (ARME)	1
			Greenleaf manzanita (ARPA6)	1
			Sugar pine (PILA)	1
832:				
Surnuf-----	Douglas-fir (PSME)	25	Tanoak (LIDE3)	28
	Ponderosa pine (PIPO)	22	White fir (ABCO)	7
	Sugar pine (PILA)	18	Incense cedar (CADE27)	4
	White fir (ABCO)	13	California black oak (QUKE)	2
	Tanoak (LIDE3)	10	Pacific poison oak (TODI)	---
	California black oak (QUKE)	7	Broadleaf starflower (TRBOL)	2
	Incense cedar (CADE27)	5	Douglas-fir (PSME)	2
			Common snowberry (SYAL)	2

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
832:				
Bigridge-----	Ponderosa pine (PIPO)	45	Whiteleaf manzanita (ARMA)	10
	California black oak (QUKE)	28	Toyon (HEAR5)	5
	Interior live oak (QUWI2)	13	Ryegrass (LOLIU)	3
	Pacific madrone (ARME)	5	Pacific poison oak (TODI)	---
	Foothill pine (PISA2)	3	Ponderosa pine (PIPO)	3
	Douglas-fir (PSME)	3	Deerbrush (CEIN3)	3
	Canyon live oak (QUCH2)	3	California buckthorn (FRCAT2)	3
			Canyon live oak (QUCH2)	3
			Bigleaf maple (ACMA3)	1
			Pacific madrone (ARME)	1
Spine-----	Douglas-fir (PSME)	25	Tanoak (LIDE3)	26
	Sugar pine (PILA)	16	Whiteleaf manzanita (ARMA)	8
	Tanoak (LIDE3)	15	Canyon live oak (QUCH2)	8
	Ponderosa pine (PIPO)	13	Pacific poison oak (TODI)	---
	Canyon live oak (QUCH2)	13	Incense cedar (CADE27)	3
	California black oak (QUKE)	11	Douglas-fir (PSME)	3
	Incense cedar (CADE27)	5	California black oak (QUKE)	3
	White fir (ABCO)	2	Broadleaf starflower (TRBOL)	3
			White fir (ABCO)	1
			Pacific madrone (ARME)	1
			Greenleaf manzanita (ARPA6)	1
		Sugar pine (PILA)	1	
833:				
Surnuf-----	Douglas-fir (PSME)	25	Tanoak (LIDE3)	28
	Ponderosa pine (PIPO)	22	White fir (ABCO)	7
	Sugar pine (PILA)	18	Incense cedar (CADE27)	4
	White fir (ABCO)	13	California black oak (QUKE)	2
	Tanoak (LIDE3)	10	Pacific poison oak (TODI)	---
	California black oak (QUKE)	7	Broadleaf starflower (TRBOL)	2
	Incense cedar (CADE27)	5	Douglas-fir (PSME)	2
		Common snowberry (SYAL)	2	
Bigridge-----	Ponderosa pine (PIPO)	45	Whiteleaf manzanita (ARMA)	10
	California black oak (QUKE)	28	Toyon (HEAR5)	5
	Interior live oak (QUWI2)	13	Ryegrass (LOLIU)	3
	Pacific madrone (ARME)	5	Pacific poison oak (TODI)	---
	Foothill pine (PISA2)	3	Ponderosa pine (PIPO)	3
	Douglas-fir (PSME)	3	Deerbrush (CEIN3)	3
	Canyon live oak (QUCH2)	3	California buckthorn (FRCAT2)	3
			Canyon live oak (QUCH2)	3
		Bigleaf maple (ACMA3)	1	
		Pacific madrone (ARME)	1	

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
833:				
Spine-----	Douglas-fir (PSME)	25	Tanoak (LIDE3)	26
	Sugar pine (PILA)	16	Whiteleaf manzanita (ARMA)	8
	Tanoak (LIDE3)	15	Canyon live oak (QUCH2)	8
	Ponderosa pine (PIPO)	13	Pacific poison oak (TODI)	---
	Canyon live oak (QUCH2)	13	Incense cedar (CADE27)	3
	California black oak (QUKE)	11	Douglas-fir (PSME)	3
	Incense cedar (CADE27)	5	California black oak (QUKE)	3
	White fir (ABCO)	2	Broadleaf starflower (TRBOL)	3
			White fir (ABCO)	1
			Pacific madrone (ARME)	1
			Greenleaf manzanita (ARPA6)	1
			Sugar pine (PILA)	1
834:				
Hietanen-----	Ponderosa pine (PIPO)	24	Tanoak (LIDE3)	25
	Douglas-fir (PSME)	24	Douglas-fir (PSME)	5
	Sugar pine (PILA)	15	Incense cedar (CADE27)	4
	White fir (ABCO)	11	Pacific dogwood (CONU4)	3
	Tanoak (LIDE3)	10	Whiteleaf manzanita (ARMA)	3
	Incense cedar (CADE27)	9	White fir (ABCO)	2
	California black oak (QUKE)	7	Sugar pine (PILA)	2
			Deerbrush (CEIN3)	2
			Western brackenfern (PTAQ)	2
			California black oak (QUKE)	2
			Prostrate ceanothus (CEPR)	1
			Sierra gooseberry (RIRO)	1
			Orcutt brome (BROR2)	1
			Iris (IRIS)	1
			Whitevein shinleaf (PYPI2)	1
			Broadleaf starflower (TRBOL)	1
Mac-----	Douglas-fir (PSME)	33	Tanoak (LIDE3)	30
	Ponderosa pine (PIPO)	20	Douglas-fir (PSME)	8
	Sugar pine (PILA)	15	Incense cedar (CADE27)	3
	Tanoak (LIDE3)	12	Sugar pine (PILA)	2
	California black oak (QUKE)	10	Pacific poison oak (TODI)	---
	White fir (ABCO)	7	White fir (ABCO)	2
	Incense cedar (CADE27)	3	California black oak (QUKE)	2
			California honeysuckle (LOHI2)	2

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
835:				
Hietanen-----	Ponderosa pine (PIPO)	24	Tanoak (LIDE3)	25
	Douglas-fir (PSME)	24	Douglas-fir (PSME)	5
	Sugar pine (PILA)	15	Incense cedar (CADE27)	4
	White fir (ABCO)	11	Pacific dogwood (CONU4)	3
	Tanoak (LIDE3)	10	Whiteleaf manzanita (ARMA)	3
	Incense cedar (CADE27)	9	White fir (ABCO)	2
	California black oak (QUKE)	7	Sugar pine (PILA)	2
			Deerbrush (CEIN3)	2
			Western brackenfern (PTAQ)	2
			California black oak (QUKE)	2
			Prostrate ceanothus (CEPR)	1
			Sierra gooseberry (RIRO)	1
			Orcutt brome (BROR2)	1
			Iris (IRIS)	1
			Whitevein shinleaf (PYPI2)	1
			Broadleaf starflower (TRBOL)	1
Mac-----	Douglas-fir (PSME)	33	Tanoak (LIDE3)	30
	Ponderosa pine (PIPO)	20	Douglas-fir (PSME)	8
	Sugar pine (PILA)	15	Incense cedar (CADE27)	3
	Tanoak (LIDE3)	12	Sugar pine (PILA)	2
	California black oak (QUKE)	10	Pacific poison oak (TODI)	---
	White fir (ABCO)	7	White fir (ABCO)	2
	Incense cedar (CADE27)	3	California black oak (QUKE)	2
			California honeysuckle (LOHI2)	2
836:				
Hietanen-----	Ponderosa pine (PIPO)	24	Tanoak (LIDE3)	25
	Douglas-fir (PSME)	24	Douglas-fir (PSME)	5
	Sugar pine (PILA)	15	Incense cedar (CADE27)	4
	White fir (ABCO)	11	Pacific dogwood (CONU4)	3
	Tanoak (LIDE3)	10	Whiteleaf manzanita (ARMA)	3
	Incense cedar (CADE27)	9	White fir (ABCO)	2
	California black oak (QUKE)	7	Sugar pine (PILA)	2
			Deerbrush (CEIN3)	2
			Western brackenfern (PTAQ)	2
			California black oak (QUKE)	2
			Prostrate ceanothus (CEPR)	1
			Sierra gooseberry (RIRO)	1
			Orcutt brome (BROR2)	1
			Iris (IRIS)	1
			Whitevein shinleaf (PYPI2)	1
			Broadleaf starflower (TRBOL)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
836:				
Mac-----	Douglas-fir (PSME)	33	Tanoak (LIDE3)	30
	Ponderosa pine (PIPO)	20	Douglas-fir (PSME)	8
	Sugar pine (PILA)	15	Incense cedar (CADE27)	3
	Tanoak (LIDE3)	12	Sugar pine (PILA)	2
	California black oak (QUKE)	10	Pacific poison oak (TODI)	---
	White fir (ABCO)	7	White fir (ABCO)	2
	Incense cedar (CADE27)	3	California black oak (QUKE)	2
			California honeysuckle (LOHI2)	2
Spine-----	Douglas-fir (PSME)	25	Tanoak (LIDE3)	26
	Sugar pine (PILA)	16	Whiteleaf manzanita (ARMA)	8
	Tanoak (LIDE3)	15	Canyon live oak (QUCH2)	8
	Ponderosa pine (PIPO)	13	Pacific poison oak (TODI)	---
	Canyon live oak (QUCH2)	13	Incense cedar (CADE27)	3
	California black oak (QUKE)	11	Douglas-fir (PSME)	3
	Incense cedar (CADE27)	5	California black oak (QUKE)	3
	White fir (ABCO)	2	Broadleaf starflower (TRBOL)	3
			White fir (ABCO)	1
			Pacific madrone (ARME)	1
			Greenleaf manzanita (ARPA6)	1
			Sugar pine (PILA)	1
837:				
Hietanen-----	Ponderosa pine (PIPO)	24	Tanoak (LIDE3)	25
	Douglas-fir (PSME)	24	Douglas-fir (PSME)	5
	Sugar pine (PILA)	15	Incense cedar (CADE27)	4
	White fir (ABCO)	11	Pacific dogwood (CONU4)	3
	Tanoak (LIDE3)	10	Whiteleaf manzanita (ARMA)	3
	Incense cedar (CADE27)	9	White fir (ABCO)	2
	California black oak (QUKE)	7	Sugar pine (PILA)	2
			Deerbrush (CEIN3)	2
			Western brackenfern (PTAQ)	2
			California black oak (QUKE)	2
			Prostrate ceanothus (CEPR)	1
			Sierra gooseberry (RIRO)	1
			Orcutt brome (BROR2)	1
			Iris (IRIS)	1
			Whitevein shinleaf (PYPI2)	1
			Broadleaf starflower (TRBOL)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
837:				
Spine-----	Douglas-fir (PSME)	25	Tanoak (LIDE3)	26
	Sugar pine (PILA)	16	Whiteleaf manzanita (ARMA)	8
	Tanoak (LIDE3)	15	Canyon live oak (QUCH2)	8
	Ponderosa pine (PIPO)	13	Pacific poison oak (TODI)	---
	Canyon live oak (QUCH2)	13	Incense cedar (CADE27)	3
	California black oak (QUKE)	11	Douglas-fir (PSME)	3
	Incense cedar (CADE27)	5	California black oak (QUKE)	3
	White fir (ABCO)	2	Broadleaf starflower (TRBOL)	3
			White fir (ABCO)	1
			Pacific madrone (ARME)	1
			Greenleaf manzanita (ARPA6)	1
			Sugar pine (PILA)	1
Mac-----	Douglas-fir (PSME)	33	Tanoak (LIDE3)	30
	Ponderosa pine (PIPO)	20	Douglas-fir (PSME)	8
	Sugar pine (PILA)	15	Incense cedar (CADE27)	3
	Tanoak (LIDE3)	12	Sugar pine (PILA)	2
	California black oak (QUKE)	10	Pacific poison oak (TODI)	---
	White fir (ABCO)	7	White fir (ABCO)	2
	Incense cedar (CADE27)	3	California black oak (QUKE)	2
			California honeysuckle (LOHI2)	2
838:				
Dixmine-----	Douglas-fir (PSME)	45	Tanoak (LIDE3)	7
	California black oak (QUKE)	15	Canyon live oak (QUCH2)	7
	Sugar pine (PILA)	8	Deerbrush (CEIN3)	5
	White fir (ABCO)	8	Douglas-fir (PSME)	5
	Incense cedar (CADE27)	8	Pacific poison oak (TODI)	---
	Ponderosa pine (PIPO)	7	Broadleaf starflower (TRBOL)	4
	Canyon live oak (QUCH2)	6	Incense cedar (CADE27)	2
	Tanoak (LIDE3)	3	Sugar pine (PILA)	2
			California black oak (QUKE)	2
			White fir (ABCO)	2
			California needlegrass (ACOCC)	2
Spine-----	Douglas-fir (PSME)	25	Tanoak (LIDE3)	26
	Sugar pine (PILA)	16	Whiteleaf manzanita (ARMA)	8
	Tanoak (LIDE3)	15	Canyon live oak (QUCH2)	8
	Ponderosa pine (PIPO)	13	Pacific poison oak (TODI)	---
	Canyon live oak (QUCH2)	13	Incense cedar (CADE27)	3
	California black oak (QUKE)	11	Douglas-fir (PSME)	3
	Incense cedar (CADE27)	5	California black oak (QUKE)	3
	White fir (ABCO)	2	Broadleaf starflower (TRBOL)	3
			White fir (ABCO)	1
			Pacific madrone (ARME)	1
			Greenleaf manzanita (ARPA6)	1
			Sugar pine (PILA)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
838:				
Mac-----	Douglas-fir (PSME)	33	Tanoak (LIDE3)	30
	Ponderosa pine (PIPO)	20	Douglas-fir (PSME)	8
	Sugar pine (PILA)	15	Incense cedar (CADE27)	3
	Tanoak (LIDE3)	12	Sugar pine (PILA)	2
	California black oak (QUKE)	10	Pacific poison oak (TODI)	--
	White fir (ABCO)	7	White fir (ABCO)	2
	Incense cedar (CADE27)	3	California black oak (QUKE)	2
			California honeysuckle (LOHI2)	2
839:				
Chawanakee-----	Ponderosa pine (PIPO)	43	Canyon live oak (QUCH2)	10
	Sugar pine (PILA)	23	Whiteleaf manzanita (ARMA)	10
	White fir (ABCO)	14	Greenleaf manzanita (ARPA6)	8
	Incense cedar (CADE27)	10	Shrub tanoak (LIDEE)	7
	Canyon live oak (QUCH2)	7	Sugar pine (PILA)	4
	California black oak (QUKE)	3	Ponderosa pine (PIPO)	4
			White fir (ABCO)	4
			Incense cedar (CADE27)	2
			Whitethorn ceanothus (CECO)	2
			Sierra chinquapin (CHSE11)	2
			Western brackenfern (PTAQ)	1
Billscabin-----	White fir (ABCO)	32	White fir (ABCO)	13
	Douglas-fir (PSME)	25	Incense cedar (CADE27)	7
	Sugar pine (PILA)	19	Whitethorn ceanothus (CECO)	4
	Ponderosa pine (PIPO)	12	Douglas-fir (PSME)	4
	Incense cedar (CADE27)	7	Pacific dogwood (CONU4)	3
	California black oak (QUKE)	4	Deerbrush (CEIN3)	3
	Pacific madrone (ARME)	1	Broadleaf starflower (TRBOL)	3
			California hazel (COCOC)	2
			Common snowberry (SYAL)	2
			Sierra chinquapin (CHSE11)	2
			Bigleaf maple (ACMA3)	1
			Tanoak (LIDE3)	1
			Ponderosa pine (PIPO)	1
			Huckleberry oak (QUVA)	1
			Whitevein shinleaf (PYPI2)	1
			Sierra gooseberry (RIRO)	1
			California black oak (QUKE)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
841:				
Billscabin-----	White fir (ABCO)	32	White fir (ABCO)	13
	Douglas-fir (PSME)	25	Incense cedar (CADE27)	7
	Sugar pine (PILA)	19	Whitethorn ceanothus	4
	Ponderosa pine (PIPO)	12	(CECO)	
	Incense cedar (CADE27)	7	Douglas-fir (PSME)	4
	California black oak	4	Pacific dogwood (CONU4)	3
	(QUKE)		Deerbrush (CEIN3)	3
	Pacific madrone (ARME)	1	Broadleaf starflower	3
			(TRBOL)	
			California hazel (COCOC)	2
			Common snowberry (SYAL)	2
			Sierra chinquapin	2
			(CHSE11)	
			Bigleaf maple (ACMA3)	1
			Tanoak (LIDE3)	1
			Ponderosa pine (PIPO)	1
			Huckleberry oak (QUVA)	1
			Whitevein shinleaf	1
			(PYPI2)	
			Sierra gooseberry (RIRO)	1
			California black oak	1
			(QUKE)	
Bonneyridge-----	Ponderosa pine (PIPO)	25	White fir (ABCO)	11
	Sugar pine (PILA)	24	Incense cedar (CADE27)	10
	White fir (ABCO)	22	Tanoak (LIDE3)	9
	Incense cedar (CADE27)	14	Whitethorn ceanothus	4
	California black oak	8	(CECO)	
	(QUKE)		Western brackenfern	4
	Douglas-fir (PSME)	6	(PTAQ)	
	Pacific madrone (ARME)	1	Greenleaf manzanita	3
			(ARPA6)	
			Pacific dogwood (CONU4)	3
			Sierra chinquapin	2
			(CHSE11)	
			Deerbrush (CEIN3)	2
			California black oak	2
			(QUKE)	
			California hazel (COCOC)	2
			Sugar pine (PILA)	2
			Whiteleaf manzanita	1
			(ARMA)	
			Common snowberry (SYAL)	1
			Pipsissewa (CHUM)	1
			Whitevein shinleaf	1
			(PYPI2)	
			California needlegrass	1
			(ACOCC)	
			Iris (IRIS)	1
			Sierra gooseberry (RIRO)	1
			Broadleaf starflower	1
			(TRBOL)	
			Lupine (LUPIN)	1
			Ponderosa pine (PIPO)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
842:				
Bills cabin-----	White fir (ABCO)	32	White fir (ABCO)	13
	Douglas-fir (PSME)	25	Incense cedar (CADE27)	7
	Sugar pine (PILA)	19	Whitethorn ceanothus (CECO)	4
	Ponderosa pine (PIPO)	12	Douglas-fir (PSME)	4
	Incense cedar (CADE27)	7	Pacific dogwood (CONU4)	3
	California black oak (QUKE)	4	Deerbrush (CEIN3)	3
	Pacific madrone (ARME)	1	Broadleaf starflower (TRBOL)	3
			California hazel (COCOC)	2
			Common snowberry (SYAL)	2
			Sierra chinquapin (CHSE11)	2
			Bigleaf maple (ACMA3)	1
			Tanoak (LIDE3)	1
			Ponderosa pine (PIPO)	1
			Huckleberry oak (QUVA)	1
			Whitevein shinleaf (PYPI2)	1
			Sierra gooseberry (RIRO)	1
			California black oak (QUKE)	1
Bonneyridge-----	Ponderosa pine (PIPO)	25	White fir (ABCO)	11
	Sugar pine (PILA)	24	Incense cedar (CADE27)	10
	White fir (ABCO)	22	Tanoak (LIDE3)	9
	Incense cedar (CADE27)	14	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	8	Western brackenfern (PTAQ)	4
	Douglas-fir (PSME)	6	Greenleaf manzanita (ARPA6)	3
	Pacific madrone (ARME)	1	Pacific dogwood (CONU4)	3
			Sierra chinquapin (CHSE11)	2
			Deerbrush (CEIN3)	2
			California black oak (QUKE)	2
			California hazel (COCOC)	2
			Sugar pine (PILA)	2
			Whiteleaf manzanita (ARMA)	1
			Common snowberry (SYAL)	1
			Pipsissewa (CHUM)	1
			Whitevein shinleaf (PYPI2)	1
			California needlegrass (ACOCC)	1
			Iris (IRIS)	1
			Sierra gooseberry (RIRO)	1
			Broadleaf starflower (TRBOL)	1
			Lupine (LUPIN)	1
			Ponderosa pine (PIPO)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
846:				
Bonneyridge-----	Ponderosa pine (PIPO)	25	White fir (ABCO)	11
	Sugar pine (PILA)	24	Incense cedar (CADE27)	10
	White fir (ABCO)	22	Tanoak (LIDE3)	9
	Incense cedar (CADE27)	14	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	8	Western brackenfern (PTAQ)	4
	Douglas-fir (PSME)	6	Greenleaf manzanita (ARPA6)	3
	Pacific madrone (ARME)	1	Pacific dogwood (CONU4)	3
			Sierra chinquapin (CHSE11)	2
			Deerbrush (CEIN3)	2
			California black oak (QUKE)	2
			California hazel (COCOC)	2
			Sugar pine (PILA)	2
			Whiteleaf manzanita (ARMA)	1
			Common snowberry (SYAL)	1
			Pipsissewa (CHUM)	1
			Whitevein shinleaf (PYPI2)	1
			California needlegrass (ACOCC)	1
			Iris (IRIS)	1
			Sierra gooseberry (RIRO)	1
			Broadleaf starflower (TRBOL)	1
			Lupine (LUPIN)	1
			Ponderosa pine (PIPO)	1
Lewisflat-----	Douglas-fir (PSME)	22	Tanoak (LIDE3)	17
	White fir (ABCO)	20	White fir (ABCO)	11
	Sugar pine (PILA)	20	Incense cedar (CADE27)	10
	Ponderosa pine (PIPO)	18	Broadleaf starflower (TRBOL)	4
	Incense cedar (CADE27)	11	Pipsissewa (CHUM)	2
	California black oak (QUKE)	6	Douglas-fir (PSME)	2
	Pacific madrone (ARME)	3	Pacific madrone (ARME)	2
			Pacific dogwood (CONU4)	2
			Iris (IRIS)	2
			Deerbrush (CEIN3)	2
			Western brackenfern (PTAQ)	2
			Common snowberry (SYAL)	1
			California wild grape (VICA5)	1
			Whitevein shinleaf (PYPI2)	1
			California black oak (QUKE)	1
			Woodland strawberry (FRVE)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
847:				
Bonneyridge-----	Ponderosa pine (PIPO)	25	White fir (ABCO)	11
	Sugar pine (PILA)	24	Incense cedar (CADE27)	10
	White fir (ABCO)	22	Tanoak (LIDE3)	9
	Incense cedar (CADE27)	14	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	8	Western brackenfern (PTAQ)	4
	Douglas-fir (PSME)	6	Greenleaf manzanita (ARPA6)	3
	Pacific madrone (ARME)	1	Pacific dogwood (CONU4)	3
			Sierra chinquapin (CHSE11)	2
			Deerbrush (CEIN3)	2
			California black oak (QUKE)	2
			California hazel (COCOC)	2
			Sugar pine (PILA)	2
			Whiteleaf manzanita (ARMA)	1
			Common snowberry (SYAL)	1
			Pipsissewa (CHUM)	1
			Whitevein shinleaf (PYPI2)	1
			California needlegrass (ACOCC)	1
			Iris (IRIS)	1
			Sierra gooseberry (RIRO)	1
			Broadleaf starflower (TRBOL)	1
			Lupine (LUPIN)	1
			Ponderosa pine (PIPO)	1
Lewisflat-----	Douglas-fir (PSME)	22	Tanoak (LIDE3)	17
	White fir (ABCO)	20	White fir (ABCO)	11
	Sugar pine (PILA)	20	Incense cedar (CADE27)	10
	Ponderosa pine (PIPO)	18	Broadleaf starflower (TRBOL)	4
	Incense cedar (CADE27)	11	Pipsissewa (CHUM)	2
	California black oak (QUKE)	6	Douglas-fir (PSME)	2
	Pacific madrone (ARME)	3	Pacific madrone (ARME)	2
			Pacific dogwood (CONU4)	2
			Iris (IRIS)	2
			Deerbrush (CEIN3)	2
			Western brackenfern (PTAQ)	2
			Common snowberry (SYAL)	1
			California wild grape (VICA5)	1
			Whitevein shinleaf (PYPI2)	1
			California black oak (QUKE)	1
			Woodland strawberry (FRVE)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
848:				
Bonneyridge-----	Ponderosa pine (PIPO)	25	White fir (ABCO)	11
	Sugar pine (PILA)	24	Incense cedar (CADE27)	10
	White fir (ABCO)	22	Tanoak (LIDE3)	9
	Incense cedar (CADE27)	14	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	8	Western brackenfern (PTAQ)	4
	Douglas-fir (PSME)	6	Greenleaf manzanita (ARPA6)	3
	Pacific madrone (ARME)	1	Pacific dogwood (CONU4)	3
			Sierra chinquapin (CHSE11)	2
			Deerbrush (CEIN3)	2
			California black oak (QUKE)	2
			California hazel (COCOC)	2
			Sugar pine (PILA)	2
			Whiteleaf manzanita (ARMA)	1
			Common snowberry (SYAL)	1
			Pipsissewa (CHUM)	1
			Whitevein shinleaf (PYPI2)	1
			California needlegrass (ACOCC)	1
			Iris (IRIS)	1
			Sierra gooseberry (RIRO)	1
			Broadleaf starflower (TRBOL)	1
			Lupine (LUPIN)	1
			Ponderosa pine (PIPO)	1
Lewisflat-----	Douglas-fir (PSME)	22	Tanoak (LIDE3)	17
	White fir (ABCO)	20	White fir (ABCO)	11
	Sugar pine (PILA)	20	Incense cedar (CADE27)	10
	Ponderosa pine (PIPO)	18	Broadleaf starflower (TRBOL)	4
	Incense cedar (CADE27)	11	Pipsissewa (CHUM)	2
	California black oak (QUKE)	6	Douglas-fir (PSME)	2
	Pacific madrone (ARME)	3	Pacific madrone (ARME)	2
			Pacific dogwood (CONU4)	2
			Iris (IRIS)	2
			Deerbrush (CEIN3)	2
			Western brackenfern (PTAQ)	2
			Common snowberry (SYAL)	1
			California wild grape (VICA5)	1
			Whitevein shinleaf (PYPI2)	1
			California black oak (QUKE)	1
			Woodland strawberry (FRVE)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
850: Lewisflat-----	Douglas-fir (PSME)	22	Tanoak (LIDE3)	17
	White fir (ABCO)	20	White fir (ABCO)	11
	Sugar pine (PILA)	20	Incense cedar (CADE27)	10
	Ponderosa pine (PIPO)	18	Broadleaf starflower (TRBOL)	4
	Incense cedar (CADE27)	11	Pipsissewa (CHUM)	2
	California black oak (QUKE)	6	Douglas-fir (PSME)	2
	Pacific madrone (ARME)	3	Pacific madrone (ARME)	2
			Pacific dogwood (CONU4)	2
			Iris (IRIS)	2
			Deerbrush (CEIN3)	2
			Western brackenfern (PTAQ)	2
			Common snowberry (SYAL)	1
			California wild grape (VICA5)	1
			Whitevein shinleaf (PYPI2)	1
			California black oak (QUKE)	1
			Woodland strawberry (FRVE)	1
851: Lewisflat-----	Douglas-fir (PSME)	22	Tanoak (LIDE3)	17
	White fir (ABCO)	20	White fir (ABCO)	11
	Sugar pine (PILA)	20	Incense cedar (CADE27)	10
	Ponderosa pine (PIPO)	18	Broadleaf starflower (TRBOL)	4
	Incense cedar (CADE27)	11	Pipsissewa (CHUM)	2
	California black oak (QUKE)	6	Douglas-fir (PSME)	2
	Pacific madrone (ARME)	3	Pacific madrone (ARME)	2
			Pacific dogwood (CONU4)	2
			Iris (IRIS)	2
			Deerbrush (CEIN3)	2
			Western brackenfern (PTAQ)	2
			Common snowberry (SYAL)	1
			California wild grape (VICA5)	1
			Whitevein shinleaf (PYPI2)	1
			California black oak (QUKE)	1
			Woodland strawberry (FRVE)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
852: Lewisflat-----	Douglas-fir (PSME)	22	Tanoak (LIDE3)	17
	White fir (ABCO)	20	White fir (ABCO)	11
	Sugar pine (PILA)	20	Incense cedar (CADE27)	10
	Ponderosa pine (PIPO)	18	Broadleaf starflower (TRBOL)	4
	Incense cedar (CADE27)	11	Pipsissewa (CHUM)	2
	California black oak (QUKE)	6	Douglas-fir (PSME)	2
	Pacific madrone (ARME)	3	Pacific madrone (ARME)	2
			Pacific dogwood (CONU4)	2
			Iris (IRIS)	2
			Deerbrush (CEIN3)	2
			Western brackenfern (PTAQ)	2
			Common snowberry (SYAL)	1
			California wild grape (VICA5)	1
			Whitevein shinleaf (PYPI2)	1
			California black oak (QUKE)	1
			Woodland strawberry (FRVE)	1
860: Toadtown-----	Douglas-fir (PSME)	27	Tanoak (LIDE3)	25
	Ponderosa pine (PIPO)	19	White fir (ABCO)	8
	Sugar pine (PILA)	16	Incense cedar (CADE27)	8
	White fir (ABCO)	16	Pacific madrone (ARME)	7
	Incense cedar (CADE27)	7	Deerbrush (CEIN3)	6
	Tanoak (LIDE3)	6	California black oak (QUKE)	3
	Pacific madrone (ARME)	5	Broadleaf starflower (TRBOL)	3
	California black oak (QUKE)	4	Douglas-fir (PSME)	3
			Sierra gooseberry (RIRO)	1
			Sugar pine (PILA)	1
			Pacific dogwood (CONU4)	1
			Common snowberry (SYAL)	1
			Western brackenfern (PTAQ)	1
			Iris (IRIS)	1
			California wildrose (ROCA2)	1
			Himalaya blackberry (RUDI2)	1
			Whiteleaf manzanita (ARMA)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
860:				
Powellton-----	Douglas-fir (PSME)	22	Tanoak (LIDE3)	20
	Sugar pine (PILA)	16	White fir (ABCO)	5
	White fir (ABCO)	15	Douglas-fir (PSME)	5
	Ponderosa pine (PIPO)	12	Deerbrush (CEIN3)	4
	Tanoak (LIDE3)	12	Incense cedar (CADE27)	2
	Incense cedar (CADE27)	8	Pacific madrone (ARME)	2
	California black oak (QUKE)	8	California hazel (COCOC)	2
	Pacific madrone (ARME)	7	Broadleaf starflower (TRBOL)	2
			Himalaya blackberry (RUDI2)	2
			Pacific dogwood (CONU4)	1
			Western brackenfern (PTAQ)	1
			California black oak (QUKE)	1
			Sugar pine (PILA)	1
			Sierra gooseberry (RIRO)	1
			California wildrose (ROCA2)	1
			Common snowberry (SYAL)	1
861:				
Toadtown-----	Douglas-fir (PSME)	27	Tanoak (LIDE3)	25
	Ponderosa pine (PIPO)	19	White fir (ABCO)	8
	Sugar pine (PILA)	16	Incense cedar (CADE27)	8
	White fir (ABCO)	16	Pacific madrone (ARME)	7
	Incense cedar (CADE27)	7	Deerbrush (CEIN3)	6
	Tanoak (LIDE3)	6	California black oak (QUKE)	3
	Pacific madrone (ARME)	5	Broadleaf starflower (TRBOL)	3
	California black oak (QUKE)	4	Douglas-fir (PSME)	3
			Sierra gooseberry (RIRO)	1
			Sugar pine (PILA)	1
			Pacific dogwood (CONU4)	1
			Common snowberry (SYAL)	1
			Western brackenfern (PTAQ)	1
			Iris (IRIS)	1
			California wildrose (ROCA2)	1
			Himalaya blackberry (RUDI2)	1
			Whiteleaf manzanita (ARMA)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
861: Powellton-----	Douglas-fir (PSME)	22	Tanoak (LIDE3)	20
	Sugar pine (PILA)	16	White fir (ABCO)	5
	White fir (ABCO)	15	Douglas-fir (PSME)	5
	Ponderosa pine (PIPO)	12	Deerbrush (CEIN3)	4
	Tanoak (LIDE3)	12	Incense cedar (CADE27)	2
	Incense cedar (CADE27)	8	Pacific madrone (ARME)	2
	California black oak (QUKE)	8	California hazel (COCOC)	2
	Pacific madrone (ARME)	7	Broadleaf starflower (TRBOL)	2
			Himalaya blackberry (RUDI2)	2
			Pacific dogwood (CONU4)	1
			Western brackenfern (PTAQ)	1
			California black oak (QUKE)	1
			Sugar pine (PILA)	1
			Sierra gooseberry (RIRO)	1
			California wildrose (ROCA2)	1
			Common snowberry (SYAL)	1
862: Toadtown-----	Douglas-fir (PSME)	27	Tanoak (LIDE3)	25
	Ponderosa pine (PIPO)	19	White fir (ABCO)	8
	Sugar pine (PILA)	16	Incense cedar (CADE27)	8
	White fir (ABCO)	16	Pacific madrone (ARME)	7
	Incense cedar (CADE27)	7	Deerbrush (CEIN3)	6
	Tanoak (LIDE3)	6	California black oak (QUKE)	3
	Pacific madrone (ARME)	5	Broadleaf starflower (TRBOL)	3
	California black oak (QUKE)	4	Douglas-fir (PSME)	3
			Sierra gooseberry (RIRO)	1
			Sugar pine (PILA)	1
			Pacific dogwood (CONU4)	1
			Common snowberry (SYAL)	1
			Western brackenfern (PTAQ)	1
			Iris (IRIS)	1
			California wildrose (ROCA2)	1
			Himalaya blackberry (RUDI2)	1
			Whiteleaf manzanita (ARMA)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
862: Powellton-----	Douglas-fir (PSME)	22	Tanoak (LIDE3)	20
	Sugar pine (PILA)	16	White fir (ABCO)	5
	White fir (ABCO)	15	Douglas-fir (PSME)	5
	Ponderosa pine (PIPO)	12	Deerbrush (CEIN3)	4
	Tanoak (LIDE3)	12	Incense cedar (CADE27)	2
	Incense cedar (CADE27)	8	Pacific madrone (ARME)	2
	California black oak (QUKE)	8	California hazel (COCOC)	2
	Pacific madrone (ARME)	7	Broadleaf starflower (TRBOL)	2
			Himalaya blackberry (RUDI2)	2
			Pacific dogwood (CONU4)	1
			Western brackenfern (PTAQ)	1
			California black oak (QUKE)	1
			Sugar pine (PILA)	1
			Sierra gooseberry (RIRO)	1
			California wildrose (ROCA2)	1
			Common snowberry (SYAL)	1
863: Toadtown-----	Douglas-fir (PSME)	27	Tanoak (LIDE3)	25
	Ponderosa pine (PIPO)	19	White fir (ABCO)	8
	Sugar pine (PILA)	16	Incense cedar (CADE27)	8
	White fir (ABCO)	16	Pacific madrone (ARME)	7
	Incense cedar (CADE27)	7	Deerbrush (CEIN3)	6
	Tanoak (LIDE3)	6	California black oak (QUKE)	3
	Pacific madrone (ARME)	5	Broadleaf starflower (TRBOL)	3
	California black oak (QUKE)	4	Douglas-fir (PSME)	3
			Sierra gooseberry (RIRO)	1
			Sugar pine (PILA)	1
			Pacific dogwood (CONU4)	1
			Common snowberry (SYAL)	1
			Western brackenfern (PTAQ)	1
			Iris (IRIS)	1
			California wildrose (ROCA2)	1
			Himalaya blackberry (RUDI2)	1
			Whiteleaf manzanita (ARMA)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
863:				
Powellton-----	Douglas-fir (PSME)	22	Tanoak (LIDE3)	20
	Sugar pine (PILA)	16	White fir (ABCO)	5
	White fir (ABCO)	15	Douglas-fir (PSME)	5
	Ponderosa pine (PIPO)	12	Deerbrush (CEIN3)	4
	Tanoak (LIDE3)	12	Incense cedar (CADE27)	2
	Incense cedar (CADE27)	8	Pacific madrone (ARME)	2
	California black oak (QUKE)	8	California hazel (COCOC)	2
	Pacific madrone (ARME)	7	Broadleaf starflower (TRBOL)	2
			Himalaya blackberry (RUDI2)	2
			Pacific dogwood (CONU4)	1
			Western brackenfern (PTAQ)	1
			California black oak (QUKE)	1
			Sugar pine (PILA)	1
			Sierra gooseberry (RIRO)	1
			California wildrose (ROCA2)	1
			Common snowberry (SYAL)	1
880:				
Sites taxadjunct	Ponderosa pine (PIPO)	34	Deerbrush (CEIN3)	13
	Pacific madrone (ARME)	18	Tanoak (LIDE3)	12
	Douglas-fir (PSME)	17	Douglas-fir (PSME)	7
	Incense cedar (CADE27)	8	Pacific poison oak (TODI)	---
	Sugar pine (PILA)	7	Incense cedar (CADE27)	6
	Tanoak (LIDE3)	7	Pacific madrone (ARME)	6
	California black oak (QUKE)	5	California black oak (QUKE)	4
	White fir (ABCO)	4	Western brackenfern (PTAQ)	3
			Pacific dogwood (CONU4)	2
			Himalaya blackberry (RUDI2)	2
			California honeysuckle (LOHI2)	2
			California wildrose (ROCA2)	1
			White fir (ABCO)	1
			Common snowberry (SYAL)	1
			Ponderosa pine (PIPO)	1
			Orcutt brome (BROR2)	1
			Sugar pine (PILA)	1
Jocal taxadjunct	Ponderosa pine (PIPO)	26	Tanoak (LIDE3)	8
	Douglas-fir (PSME)	20	Incense cedar (CADE27)	5
	Sugar pine (PILA)	17	Douglas-fir (PSME)	5
	Pacific madrone (ARME)	12	Pacific madrone (ARME)	4
	White fir (ABCO)	10	Sugar pine (PILA)	3
	Incense cedar (CADE27)	10	Pacific dogwood (CONU4)	2
	California black oak (QUKE)	5	Western brackenfern (PTAQ)	2
			Sierra gooseberry (RIRO)	2
			White fir (ABCO)	2
			Deerbrush (CEIN3)	1
			California black oak (QUKE)	1
			Orcutt brome (BROR2)	1
			Pipsissewa (CHUM)	1
			Broadleaf starflower (TRBOL)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
881:				
Sites taxadjunct	Ponderosa pine (PIPO)	34	Deerbrush (CEIN3)	13
	Pacific madrone (ARME)	18	Tanoak (LIDE3)	12
	Douglas-fir (PSME)	17	Douglas-fir (PSME)	7
	Incense cedar (CADE27)	8	Pacific poison oak (TODI)	---
	Sugar pine (PILA)	7	Incense cedar (CADE27)	6
	Tanoak (LIDE3)	7	Pacific madrone (ARME)	6
	California black oak (QUKE)	5	California black oak (QUKE)	4
	White fir (ABCO)	4	Western brackenfern (PTAQ)	3
			Pacific dogwood (CONU4)	2
			Himalaya blackberry (RUDI2)	2
			California honeysuckle (LOHI2)	2
			California wildrose (ROCA2)	1
			White fir (ABCO)	1
			Common snowberry (SYAL)	1
			Ponderosa pine (PIPO)	1
			Orcutt brome (BROR2)	1
			Sugar pine (PILA)	1
Jocal taxadjunct	Ponderosa pine (PIPO)	26	Tanoak (LIDE3)	8
	Douglas-fir (PSME)	20	Incense cedar (CADE27)	5
	Sugar pine (PILA)	17	Douglas-fir (PSME)	5
	Pacific madrone (ARME)	12	Pacific madrone (ARME)	4
	White fir (ABCO)	10	Sugar pine (PILA)	3
	Incense cedar (CADE27)	10	Pacific dogwood (CONU4)	2
	California black oak (QUKE)	5	Western brackenfern (PTAQ)	2
			Sierra gooseberry (RIRO)	2
			White fir (ABCO)	2
			Deerbrush (CEIN3)	1
			California black oak (QUKE)	1
			Orcutt brome (BROR2)	1
			Pipsissewa (CHUM)	1
			Broadleaf starflower (TRBOL)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
882:				
Sites taxadjunct	Ponderosa pine (PIPO)	34	Deerbrush (CEIN3)	13
	Pacific madrone (ARME)	18	Tanoak (LIDE3)	12
	Douglas-fir (PSME)	17	Douglas-fir (PSME)	7
	Incense cedar (CADE27)	8	Pacific poison oak (TODI)	---
	Sugar pine (PILA)	7	Incense cedar (CADE27)	6
	Tanoak (LIDE3)	7	Pacific madrone (ARME)	6
	California black oak (QUKE)	5	California black oak (QUKE)	4
	White fir (ABCO)	4	Western brackenfern (PTAQ)	3
			Pacific dogwood (CONU4)	2
			Himalaya blackberry (RUDI2)	2
			California honeysuckle (LOHI2)	2
			California wildrose (ROCA2)	1
			White fir (ABCO)	1
			Common snowberry (SYAL)	1
			Ponderosa pine (PIPO)	1
			Orcutt brome (BROR2)	1
			Sugar pine (PILA)	1
Jocal taxadjunct	Ponderosa pine (PIPO)	26	Tanoak (LIDE3)	8
	Douglas-fir (PSME)	20	Incense cedar (CADE27)	5
	Sugar pine (PILA)	17	Douglas-fir (PSME)	5
	Pacific madrone (ARME)	12	Pacific madrone (ARME)	4
	White fir (ABCO)	10	Sugar pine (PILA)	3
	Incense cedar (CADE27)	10	Pacific dogwood (CONU4)	2
	California black oak (QUKE)	5	Western brackenfern (PTAQ)	2
			Sierra gooseberry (RIRO)	2
			White fir (ABCO)	2
			Deerbrush (CEIN3)	1
			California black oak (QUKE)	1
			Orcutt brome (BROR2)	1
			Pipsissewa (CHUM)	1
			Broadleaf starflower (TRBOL)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
883:				
Sites taxadjunct	Ponderosa pine (PIPO)	34	Deerbrush (CEIN3)	13
	Pacific madrone (ARME)	18	Tanoak (LIDE3)	12
	Douglas-fir (PSME)	17	Douglas-fir (PSME)	7
	Incense cedar (CADE27)	8	Pacific poison oak (TODI)	---
	Sugar pine (PILA)	7	Incense cedar (CADE27)	6
	Tanoak (LIDE3)	7	Pacific madrone (ARME)	6
	California black oak (QUKE)	5	California black oak (QUKE)	4
	White fir (ABCO)	4	Western brackenfern (PTAQ)	3
			Pacific dogwood (CONU4)	2
			Himalaya blackberry (RUDI2)	2
			California honeysuckle (LOHI2)	2
			California wildrose (ROCA2)	1
			White fir (ABCO)	1
			Common snowberry (SYAL)	1
			Ponderosa pine (PIPO)	1
			Orcutt brome (BROR2)	1
			Sugar pine (PILA)	1
Jocal taxadjunct	Ponderosa pine (PIPO)	26	Tanoak (LIDE3)	8
	Douglas-fir (PSME)	20	Incense cedar (CADE27)	5
	Sugar pine (PILA)	17	Douglas-fir (PSME)	5
	Pacific madrone (ARME)	12	Pacific madrone (ARME)	4
	White fir (ABCO)	10	Sugar pine (PILA)	3
	Incense cedar (CADE27)	10	Pacific dogwood (CONU4)	2
	California black oak (QUKE)	5	Western brackenfern (PTAQ)	2
			Sierra gooseberry (RIRO)	2
			White fir (ABCO)	2
			Deerbrush (CEIN3)	1
			California black oak (QUKE)	1
			Orcutt brome (BROR2)	1
			Pipsissewa (CHUM)	1
			Broadleaf starflower (TRBOL)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
885: Rogerville-----	Sugar pine (PILA)	20	Tanoak (LIDE3)	31
	Douglas-fir (PSME)	20	Deerbrush (CEIN3)	5
	Ponderosa pine (PIPO)	16	White fir (ABCO)	5
	White fir (ABCO)	14	Incense cedar (CADE27)	4
	Tanoak (LIDE3)	10	Douglas-fir (PSME)	4
	Pacific madrone (ARME)	8	Sugar pine (PILA)	3
	Incense cedar (CADE27)	7	Western brackenfern (PTAQ)	2
	California black oak (QUKE)	5	California black oak (QUKE)	2
			Broadleaf starflower (TRBOL)	2
			Pacific madrone (ARME)	2
			Whiteleaf manzanita (ARMA)	2
			California hazel (COCOC)	2
			Greenleaf manzanita (ARPA6)	1
			Orcutt brome (BROR2)	1
			Iris (IRIS)	1
			California wildrose (ROCA2)	1
			Common snowberry (SYAL)	1
			Pacific dogwood (CONU4)	1
			Sierra gooseberry (RIRO)	1
886: Rogerville-----	Sugar pine (PILA)	20	Tanoak (LIDE3)	31
	Douglas-fir (PSME)	20	Deerbrush (CEIN3)	5
	Ponderosa pine (PIPO)	16	White fir (ABCO)	5
	White fir (ABCO)	14	Incense cedar (CADE27)	4
	Tanoak (LIDE3)	10	Douglas-fir (PSME)	4
	Pacific madrone (ARME)	8	Sugar pine (PILA)	3
	Incense cedar (CADE27)	7	Western brackenfern (PTAQ)	2
	California black oak (QUKE)	5	California black oak (QUKE)	2
			Broadleaf starflower (TRBOL)	2
			Pacific madrone (ARME)	2
			Whiteleaf manzanita (ARMA)	2
			California hazel (COCOC)	2
			Greenleaf manzanita (ARPA6)	1
			Orcutt brome (BROR2)	1
			Iris (IRIS)	1
			California wildrose (ROCA2)	1
			Common snowberry (SYAL)	1
			Pacific dogwood (CONU4)	1
			Sierra gooseberry (RIRO)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
892:				
Rogerville-----	Sugar pine (PILA)	20	Tanoak (LIDE3)	31
	Douglas-fir (PSME)	20	Deerbrush (CEIN3)	5
	Ponderosa pine (PIPO)	16	White fir (ABCO)	5
	White fir (ABCO)	14	Incense cedar (CADE27)	4
	Tanoak (LIDE3)	10	Douglas-fir (PSME)	4
	Pacific madrone (ARME)	8	Sugar pine (PILA)	3
	Incense cedar (CADE27)	7	Western brackenfern (PTAQ)	2
	California black oak (QUKE)	5	California black oak (QUKE)	2
			Broadleaf starflower (TRBOL)	2
			Pacific madrone (ARME)	2
			Whiteleaf manzanita (ARMA)	2
			California hazel (COCOC)	2
			Greenleaf manzanita (ARPA6)	1
			Orcutt brome (BROR2)	1
			Iris (IRIS)	1
			California wildrose (ROCA2)	1
			Common snowberry (SYAL)	1
			Pacific dogwood (CONU4)	1
			Sierra gooseberry (RIRO)	1
893:				
Rogerville-----	Sugar pine (PILA)	20	Tanoak (LIDE3)	31
	Douglas-fir (PSME)	20	Deerbrush (CEIN3)	5
	Ponderosa pine (PIPO)	16	White fir (ABCO)	5
	White fir (ABCO)	14	Incense cedar (CADE27)	4
	Tanoak (LIDE3)	10	Douglas-fir (PSME)	4
	Pacific madrone (ARME)	8	Sugar pine (PILA)	3
	Incense cedar (CADE27)	7	Western brackenfern (PTAQ)	2
	California black oak (QUKE)	5	California black oak (QUKE)	2
			Broadleaf starflower (TRBOL)	2
			Pacific madrone (ARME)	2
			Whiteleaf manzanita (ARMA)	2
			California hazel (COCOC)	2
			Greenleaf manzanita (ARPA6)	1
			Orcutt brome (BROR2)	1
			Iris (IRIS)	1
			California wildrose (ROCA2)	1
			Common snowberry (SYAL)	1
			Pacific dogwood (CONU4)	1
			Sierra gooseberry (RIRO)	1
902:				
Lava flows.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
902: Lumpkin-----	Ponderosa pine (PIPO)	48	Whiteleaf manzanita (ARMA)	10
	Incense cedar (CADE27)	26	Greenleaf manzanita (ARPA6)	8
	California black oak (QUKE)	10	Incense cedar (CADE27)	5
	Sugar pine (PILA)	7	Ponderosa pine (PIPO)	4
	Canyon live oak (QUCH2)	7	White fir (ABCO)	2
	White fir (ABCO)	2	Canyon live oak (QUCH2)	2
			California needlegrass (ACOCC)	1
			Buckwheat (ERIOG)	1
			California black oak (QUKE)	1
			Common snowberry (SYAL)	1
903: Mudwash-----	White fir (ABCO)	29	White fir (ABCO)	13
	Incense cedar (CADE27)	22	Incense cedar (CADE27)	12
	Ponderosa pine (PIPO)	22	Whitethorn ceanothus (CECO)	5
	Sugar pine (PILA)	11	Tanoak (LIDE3)	4
	Douglas-fir (PSME)	7	Common snowberry (SYAL)	4
	California black oak (QUKE)	7	Deerbrush (CEIN3)	3
	Jeffrey pine (PIJE)	1	Sierra gooseberry (RIRO)	3
	Pacific madrone (ARME)	1	Ponderosa pine (PIPO)	3
			California black oak (QUKE)	2
			Sugar pine (PILA)	2
			Greenleaf manzanita (ARPA6)	2
			Whiteleaf manzanita (ARMA)	2
			Douglas-fir (PSME)	1
			Whitevein shinleaf (PYPI2)	1
			Pipsissewa (CHUM)	1
Timberisland----	Ponderosa pine (PIPO)	28	White fir (ABCO)	10
	Incense cedar (CADE27)	27	Deerbrush (CEIN3)	10
	California black oak (QUKE)	13	Incense cedar (CADE27)	8
	White fir (ABCO)	12	Pacific madrone (ARME)	7
	Sugar pine (PILA)	10	California black oak (QUKE)	7
	Douglas-fir (PSME)	7	Tanoak (LIDE3)	5
	Pacific madrone (ARME)	2	Huckleberry oak (QUVA)	5
	Canyon live oak (QUCH2)	1	Ponderosa pine (PIPO)	2
			Sugar pine (PILA)	2
			Greenleaf manzanita (ARPA6)	2
			Whitethorn ceanothus (CECO)	2
			Lupine (LUPIN)	2
			Western brackenfern (PTAQ)	2
			Common snowberry (SYAL)	2
			Douglas-fir (PSME)	1
			Sierra gooseberry (RIRO)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
903: Lavatop-----	Incense cedar (CADE27)	26	Incense cedar (CADE27)	13
	Ponderosa pine (PIPO)	25	Whiteleaf manzanita (ARMA)	8
	White fir (ABCO)	19	White fir (ABCO)	8
	Douglas-fir (PSME)	10	Ponderosa pine (PIPO)	7
	California black oak (QUKE)	10	California hazel (COCOC)	4
	Sugar pine (PILA)	9	Pacific dogwood (CONU4)	4
	Canyon live oak (QUCH2)	1	Douglas-fir (PSME)	3
			Greenleaf manzanita (ARPA6)	2
			California black oak (QUKE)	2
			Common snowberry (SYAL)	2
			Pipsissewa (CHUM)	1
			Whitevein shinleaf (PYPI2)	1
			Deerbrush (CEIN3)	1
			Sugar pine (PILA)	1
904: Lava flows.				
Lavatop-----	Incense cedar (CADE27)	26	Incense cedar (CADE27)	13
	Ponderosa pine (PIPO)	25	Whiteleaf manzanita (ARMA)	8
	White fir (ABCO)	19	White fir (ABCO)	8
	Douglas-fir (PSME)	10	Ponderosa pine (PIPO)	7
	California black oak (QUKE)	10	California hazel (COCOC)	4
	Sugar pine (PILA)	9	Pacific dogwood (CONU4)	4
	Canyon live oak (QUCH2)	1	Douglas-fir (PSME)	3
			Greenleaf manzanita (ARPA6)	2
			California black oak (QUKE)	2
			Common snowberry (SYAL)	2
			Pipsissewa (CHUM)	1
			Whitevein shinleaf (PYPI2)	1
			Deerbrush (CEIN3)	1
			Sugar pine (PILA)	1
905: Lava flows.				
Lumpkin-----	Ponderosa pine (PIPO)	48	Whiteleaf manzanita (ARMA)	10
	Incense cedar (CADE27)	26	Greenleaf manzanita (ARPA6)	8
	California black oak (QUKE)	10	Incense cedar (CADE27)	5
	Sugar pine (PILA)	7	Ponderosa pine (PIPO)	4
	Canyon live oak (QUCH2)	7	White fir (ABCO)	2
	White fir (ABCO)	2	Canyon live oak (QUCH2)	2
			California needlegrass (ACOCC)	1
			Buckwheat (ERIOG)	1
			California black oak (QUKE)	1
			Common snowberry (SYAL)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
906: Lava flows.				
Lumpkin-----	Ponderosa pine (PIPO)	48	Whiteleaf manzanita (ARMA)	10
	Incense cedar (CADE27)	26	Greenleaf manzanita (ARPA6)	8
	California black oak (QUKE)	10	Incense cedar (CADE27)	5
	Sugar pine (PILA)	7	Ponderosa pine (PIPO)	4
	Canyon live oak (QUCH2)	7	White fir (ABCO)	2
	White fir (ABCO)	2	Canyon live oak (QUCH2)	2
			California needlegrass (ACOCC)	1
			Buckwheat (ERIOG)	1
			California black oak (QUKE)	1
			Common snowberry (SYAL)	1
911: Endoaquolls-----	---	---	Carex (CAREX)	---
			Rush (JUNCU)	---
			Willow (SALIX)	---
			Clover (TRIFO)	---
			Alpine timothy (PHAL2)	---
			Common yarrow (ACMI2)	---
			Ponderosa pine (PIPO)	---
			Incense cedar (CADE27)	---
			Thistle (CIRSI)	---
			California false hellebore (VECAC2)	---
923: Powderhouse-----	White fir (ABCO)	46	White fir (ABCO)	8
	California red fir (ABMA)	19	Huckleberry oak (QUVA)	5
	Incense cedar (CADE27)	18	California red fir (ABMA)	4
	Sugar pine (PILA)	6	Greenleaf manzanita (ARPA6)	3
	Ponderosa pine (PIPO)	4	Whitethorn ceanothus (CECO)	3
	Douglas-fir (PSME)	4	Incense cedar (CADE27)	3
	California black oak (QUKE)	3	Sierra chinquapin (CHSE11)	3
			Common snowberry (SYAL)	2
			Pipsissewa (CHUM)	1
			Pinemat manzanita (ARNE)	1
			Sugar pine (PILA)	1
			Sierra gooseberry (RIRO)	1
			California black oak (QUKE)	1
			Prostrate ceanothus (CEPR)	1
			California buckthorn (FRCAT2)	1
			Whitevein shinleaf (PYPI2)	1
			Sierra currant (RINE)	1
			Starry false Solomons seal (MAST4)	1
			Bitter cherry (PREM)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
923:				
McNair-----	White fir (ABCO)	50	White fir (ABCO)	15
	Sugar pine (PILA)	13	Whitethorn ceanothus (CECO)	6
	California red fir (ABMA)	10	Greenleaf manzanita (ARPA6)	6
	Ponderosa pine (PIPO)	10	Sierra chinquapin (CHSE11)	4
	Incense cedar (CADE27)	8	Common snowberry (SYAL)	3
	California black oak (QUKE)	7	California buckthorn (FRCAT2)	3
	Jeffrey pine (PIJE)	2	California red fir (ABMA)	3
			Incense cedar (CADE27)	2
			Bitterbrush (PURSH)	2
			California hazel (COCOC)	2
			California black oak (QUKE)	2
			Starry false Solomons seal (MAST4)	2
			Sugar pine (PILA)	2
			Huckleberry oak (QUVA)	2
			Western brackenfern (PTAQ)	2
			Sierra gooseberry (RIRO)	1
			Pipsissewa (CHUM)	1
			Sierra currant (RINE)	1
			Whitevein shinleaf (PYPI2)	1
Greenwell-----	White fir (ABCO)	48	White fir (ABCO)	10
	Sugar pine (PILA)	14	Incense cedar (CADE27)	7
	Ponderosa pine (PIPO)	11	Huckleberry oak (QUVA)	6
	California red fir (ABMA)	10	Sierra chinquapin (CHSE11)	5
	Incense cedar (CADE27)	10	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	5	Sierra gooseberry (RIRO)	2
	Jeffrey pine (PIJE)	2	California black oak (QUKE)	2
			Greenleaf manzanita (ARPA6)	2
			Pipsissewa (CHUM)	1
			Starry false Solomons seal (MAST4)	1
			Sugar pine (PILA)	1
			Common snowberry (SYAL)	1
			Western brackenfern (PTAQ)	1
			California red fir (ABMA)	1
			California needlegrass (ACOCC)	1
			California buckthorn (FRCAT2)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
924:				
Powderhouse-----	White fir (ABCO)	46	White fir (ABCO)	8
	California red fir (ABMA)	19	Huckleberry oak (QUVA)	5
	Incense cedar (CADE27)	18	California red fir (ABMA)	4
	Sugar pine (PILA)	6	Greenleaf manzanita	3
	Ponderosa pine (PIPO)	4	(ARPA6)	
	Douglas-fir (PSME)	4	Whitethorn ceanothus	3
	California black oak	3	(CECO)	
	(QUKE)		Incense cedar (CADE27)	3
			Sierra chinquapin	3
			(CHSE11)	
			Common snowberry (SYAL)	2
			Pipsissewa (CHUM)	1
			Pinemat manzanita (ARNE)	1
			Sugar pine (PILA)	1
			Sierra gooseberry (RIRO)	1
			California black oak	1
			(QUKE)	
			Prostrate ceanothus	1
			(CEPR)	
			California buckthorn	1
			(FRCAT2)	
			Whitevein shinleaf	1
			(PYPI2)	
			Sierra currant (RINE)	1
			Starry false Solomons	1
			seal (MAST4)	
			Bitter cherry (PREM)	1
McNair-----	White fir (ABCO)	50	White fir (ABCO)	15
	Sugar pine (PILA)	13	Whitethorn ceanothus	6
	California red fir (ABMA)	10	(CECO)	
	Ponderosa pine (PIPO)	10	Greenleaf manzanita	6
	Incense cedar (CADE27)	8	(ARPA6)	
	California black oak	7	Sierra chinquapin	4
	(QUKE)		(CHSE11)	
	Jeffrey pine (PIJE)	2	Common snowberry (SYAL)	3
			California buckthorn	3
			(FRCAT2)	
			California red fir (ABMA)	3
			Incense cedar (CADE27)	2
			Bitterbrush (PURSH)	2
			California hazel (COCOC)	2
			California black oak	2
			(QUKE)	
			Starry false Solomons	2
			seal (MAST4)	
			Sugar pine (PILA)	2
			Huckleberry oak (QUVA)	2
			Western brackenfern	2
			(PTAQ)	
			Sierra gooseberry (RIRO)	1
			Pipsissewa (CHUM)	1
			Sierra currant (RINE)	1
			Whitevein shinleaf	1
			(PYPI2)	

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
924:				
Greenwell-----	White fir (ABCO)	48	White fir (ABCO)	10
	Sugar pine (PILA)	14	Incense cedar (CADE27)	7
	Ponderosa pine (PIPO)	11	Huckleberry oak (QUVA)	6
	California red fir (ABMA)	10	Sierra chinquapin (CHSE11)	5
	Incense cedar (CADE27)	10	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	5	Sierra gooseberry (RIRO)	2
	Jeffrey pine (PIJE)	2	California black oak (QUKE)	2
			Greenleaf manzanita (ARPA6)	2
			Pipsissewa (CHUM)	1
			Starry false Solomons seal (MAST4)	1
			Sugar pine (PILA)	1
			Common snowberry (SYAL)	1
			Western brackenfern (PTAQ)	1
			California red fir (ABMA)	1
			California needlegrass (ACOCC)	1
			California buckthorn (FRCAT2)	1
925:				
Powderhouse-----	White fir (ABCO)	46	White fir (ABCO)	8
	California red fir (ABMA)	19	Huckleberry oak (QUVA)	5
	Incense cedar (CADE27)	18	California red fir (ABMA)	4
	Sugar pine (PILA)	6	Greenleaf manzanita (ARPA6)	3
	Ponderosa pine (PIPO)	4	Whitethorn ceanothus (CECO)	3
	Douglas-fir (PSME)	4	Incense cedar (CADE27)	3
	California black oak (QUKE)	3	Sierra chinquapin (CHSE11)	3
			Common snowberry (SYAL)	2
			Pipsissewa (CHUM)	1
			Pinemat manzanita (ARNE)	1
			Sugar pine (PILA)	1
			Sierra gooseberry (RIRO)	1
			California black oak (QUKE)	1
			Prostrate ceanothus (CEPR)	1
			California buckthorn (FRCAT2)	1
			Whitevein shinleaf (PYPI2)	1
			Sierra currant (RINE)	1
			Starry false Solomons seal (MAST4)	1
			Bitter cherry (PREM)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
925:				
McNair-----	White fir (ABCO)	50	White fir (ABCO)	15
	Sugar pine (PILA)	13	Whitethorn ceanothus (CECO)	6
	California red fir (ABMA)	10	Greenleaf manzanita (ARPA6)	6
	Ponderosa pine (PIPO)	10	Sierra chinquapin (CHSE11)	4
	Incense cedar (CADE27)	8	Common snowberry (SYAL)	3
	California black oak (QUKE)	7	California buckthorn (FRCAT2)	3
	Jeffrey pine (PIJE)	2	California red fir (ABMA)	3
			Incense cedar (CADE27)	2
			Bitterbrush (PURSH)	2
			California hazel (COCOC)	2
			California black oak (QUKE)	2
			Starry false Solomons seal (MAST4)	2
			Sugar pine (PILA)	2
			Huckleberry oak (QUVA)	2
			Western brackenfern (PTAQ)	2
			Sierra gooseberry (RIRO)	1
			Pipsissewa (CHUM)	1
			Sierra currant (RINE)	1
			Whitevein shinleaf (PYPI2)	1
Greenwell-----	White fir (ABCO)	48	White fir (ABCO)	10
	Sugar pine (PILA)	14	Incense cedar (CADE27)	7
	Ponderosa pine (PIPO)	11	Huckleberry oak (QUVA)	6
	California red fir (ABMA)	10	Sierra chinquapin (CHSE11)	5
	Incense cedar (CADE27)	10	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	5	Sierra gooseberry (RIRO)	2
	Jeffrey pine (PIJE)	2	California black oak (QUKE)	2
			Greenleaf manzanita (ARPA6)	2
			Pipsissewa (CHUM)	1
			Starry false Solomons seal (MAST4)	1
			Sugar pine (PILA)	1
			Common snowberry (SYAL)	1
			Western brackenfern (PTAQ)	1
			California red fir (ABMA)	1
			California needlegrass (ACOCC)	1
			California buckthorn (FRCAT2)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
930: Shakeridge-----	White fir (ABCO)	40	White fir (ABCO)	15
	Sugar pine (PILA)	35	Bigleaf maple (ACMA3)	15
	Incense cedar (CADE27)	15	Incense cedar (CADE27)	15
	Ponderosa pine (PIPO)	10	Dogwood (CORNU)	15
			Deerbrush (CEIN3)	5
			California hazel (COCOC)	5
			Sierra gooseberry (RIRO)	5
			California needlegrass (ACOCC)	1
			Sugar pine (PILA)	1
			Whitevein shinleaf (PYPI2)	1
			Western brackenfern (PTAQ)	1
			Common snowberry (SYAL)	1
			Douglas-fir (PSME)	---
			Ponderosa pine (PIPO)	---
			California black oak (QUKE)	---
Timberisland----	Ponderosa pine (PIPO)	28	White fir (ABCO)	10
	Incense cedar (CADE27)	27	Deerbrush (CEIN3)	10
	California black oak (QUKE)	13	Incense cedar (CADE27)	8
	White fir (ABCO)	12	Pacific madrone (ARME)	7
	Sugar pine (PILA)	10	California black oak (QUKE)	7
	Douglas-fir (PSME)	7	Tanoak (LIDE3)	5
	Pacific madrone (ARME)	2	Huckleberry oak (QUVA)	5
	Canyon live oak (QUCH2)	1	Ponderosa pine (PIPO)	2
			Sugar pine (PILA)	2
			Greenleaf manzanita (ARPA6)	2
			Whitethorn ceanothus (CECO)	2
			Lupine (LUPIN)	2
			Western brackenfern (PTAQ)	2
			Common snowberry (SYAL)	2
			Douglas-fir (PSME)	1
			Sierra gooseberry (RIRO)	1
931: Shakeridge-----	White fir (ABCO)	40	White fir (ABCO)	15
	Sugar pine (PILA)	35	Bigleaf maple (ACMA3)	15
	Incense cedar (CADE27)	15	Incense cedar (CADE27)	15
	Ponderosa pine (PIPO)	10	Dogwood (CORNU)	15
			Deerbrush (CEIN3)	5
			California hazel (COCOC)	5
			Sierra gooseberry (RIRO)	5
			California needlegrass (ACOCC)	1
			Sugar pine (PILA)	1
			Whitevein shinleaf (PYPI2)	1
			Western brackenfern (PTAQ)	1
			Common snowberry (SYAL)	1
			Douglas-fir (PSME)	---
			Ponderosa pine (PIPO)	---
			California black oak (QUKE)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
931:				
Mudwash-----	White fir (ABCO)	29	White fir (ABCO)	13
	Incense cedar (CADE27)	22	Incense cedar (CADE27)	12
	Ponderosa pine (PIPO)	22	Whitethorn ceanothus	5
	Sugar pine (PILA)	11	(CECO)	
	Douglas-fir (PSME)	7	Tanoak (LIDE3)	4
	California black oak	7	Common snowberry (SYAL)	4
	(QUKE)		Deerbrush (CEIN3)	3
	Jeffrey pine (PIJE)	1	Sierra gooseberry (RIRO)	3
	Pacific madrone (ARME)	1	Ponderosa pine (PIPO)	3
			California black oak	2
			(QUKE)	
			Sugar pine (PILA)	2
			Greenleaf manzanita	2
			(ARPA6)	
			Whiteleaf manzanita	2
			(ARMA)	
			Douglas-fir (PSME)	1
			Whitevein shinleaf	1
			(PYPI2)	
			Pipsissewa (CHUM)	1
Timberisland----	Ponderosa pine (PIPO)	28	White fir (ABCO)	10
	Incense cedar (CADE27)	27	Deerbrush (CEIN3)	10
	California black oak	13	Incense cedar (CADE27)	8
	(QUKE)		Pacific madrone (ARME)	7
	White fir (ABCO)	12	California black oak	7
	Sugar pine (PILA)	10	(QUKE)	
	Douglas-fir (PSME)	7	Tanoak (LIDE3)	5
	Pacific madrone (ARME)	2	Huckleberry oak (QUVA)	5
	Canyon live oak (QUCH2)	1	Ponderosa pine (PIPO)	2
			Sugar pine (PILA)	2
			Greenleaf manzanita	2
			(ARPA6)	
			Whitethorn ceanothus	2
			(CECO)	
			Lupine (LUPIN)	2
			Western brackenfern	2
			(PTAQ)	
			Common snowberry (SYAL)	2
			Douglas-fir (PSME)	1
			Sierra gooseberry (RIRO)	1
932:				
Shakeridge-----	White fir (ABCO)	40	White fir (ABCO)	15
	Sugar pine (PILA)	35	Bigleaf maple (ACMA3)	15
	Incense cedar (CADE27)	15	Incense cedar (CADE27)	15
	Ponderosa pine (PIPO)	10	Dogwood (CORNU)	15
			Deerbrush (CEIN3)	5
			California hazel (COCOC)	5
			Sierra gooseberry (RIRO)	5
			California needlegrass	1
			(ACOCC)	
			Sugar pine (PILA)	1
			Whitevein shinleaf	1
			(PYPI2)	
			Western brackenfern	1
			(PTAQ)	
			Common snowberry (SYAL)	1
			Douglas-fir (PSME)	---
			Ponderosa pine (PIPO)	---
			California black oak	---
			(QUKE)	

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
932: Mudwash-----	White fir (ABCO)	29	White fir (ABCO)	13
	Incense cedar (CADE27)	22	Incense cedar (CADE27)	12
	Ponderosa pine (PIPO)	22	Whitethorn ceanothus	5
	Sugar pine (PILA)	11	(CECO)	
	Douglas-fir (PSME)	7	Tanoak (LIDE3)	4
	California black oak (QUKE)	7	Common snowberry (SYAL)	4
	Jeffrey pine (PIJE)	1	Deerbrush (CEIN3)	3
	Pacific madrone (ARME)	1	Sierra gooseberry (RIRO)	3
			Ponderosa pine (PIPO)	3
			California black oak (QUKE)	2
			Sugar pine (PILA)	2
			Greenleaf manzanita (ARPA6)	2
			Whiteleaf manzanita (ARMA)	2
			Douglas-fir (PSME)	1
			Whitevein shinleaf (PYPI2)	1
			Pipsissewa (CHUM)	1
933: Shakeridge-----	White fir (ABCO)	40	White fir (ABCO)	15
	Sugar pine (PILA)	35	Bigleaf maple (ACMA3)	15
	Incense cedar (CADE27)	15	Incense cedar (CADE27)	15
	Ponderosa pine (PIPO)	10	Dogwood (CORNU)	15
			Deerbrush (CEIN3)	5
			California hazel (COCOC)	5
			Sierra gooseberry (RIRO)	5
			California needlegrass (ACOCC)	1
			Sugar pine (PILA)	1
			Whitevein shinleaf (PYPI2)	1
			Western brackenfern (PTAQ)	1
			Common snowberry (SYAL)	1
			Douglas-fir (PSME)	---
			Ponderosa pine (PIPO)	---
			California black oak (QUKE)	---
934: Mudwash-----	White fir (ABCO)	29	White fir (ABCO)	13
	Incense cedar (CADE27)	22	Incense cedar (CADE27)	12
	Ponderosa pine (PIPO)	22	Whitethorn ceanothus	5
	Sugar pine (PILA)	11	(CECO)	
	Douglas-fir (PSME)	7	Tanoak (LIDE3)	4
	California black oak (QUKE)	7	Common snowberry (SYAL)	4
	Jeffrey pine (PIJE)	1	Deerbrush (CEIN3)	3
	Pacific madrone (ARME)	1	Sierra gooseberry (RIRO)	3
			Ponderosa pine (PIPO)	3
			California black oak (QUKE)	2
			Sugar pine (PILA)	2
			Greenleaf manzanita (ARPA6)	2
			Whiteleaf manzanita (ARMA)	2
			Douglas-fir (PSME)	1
			Whitevein shinleaf (PYPI2)	1
			Pipsissewa (CHUM)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
939: Fluvaquentic Humaquepts-----	---	---	California false hellebore (VECAC2) Rush (JUNCU) Violet (VIOLA) Arnica (ARNIC) Mountain alder (ALVIC) Carex (CAREX)	--- --- --- --- ---
940: Dejonah-----	White fir (ABCO) California red fir (ABMA) Sugar pine (PILA) Incense cedar (CADE27) Jeffrey pine (PIJE) Ponderosa pine (PIPO) Douglas-fir (PSME) Lodgepole pine (PICO) California black oak (QUKE)	45 28 15 4 2 2 2 1 1	Sierra chinquapin (CHSE11) White fir (ABCO) Greenleaf manzanita (ARPA6) Western brackenfern (PTAQ) California red fir (ABMA) Whitethorn ceanothus (CECO) Pinemat manzanita (ARNE) Incense cedar (CADE27) Sierra gooseberry (RIRO) Pipsissewa (CHUM) Common snowberry (SYAL) Huckleberry oak (QUVA) Pacific dogwood (CONU4) Wavyleaf Indian paintbrush (CAAP4) California black oak (QUKE) Sugar pine (PILA) Bitter cherry (PREM)	10 8 7 5 4 3 2 2 2 1 1 1 1 1 1 1 1 1
Stagpoint-----	White fir (ABCO) Sugar pine (PILA) California red fir (ABMA) Incense cedar (CADE27) Ponderosa pine (PIPO) California black oak (QUKE) Jeffrey pine (PIJE) Douglas-fir (PSME)	41 18 14 12 7 6 1 1	White fir (ABCO) Whitethorn ceanothus (CECO) Sierra chinquapin (CHSE11) Incense cedar (CADE27) Deerbrush (CEIN3) California red fir (ABMA) California black oak (QUKE) Greenleaf manzanita (ARPA6) Sierra gooseberry (RIRO) Huckleberry oak (QUVA) Western brackenfern (PTAQ) Bitter cherry (PREM) Common snowberry (SYAL) California needlegrass (ACOCC) Sugar pine (PILA) Pinemat manzanita (ARNE) Pipsissewa (CHUM) Pacific dogwood (CONU4) Whitevein shinleaf (PYPI2)	11 8 8 5 4 3 2 2 2 2 1 1 1 1 1 1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
941: Dejonah-----	White fir (ABCO)	45	Sierra chinquapin (CHSE11)	10
	California red fir (ABMA)	28	White fir (ABCO)	8
	Sugar pine (PILA)	15	Greenleaf manzanita (ARPA6)	7
	Incense cedar (CADE27)	4	Western brackenfern (PTAQ)	5
	Jeffrey pine (PIJE)	2	California red fir (ABMA)	4
	Ponderosa pine (PIPO)	2	Whitethorn ceanothus (CECO)	3
	Douglas-fir (PSME)	2	Pinemat manzanita (ARNE)	2
	Lodgepole pine (PICO)	1	Incense cedar (CADE27)	2
	California black oak (QUKE)	1	Sierra gooseberry (RIRO)	2
			Pipsissewa (CHUM)	1
			Common snowberry (SYAL)	1
			Huckleberry oak (QUVA)	1
			Pacific dogwood (CONU4)	1
			Wavyleaf Indian paintbrush (CAAP4)	1
			California black oak (QUKE)	1
			Sugar pine (PILA)	1
			Bitter cherry (PREM)	1
Stagpoint-----	White fir (ABCO)	41	White fir (ABCO)	11
	Sugar pine (PILA)	18	Whitethorn ceanothus (CECO)	8
	California red fir (ABMA)	14	Sierra chinquapin (CHSE11)	8
	Incense cedar (CADE27)	12	Incense cedar (CADE27)	8
	Ponderosa pine (PIPO)	7	Deerbrush (CEIN3)	5
	California black oak (QUKE)	6	California red fir (ABMA)	4
	Jeffrey pine (PIJE)	1	California black oak (QUKE)	3
	Douglas-fir (PSME)	1	Greenleaf manzanita (ARPA6)	2
			Sierra gooseberry (RIRO)	2
			Huckleberry oak (QUVA)	2
			Western brackenfern (PTAQ)	2
			Bitter cherry (PREM)	1
			Common snowberry (SYAL)	1
			California needlegrass (ACOCC)	1
			Sugar pine (PILA)	1
			Pinemat manzanita (ARNE)	1
			Pipsissewa (CHUM)	1
			Pacific dogwood (CONU4)	1
			Whitevein shinleaf (PYPI2)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
942: Stagpoint-----	White fir (ABCO)	41	White fir (ABCO)	11
	Sugar pine (PILA)	18	Whitethorn ceanothus (CECO)	8
	California red fir (ABMA)	14	Sierra chinquapin (CHSE11)	8
	Incense cedar (CADE27)	12	Incense cedar (CADE27)	8
	Ponderosa pine (PIPO)	7	Deerbrush (CEIN3)	5
	California black oak (QUKE)	6	California red fir (ABMA)	4
	Jeffrey pine (PIJE)	1	California black oak (QUKE)	3
	Douglas-fir (PSME)	1	Greenleaf manzanita (ARPA6)	2
			Sierra gooseberry (RIRO)	2
			Huckleberry oak (QUVA)	2
			Western brackenfern (PTAQ)	2
			Bitter cherry (PREM)	1
			Common snowberry (SYAL)	1
			California needlegrass (ACOCC)	1
			Sugar pine (PILA)	1
			Pinemat manzanita (ARNE)	1
			Pipsissewa (CHUM)	1
			Pacific dogwood (CONU4)	1
			Whitevein shinleaf (PYPI2)	1
Dejonah-----	White fir (ABCO)	45	Sierra chinquapin (CHSE11)	10
	California red fir (ABMA)	28	White fir (ABCO)	8
	Sugar pine (PILA)	15	Greenleaf manzanita (ARPA6)	7
	Incense cedar (CADE27)	4	Western brackenfern (PTAQ)	5
	Jeffrey pine (PIJE)	2	California red fir (ABMA)	4
	Ponderosa pine (PIPO)	2	Whitethorn ceanothus (CECO)	3
	Douglas-fir (PSME)	2	Pinemat manzanita (ARNE)	2
	Lodgepole pine (PICO)	1	Incense cedar (CADE27)	2
	California black oak (QUKE)	1	Sierra gooseberry (RIRO)	2
			Pipsissewa (CHUM)	1
			Common snowberry (SYAL)	1
			Huckleberry oak (QUVA)	1
			Pacific dogwood (CONU4)	1
			Wavyleaf Indian paintbrush (CAAP4)	1
			California black oak (QUKE)	1
			Sugar pine (PILA)	1
			Bitter cherry (PREM)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
948:				
Stagpoint-----	White fir (ABCO)	41	White fir (ABCO)	11
	Sugar pine (PILA)	18	Whitethorn ceanothus (CECO)	8
	California red fir (ABMA)	14	Sierra chinquapin (CHSE11)	8
	Incense cedar (CADE27)	12	Incense cedar (CADE27)	8
	Ponderosa pine (PIPO)	7	Deerbrush (CEIN3)	5
	California black oak (QUKE)	6	California red fir (ABMA)	4
	Jeffrey pine (PIJE)	1	California black oak (QUKE)	3
	Douglas-fir (PSME)	1	Greenleaf manzanita (ARPA6)	2
			Sierra gooseberry (RIRO)	2
			Huckleberry oak (QUVA)	2
			Western brackenfern (PTAQ)	2
			Bitter cherry (PREM)	1
			Common snowberry (SYAL)	1
			California needlegrass (ACOCC)	1
			Sugar pine (PILA)	1
			Pinemat manzanita (ARNE)	1
			Pipsissewa (CHUM)	1
			Pacific dogwood (CONU4)	1
			Whitevein shinleaf (PYPI2)	1
Dejonah-----	White fir (ABCO)	45	Sierra chinquapin (CHSE11)	10
	California red fir (ABMA)	28	White fir (ABCO)	8
	Sugar pine (PILA)	15	Greenleaf manzanita (ARPA6)	7
	Incense cedar (CADE27)	4	Western brackenfern (PTAQ)	5
	Jeffrey pine (PIJE)	2	California red fir (ABMA)	4
	Ponderosa pine (PIPO)	2	Whitethorn ceanothus (CECO)	3
	Douglas-fir (PSME)	2	Pinemat manzanita (ARNE)	2
	Lodgepole pine (PICO)	1	Incense cedar (CADE27)	2
	California black oak (QUKE)	1	Sierra gooseberry (RIRO)	2
			Pipsissewa (CHUM)	1
			Common snowberry (SYAL)	1
			Huckleberry oak (QUVA)	1
			Pacific dogwood (CONU4)	1
			Wavyleaf Indian paintbrush (CAAP4)	1
			California black oak (QUKE)	1
			Sugar pine (PILA)	1
			Bitter cherry (PREM)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
949: Rogerville taxadjunct-----	White fir (ABCO)	27	White fir (ABCO)	10
	California red fir (ABMA)	20	Incense cedar (CADE27)	10
	Incense cedar (CADE27)	18	Whitethorn ceanothus (CECO)	10
	Douglas-fir (PSME)	12	California red fir (ABMA)	5
	Sugar pine (PILA)	10	Common snowberry (SYAL)	5
	Jeffrey pine (PIJE)	5	California needlegrass (ACOCC)	3
	Ponderosa pine (PIPO)	5	Pinemat manzanita (ARNE)	3
	California black oak (QUKE)	3	Sierra chinquapin (CHSE11)	3
			Western brackenfern (PTAQ)	3
			Sierra gooseberry (RIRO)	3
			Deerbrush (CEIN3)	3
			Douglas-fir (PSME)	3
			Huckleberry oak (QUVA)	3
			Rocky Mountain maple (ACGL)	1
			Orcutt brome (BROR2)	1
			Pipsissewa (CHUM)	1
			Pacific dogwood (CONU4)	1
			Bitter cherry (PREM)	1
			Whitevein shinleaf (PYPI2)	1
			California wildrose (ROCA2)	1
			Western thimbleberry (RUPA)	1
950: Lumpkin taxadjunct-----	Ponderosa pine (PIPO)	48	Whiteleaf manzanita (ARMA)	10
	Incense cedar (CADE27)	26	Greenleaf manzanita (ARPA6)	8
	California black oak (QUKE)	10	Incense cedar (CADE27)	5
	Sugar pine (PILA)	7	Ponderosa pine (PIPO)	4
	Canyon live oak (QUCH2)	7	White fir (ABCO)	2
	White fir (ABCO)	2	Canyon live oak (QUCH2)	2
			California needlegrass (ACOCC)	1
			Buckwheat (ERIOG)	1
			California black oak (QUKE)	1
			Common snowberry (SYAL)	1
Rock outcrop.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
950: Powderhouse-----	White fir (ABCO)	46	White fir (ABCO)	8
	California red fir (ABMA)	19	Huckleberry oak (QUVA)	5
	Incense cedar (CADE27)	18	California red fir (ABMA)	4
	Sugar pine (PILA)	6	Greenleaf manzanita (ARPA6)	3
	Ponderosa pine (PIPO)	4	Whitethorn ceanothus (CECO)	3
	Douglas-fir (PSME)	4	Incense cedar (CADE27)	3
	California black oak (QUKE)	3	Sierra chinquapin (CHSE11)	3
			Common snowberry (SYAL)	2
			Pipsissewa (CHUM)	1
			Pinemat manzanita (ARNE)	1
			Sugar pine (PILA)	1
			Sierra gooseberry (RIRO)	1
			California black oak (QUKE)	1
			Prostrate ceanothus (CEPR)	1
			California buckthorn (FRCAT2)	1
			Whitevein shinleaf (PYPI2)	1
			Sierra currant (RINE)	1
			Starry false Solomons seal (MAST4)	1
			Bitter cherry (PREM)	1
951: Lumpkin taxadjunct-----	Ponderosa pine (PIPO)	48	Whiteleaf manzanita (ARMA)	10
	Incense cedar (CADE27)	26	Greenleaf manzanita (ARPA6)	8
	California black oak (QUKE)	10	Incense cedar (CADE27)	5
	Sugar pine (PILA)	7	Ponderosa pine (PIPO)	4
	Canyon live oak (QUCH2)	7	White fir (ABCO)	2
	White fir (ABCO)	2	Canyon live oak (QUCH2)	2
			California needlegrass (ACOCC)	1
			Buckwheat (ERIOG)	1
			California black oak (QUKE)	1
			Common snowberry (SYAL)	1
Rock outcrop.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
951: Powderhouse-----	White fir (ABCO)	46	White fir (ABCO)	8
	California red fir (ABMA)	19	Huckleberry oak (QUVA)	5
	Incense cedar (CADE27)	18	California red fir (ABMA)	4
	Sugar pine (PILA)	6	Greenleaf manzanita	3
	Ponderosa pine (PIPO)	4	(ARPA6)	
	Douglas-fir (PSME)	4	Whitethorn ceanothus	3
	California black oak	3	(CECO)	
	(QUKE)		Incense cedar (CADE27)	3
			Sierra chinquapin	3
			(CHSE11)	
			Common snowberry (SYAL)	2
			Pipsissewa (CHUM)	1
			Pinemat manzanita (ARNE)	1
			Sugar pine (PILA)	1
			Sierra gooseberry (RIRO)	1
			California black oak	1
			(QUKE)	
			Prostrate ceanothus	1
			(CEPR)	
			California buckthorn	1
			(FRCAT2)	
			Whitevein shinleaf	1
			(PYPI2)	
			Sierra currant (RINE)	1
			Starry false Solomons	1
			seal (MAST4)	
			Bitter cherry (PREM)	1
960: Surnuf-----	Ponderosa pine (PIPO)	21	Tanoak (LIDE3)	13
	Douglas-fir (PSME)	20	White fir (ABCO)	8
	Incense cedar (CADE27)	17	Incense cedar (CADE27)	7
	Tanoak (LIDE3)	13	Douglas-fir (PSME)	6
	Sugar pine (PILA)	9	Mountain misery (CHFO)	5
	Pacific madrone (ARME)	7	Deerbrush (CEIN3)	3
	White fir (ABCO)	7	California black oak	3
	California black oak	6	(QUKE)	
	(QUKE)		Pacific madrone (ARME)	3
			Common snowberry (SYAL)	2
			Whiteleaf manzanita	2
			(ARMA)	
			Pacific dogwood (CONU4)	2
			Orcutt brome (BROR2)	2
			California needlegrass	2
			(ACOCC)	
			Ponderosa pine (PIPO)	1
			California blackberry	1
			(RUUR)	
			Broadleaf starflower	1
			(TRBOL)	
			Western brackenfern	1
			(PTAQ)	
			Sierra gooseberry (RIRO)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
961: Surnuf-----	Ponderosa pine (PIPO)	21	Tanoak (LIDE3)	13
	Douglas-fir (PSME)	20	White fir (ABCO)	8
	Incense cedar (CADE27)	17	Incense cedar (CADE27)	7
	Tanoak (LIDE3)	13	Douglas-fir (PSME)	6
	Sugar pine (PILA)	9	Mountain misery (CHFO)	5
	Pacific madrone (ARME)	7	Deerbrush (CEIN3)	3
	White fir (ABCO)	7	California black oak	3
	California black oak (QUKE)	6	(QUKE)	
			Pacific madrone (ARME)	3
			Common snowberry (SYAL)	2
			Whiteleaf manzanita (ARMA)	2
			Pacific dogwood (CONU4)	2
			Orcutt brome (BROR2)	2
			California needlegrass (ACOCC)	2
			Ponderosa pine (PIPO)	1
			California blackberry (RUUR)	1
			Broadleaf starflower (TRBOL)	1
			Western brackenfern (PTAQ)	1
			Sierra gooseberry (RIRO)	1
962: Surnuf-----	Ponderosa pine (PIPO)	21	Tanoak (LIDE3)	13
	Douglas-fir (PSME)	20	White fir (ABCO)	8
	Incense cedar (CADE27)	17	Incense cedar (CADE27)	7
	Tanoak (LIDE3)	13	Douglas-fir (PSME)	6
	Sugar pine (PILA)	9	Mountain misery (CHFO)	5
	Pacific madrone (ARME)	7	Deerbrush (CEIN3)	3
	White fir (ABCO)	7	California black oak	3
	California black oak (QUKE)	6	(QUKE)	
			Pacific madrone (ARME)	3
			Common snowberry (SYAL)	2
			Whiteleaf manzanita (ARMA)	2
			Pacific dogwood (CONU4)	2
			Orcutt brome (BROR2)	2
			California needlegrass (ACOCC)	2
			Ponderosa pine (PIPO)	1
			California blackberry (RUUR)	1
			Broadleaf starflower (TRBOL)	1
			Western brackenfern (PTAQ)	1
			Sierra gooseberry (RIRO)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
963: Surnuf-----	Ponderosa pine (PIPO)	21	Tanoak (LIDE3)	13
	Douglas-fir (PSME)	20	White fir (ABCO)	8
	Incense cedar (CADE27)	17	Incense cedar (CADE27)	7
	Tanoak (LIDE3)	13	Douglas-fir (PSME)	6
	Sugar pine (PILA)	9	Mountain misery (CHFO)	5
	Pacific madrone (ARME)	7	Deerbrush (CEIN3)	3
	White fir (ABCO)	7	California black oak	3
	California black oak (QUKE)	6	(QUKE)	
			Pacific madrone (ARME)	3
			Common snowberry (SYAL)	2
			Whiteleaf manzanita (ARMA)	2
			Pacific dogwood (CONU4)	2
			Orcutt brome (BROR2)	2
			California needlegrass (ACOCC)	2
			Ponderosa pine (PIPO)	1
			California blackberry (RUUR)	1
			Broadleaf starflower (TRBOL)	1
			Western brackenfern (PTAQ)	1
			Sierra gooseberry (RIRO)	1
990: Riverwash-----	---	---	Douglas sagewort (ARDO3)	---
			Fremont cottonwood (POFR2)	---
			Coyote willow (SAEX)	---
991: Xerofluvents----	California sycamore (PLRA)	---	White alder (ALRH2)	---
	Fremont cottonwood (POFR2)	---	California sycamore (PLRA)	---
	Foothill pine (PISA2)	---	Willow (SALIX)	---
	Valley oak (QULO)	---	Fremont cottonwood (POFR2)	---
	White alder (ALRH2)	---	Pacific poison oak (TODI)	---
	Willow (SALIX)	---	Valley oak (QULO)	---
			Foothill pine (PISA2)	---
			California laurel (UMCA)	---
			California buckeye (AECA)	---
			California redbud (CEOR9)	---
			California wild grape (VICA5)	---
			Oregon ash (FRLA)	---
			Douglas sagewort (ARDO3)	---
			Scotch broom (CYSC4)	---
			Yellow starthistle (CESO3)	---
			Vetch (VICIA)	---
995. Pits, gravel				
996. Dumps, excavated material				
997. Pits				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
998. Dumps, landfill				
999. Water				
DAM. Dam, manmade				

Table 13.--Index of Common and Scientific Plant Names and Plant Symbols

(This table aids in correct plant identification and serves as a cross-reference to plant species listed in table 12. The plant synonymy as reported in the USDA-NRCS National Plants Database at the time of publication is used)

Local common name	Scientific name	Plant symbol
Alameda County thistle	<i>Cirsium quercetorum</i>	CIQU2
alpine timothy	<i>Phleum alpinum</i>	PHAL2
annual lupine	<i>Lupinus bicolor</i>	LUBI
Arizona cypress	<i>Cupressus arizonica</i>	CUAR
arnica	<i>Arnica</i> spp.	ARNIC
arroyo willow	<i>Salix lasiolepis</i>	SALA6
athel	<i>Tamarix articulata</i>	TAAR3
Bailey acacia	<i>Acacia baileyana</i>	ACBA
baldcypress	<i>Taxodium distichum</i>	TADI2
barbed goatgrass	<i>Aegilops triuncialis</i>	AETR
beardless wildrye	<i>Leymus triticoides</i>	LETR5
beggartick (sticktight)	<i>Bidens frondosa</i>	BIFR
bermudagrass	<i>Cynodon dactylon</i>	CYDA
big saltbush	<i>Atriplex lentiformis</i>	ATLE
bigleaf maple	<i>Acer macrophyllum</i>	ACMA3
bitter cherry	<i>Prunus emarginata</i>	PREM
bitterbrush	<i>Purshia</i> spp.	PURSH
black walnut	<i>Juglans nigra</i>	JUNI
blackberry	<i>Rubus</i> spp.	RUBUS
blue elderberry	<i>Sambucus nigra</i> ssp. <i>cerulea</i>	SANIC5
blue oak	<i>Quercus douglasii</i>	QUDO
blue wildrye	<i>Elymus glaucus</i>	ELGL
bluedicks	<i>Dichelostemma capitatum</i> ssp. <i>capitatum</i>	DICAC5
bluegrass	<i>Poa</i> spp.	POA
bluestars	<i>Brodiaea minor</i>	BRMI3
bottlebrush squirreltail	<i>Elymus elymoides</i>	ELEL5
broadleaf starflower	<i>Trientalis borealis</i> ssp. <i>latifolia</i>	TRBOL
brodiaea	<i>Brodiaea</i> spp.	BRODI
brome	<i>Bromus</i> spp.	BROMU
buckbrush	<i>Ceanothus cuneatus</i>	CECU
buckwheat	<i>Eriogonum</i> spp.	ERIOG
bulrush	<i>Scirpus</i> spp.	SCIRP
burclover	<i>Medicago hispida</i>	MEHI
butter-n-eggs	<i>Triphysaria eriantha</i> ssp. <i>eriantha</i>	TRERE2
buttercup	<i>Ranunculus</i> spp.	RANUN
calicoflower	<i>Downingia</i> spp.	DOWNI
California black oak	<i>Quercus kelloggii</i>	QUKE
California blackberry	<i>Rubus ursinus</i>	RUUR
California buckeye	<i>Aesculus californica</i>	AECA
California buckthorn	<i>Frangula californica</i> ssp. <i>californica</i>	FRCAC5
California buckthorn	<i>Frangula californica</i> ssp. <i>tomentella</i>	FRCAT2
California false hellebore	<i>Veratrum californicum</i> var. <i>californicum</i>	VECAC2
California hazel	<i>Corylus cornuta</i> var. <i>californica</i>	COCOC
California honeysuckle	<i>Lonicera hispidula</i>	LOHI2
California laurel	<i>Umbellularia californica</i>	UMCA
California needlegrass	<i>Achnatherum occidentale</i> ssp. <i>californicum</i>	ACOCC
California red fir	<i>Abies magnifica</i>	ABMA
California redbud	<i>Cercis orbiculata</i>	CEOR9
California scrub oak	<i>Quercus dumosa</i>	QUDU
California sycamore	<i>Platanus racemosa</i>	PLRA
California torreyia	<i>Torreya californica</i>	TOCA
California walnut	<i>Juglans californica</i>	JUCA
California wild grape	<i>Vitis californica</i>	VICA5
California wildrose	<i>Rosa californica</i>	ROCA2
canyon live oak	<i>Quercus chrysolepis</i>	QUCH2
carex	<i>Carex</i> spp.	CAREX
cattail	<i>Typha</i> spp.	TYPHA
chamise	<i>Adenostoma fasciculatum</i>	ADFA

Table 13.--Index of Common and Scientific Plant Names and Plant Symbols--Continued

Local common name	Scientific name	Plant symbol
chapparral coffeeberry	Frangula californica	FRCA12
cheatgrass	Bromus tectorum	BRTE
checkerbloom	Sidalcea spp.	SIDAL
Chinese pistache	Pistacia chinensis	PICH4
chokeberry	Photinia spp.	PHOTI
clover	Trifolium spp.	TRIFO
club moss	Lycopodium cernuum	LYCE
cocklebur	Xanthium ssp.	XANTH2
columbine	Aquilegia spp.	AQUIL
common buttonbush	Cephalanthus occidentalis	CEOC2
common snowberry	Symphoricarpos albus	SYAL
common yarrow	Achillea millefolium	ACMI2
cottonwood	Populus spp.	POPUL
cowbag clover	Trifolium depauperatum	TRDE
coyote thistle	Eryngium castrense	ERCA33
coyote willow	Salix exigua	SAEX
coyotebrush	Baccharis pilularis	BAPI
creeping sage	Salvia sonomensis	SASO
curly dock	Rumex crispus	RUCR
dallisgrass	Paspalum dilatatum	PADI3
dandelion	Taraxacum spp.	TARAX
deerbrush	Ceanothus integerrimus	CEIN3
deerglass	Muhlenbergia rigens	MURI2
dogwood	Cornus spp.	CORNU
Douglas sagewort	Artemisia douglasiana	ARDO3
Douglas-fir	Pseudotsuga menziesii	PSME
eucalyptus	Eucalyptus spp.	EUCAL
fescue	Festuca spp.	FESTU
fiddleneck	Amsinckia spp.	AMSIN
filaree	Erodium spp.	ERODI
Fitch's spikeweed	Hemizonia fitchii	HEFI
flatspine stickweed	Lappula occidentalis var. occidentalis	LAOCO
foothill pine	Pinus sabiniana	PISA2
forsythia	Forsythia spp.	FORSY
fourwing saltbush	Atriplex canescens	ATCA2
foxtail fescue	Festuca megalura	FEME
Fremont cottonwood	Populus fremontii	POFR2
Fremont's deathcamas	Zigadenus fremontii	ZIFR
Fremont's tidytips	Layia fremontii	LAFR2
golden willow	Salix alba var. vitellina	SAALV
goldfields	Lasthenia spp.	LASTH
greenleaf manzanita	Arctostaphylos patula	ARPA6
hackberry	Celtis occidentalis	CEOC
hairgrass	Deschampsia	DESCH
hairypink	Petrorhagia dubia	PEDU2
Hansen's spikemoss	Selaginella hansenii	SEHA2
hardstem tule	Scirpus acutus var. occidentalis	SCACO4
hayfield tarweed	Hemizonia congesta ssp. luzulifolia	HECOL3
hedgheg dogtail	Cynosurus echinatus	CYEC
Himalaya blackberry	Rubus discolor	RUDI2
hollyleaf cherry	Prunus ilicifolia	PRIL
huckleberry oak	Quercus vacciniifolia	QUVA
incense cedar	Calocedrus decurrens	CADE27
interior live oak	Quercus wislizeni	QUWI2
iris	Iris spp.	IRIS
Italian ryegrass	Lolium perenne ssp. multiflorum	LOPEM2
Jeffrey pine	Pinus jeffreyi	PIJE
Jepson ceanothus	Ceanothus jepsonii	CEJE
Johnsongrass	Sorghum halepense	SOHA
junegrass	Koeleria macrantha	KOMA
larkspur	Delphinium spp.	DELPH
leather oak	Quercus durata	QUDU4
Lemmon ceanothus	Ceanothus lemmonii	CELE

Table 13.--Index of Common and Scientific Plant Names and Plant Symbols--Continued

Local common name	Scientific name	Plant symbol
lodgepole pine	<i>Pinus contorta</i>	PICO
lupine	<i>Lupinus</i> spp.	LUPIN
manzanita	<i>Arctostaphylos</i> spp.	ARCTO3
mariposa lily	<i>Calochortus</i> spp.	CALOC
meadow barley	<i>Hordeum brachyantherum</i>	HOBR2
meadowfoam	<i>Limnanthes</i> spp.	LIMNA
Mediterranean barley	<i>Hordeum murinum</i> ssp. <i>leporinum</i>	HOMUL
medusahead	<i>Taeniatherum caput-medusae</i>	TACA8
miners lettuce	<i>Claytonia perfoliata</i>	CLPE
mint	<i>Mentha</i> spp.	MENTH
monkeyflower	<i>Mimulus</i> spp.	MIMUL
mountain alder	<i>Alnus viridis</i> ssp. <i>crispa</i>	ALVIC
mountain brome	<i>Bromus marginatus</i>	BRMA4
mountain misery	<i>Chamaebatia foliolosa</i>	CHFO
mouse barley	<i>Hordeum marinum</i> ssp. <i>gussonianum</i>	HOMAG
mulberry	<i>Morus</i> spp.	MORUS
mullein	<i>Verbascum</i> spp.	VERBA
mustard	<i>Brassica</i> spp.	BRASS2
navarretia	<i>Navarretia</i> spp.	NAVAR
nitgrass	<i>Gastridium ventricosum</i>	GAVE3
oak	<i>Quercus</i> spp.	QUERC
oleander	<i>Nerium oleander</i>	NEOL
olive	<i>Olea europaea</i>	OLEU
orchardgrass	<i>Dactylis glomerata</i>	DAGL
Orcutt brome	<i>Bromus orcuttianus</i>	BROR2
Oregon ash	<i>Fraxinus latifolia</i>	FRLA
Pacific dogwood	<i>Cornus nuttallii</i>	CONU4
Pacific madrone	<i>Arbutus menziesii</i>	ARME
Pacific poison oak	<i>Toxicodendron diversilobum</i>	TODI
pepperweed	<i>Lepidium</i> spp.	LEPID
pinemat manzanita	<i>Arctostaphylos nevadensis</i>	ARNE
pink escallonia	<i>Escallonia laevis</i>	ESRU4
pipsissewa	<i>Chimaphila umbellata</i>	CHUM
plantain	<i>Plantago</i> spp.	PLANT
pomegranate	<i>Punica granatum</i>	PUGR2
ponderosa pine	<i>Pinus ponderosa</i>	PIPO
popcornflower	<i>Plagiobothrys</i>	PLAGI
prickly lettuce	<i>Lactuca serriola</i>	LASE
prostrate ceanothus	<i>Ceanothus prostratus</i>	CEPR
purple clarkia	<i>Clarkia purpurea</i>	CLPU2
purple needlegrass	<i>Nassella pulchra</i>	NAPU4
Pursh's buckthorn	<i>Frangula purshiana</i>	FRPU4
ragweed	<i>Ambrosia</i> spp.	AMBRO
rattlesnake brome	<i>Bromus briziformis</i>	BRBR5
red brome	<i>Bromus rubens</i>	BRRU2
red clover	<i>Trifolium pratense</i>	TRPR2
redbud	<i>Cercis</i> spp.	CERCI2
ripgut brome	<i>Bromus diandrus</i>	BRDI3
Rocky Mountain maple	<i>Acer glabrum</i>	ACGL
rose clover	<i>Trifolium hirtum</i>	TRHI4
rush	<i>Juncus</i> spp.	JUNCU
Russian olive	<i>Elaeagnus angustifolia</i>	ELAN
ryegrass	<i>Lolium</i> spp.	LOLIU
saltgrass	<i>Distichlis</i> ssp.	DISTI
Scotch broom	<i>Cytisus scoparius</i>	CYSC4
scrub oak	<i>Quercus berberidifolia</i>	QUBE5
shootingstar	<i>Dodecatheon</i> spp.	DODEC
shrub tanoak	<i>Lithocarpus densiflorus</i> var. <i>echinoides</i>	LIDEC
Sierra chinquapin	<i>Chrysolepis sempervirens</i>	CHSE11
Sierra coffeeberry	<i>Frangula rubra</i> ssp. <i>rubra</i>	FRRUR
Sierra currant	<i>Ribes nevadense</i>	RINE
Sierra gooseberry	<i>Ribes roezlii</i>	RIRO

Table 13.--Index of Common and Scientific Plant Names and Plant Symbols--Continued

Local common name	Scientific name	Plant symbol
Sierra mock stonecrop	<i>Sedella pumila</i>	SEPU4
silver hairgrass	<i>Aira caryophyllea</i>	AICA
soap plant	<i>Chlorogalum</i> spp.	CHLOR3
soft blow wives	<i>Achyrachaena mollis</i>	ACMO2
soft chess	<i>Bromus hordeaceus</i> ssp. <i>hordeaceus</i>	BRHOH
spikerush	<i>Eleocharis</i> spp.	ELEOC
squirreltail	<i>Elymus elymoides</i> ssp. <i>californicus</i>	ELLEC2
starry false Solomons seal	<i>Maianthemum stellatum</i>	MAST4
sticky whiteleaf manzanita	<i>Arctostaphylos viscida</i>	ARVI4
sugar pine	<i>Pinus lambertiana</i>	PLA
swampgrass	<i>Crypsis schoenoides</i>	CRSC
tall Oregon grape	<i>Mahonia aquifolium</i>	MAAQ2
tanoak	<i>Lithocarpus densiflorus</i>	LIDE3
tarweed	<i>Hemizonia</i> spp.	HEMIZ
thistle	<i>Cirsium</i> spp.	CIRSI
toyon	<i>Heteromeles arbutifolia</i>	HEAR5
valley oak	<i>Quercus lobata</i>	QULO
vetch	<i>Vicia</i> spp.	VICIA
vinegarweed	<i>Trichostema lanceolatum</i>	TRLA4
violet	<i>Viola</i> spp.	VIOLA
wavyleaf Indian paintbrush	<i>Castilleja applegatei</i>	CAAP4
wax currant	<i>Ribes cereum</i>	RICE
western brackenfern	<i>Pteridium aquilinum</i>	PTAQ
western princes pine	<i>Chimaphila umbellata</i> ssp. <i>occidentalis</i>	CHUMO2
western thimbleberry	<i>Rubus parviflorus</i>	RUPA
wheatgrass	<i>Agropyron</i> spp.	AGROP2
white alder	<i>Alnus rhombifolia</i>	ALRH2
white brodiaea	<i>Triteleia hyacinthina</i>	TRHY3
white fir	<i>Abies concolor</i>	ABCO
white meadowfoam	<i>Limnanthes alba</i> ssp. <i>alba</i>	LIALA
whiteleaf manzanita	<i>Arctostaphylos manzanita</i>	ARMA
whitethorn ceanothus	<i>Ceanothus cordulatus</i>	CECO
whitevein shinleaf	<i>Pyrola picta</i>	PYPI2
wild oat	<i>Avena fatua</i>	AVFA
wild onion	<i>Allium</i> spp.	ALLIU
wildrye	<i>Elymus</i> spp.	ELYMU
willow	<i>Salix</i> spp.	SALIX
woodland strawberry	<i>Fragaria vesca</i>	FRVE
wooly marbles	<i>Psilocarphus</i> spp.	PSILO
yellow carpet	<i>Blennosperma nanum</i> var. <i>nanum</i>	BLNAN
yellow salsify	<i>Tragopogon dubius</i>	TRDU
yellow starthistle	<i>Centaurea solstitialis</i>	CESO3
yerba santa	<i>Eriodictyon</i> spp.	ERIOD

Table 14.--Index of Plant Symbols and Common and Scientific Plant Names

(This table aids in correct plant identification and serves as a cross-reference to plant species listed in table 12. The plant synonymy as reported in the USDA-NRCS National Plants Database at the time of publication is used)

Plant symbol	Local common name	Scientific name
ABCO	white fir	<i>Abies concolor</i>
ABMA	California red fir	<i>Abies magnifica</i>
ACBA	Bailey acacia	<i>Acacia baileyana</i>
ACGL	Rocky Mountain maple	<i>Acer glabrum</i>
ACMA3	bigleaf maple	<i>Acer macrophyllum</i>
ACMI2	common yarrow	<i>Achillea millefolium</i>
ACMO2	soft blow wives	<i>Achyrachaena mollis</i>
ACOCC	California needlegrass	<i>Achnatherum occidentale</i> ssp. <i>californicum</i>
ADFA	chamise	<i>Adenostoma fasciculatum</i>
AECA	California buckeye	<i>Aesculus californica</i>
AETR	barbed goatgrass	<i>Aegilops triuncialis</i>
AGROP2	wheatgrass	<i>Agropyron</i> spp.
AICA	silver hairgrass	<i>Aira caryophyllea</i>
ALLIU	wild onion	<i>Allium</i> spp.
ALRH2	white alder	<i>Alnus rhombifolia</i>
ALVIC	mountain alder	<i>Alnus viridis</i> ssp. <i>crispa</i>
AMBRO	ragweed	<i>Ambrosia</i> spp.
AMSIN	fiddleneck	<i>Amsinckia</i> spp.
AQUIL	columbine	<i>Aquilegia</i> spp.
ARCTO3	manzanita	<i>Arctostaphylos</i> spp.
ARDO3	Douglas sagewort	<i>Artemisia douglasiana</i>
ARMA	whiteleaf manzanita	<i>Arctostaphylos manzanita</i>
ARME	Pacific madrone	<i>Arbutus menziesii</i>
ARNE	pinemat manzanita	<i>Arctostaphylos nevadensis</i>
ARNIC	arnica	<i>Arnica</i> spp.
ARPA6	greenleaf manzanita	<i>Arctostaphylos patula</i>
ARVI4	sticky whiteleaf manzanita	<i>Arctostaphylos viscida</i>
ATCA2	fourwing saltbush	<i>Atriplex canescens</i>
ATLE	big saltbush	<i>Atriplex lentiformis</i>
AVFA	wild oat	<i>Avena fatua</i>
BAPI	coyotebrush	<i>Baccharis pilularis</i>
BIFR	beggartick (sticktight)	<i>Bidens frondosa</i>
BLNAN	yellow carpet	<i>Blennosperma nanum</i> var. <i>nanum</i>
BRASS2	mustard	<i>Brassica</i> spp.
BRBR5	rattlesnake brome	<i>Bromus briziformis</i>
BRDI3	ripgut brome	<i>Bromus diandrus</i>
BRHOH	soft chess	<i>Bromus hordeaceus</i> ssp. <i>hordeaceus</i>
BRMA4	mountain brome	<i>Bromus marginatus</i>
BRMI3	bluestars	<i>Brodiaea minor</i>
BRODI	brodiaea	<i>Brodiaea</i> spp.
BROMU	brome	<i>Bromus</i> spp.
BROR2	Orcutt brome	<i>Bromus orcuttianus</i>
BRRU2	red brome	<i>Bromus rubens</i>
BRTE	cheatgrass	<i>Bromus tectorum</i>
CAAP4	wavyleaf Indian paintbrush	<i>Castilleja applegatei</i>
CADE27	incense cedar	<i>Calocedrus decurrens</i>
CALOC	mariposa lily	<i>Calochortus</i> spp.
CAREX	carex	<i>Carex</i> spp.
CECO	whitethorn ceanothus	<i>Ceanothus cordulatus</i>
CECU	buckbrush	<i>Ceanothus cuneatus</i>
CEIN3	deerbrush	<i>Ceanothus integerrimus</i>
CEJE	Jepson ceanothus	<i>Ceanothus jepsonii</i>
CELE	Lemmon ceanothus	<i>Ceanothus lemmonii</i>
CEOC	hackberry	<i>Celtis occidentalis</i>
CEOC2	common buttonbush	<i>Cephalanthus occidentalis</i>
CEOR9	California redbud	<i>Cercis orbiculata</i>
CEPR	prostrate ceanothus	<i>Ceanothus prostratus</i>
CERTI2	redbud	<i>Cercis</i> spp.
CES03	yellow starthistle	<i>Centaurea solstitialis</i>

Table 14.--Index of Plant Symbols and Common and Scientific Plant Names--Continued

Plant symbol	Local common name	Scientific name
CHFO	mountain misery	Chamaebatia foliolosa
CHLOR3	soap plant	Chlorogalum spp.
CHSE11	Sierra chinquapin	Chrysolepis sempervirens
CHUM	pipsissewa	Chimaphila umbellata
CHUMO2	western princes pine	Chimaphila umbellata ssp. occidentalis
CIQU2	Alameda County thistle	Cirsium quercetorum
CIRSI	thistle	Cirsium spp.
CLPE	miners lettuce	Claytonia perfoliata
CLPU2	purple clarkia	Clarkia purpurea
COCOC	California hazel	Corylus cornuta var. californica
CONU4	Pacific dogwood	Cornus nuttallii
CORNU	dogwood	Cornus spp.
CRSC	swampgrass	Crypsis schoenoides
CUAR	Arizona cypress	Cupressus arizonica
CYDA	bermudagrass	Cynodon dactylon
CYEC	hedgehog dogtail	Cynosurus echinatus
CYSC4	Scotch broom	Cytisus scoparius
DAGL	orchardgrass	Dactylis glomerata
DELPH	larkspur	Delphinium spp.
DESCH	hairgrass	Deschampsia
DICAC5	bluedicks	Dichelostemma capitatum ssp. capitatum
DISTI	saltgrass	Distichlis ssp.
DODEC	shootingstar	Dodecatheon spp.
DOWNI	calicoflower	Downingia spp.
ELAN	Russian olive	Elaeagnus angustifolia
ELEL5	bottlebrush squirreltail	Elymus elymoides
ELELC2	squirreltail	Elymus elymoides ssp. californicus
ELEOC	spikerush	Eleocharis spp.
ELGL	blue wildrye	Elymus glaucus
ELYMU	wildrye	Elymus spp.
ERCA33	coyote thistle	Eryngium castrense
ERIOD	yerba santa	Eriodictyon spp.
ERIOG	buckwheat	Eriogonum spp.
ERODI	filaree	Erodium spp.
ESRU4	pink escallonia	Escallonia laevis
EUCAL	eucalyptus	Eucalyptus spp.
FEME	foxtail fescue	Festuca megalura
FESTU	fescue	Festuca spp.
FORSY	forsythia	Forsythia spp.
FRCA12	chapparal coffeeberry	Frangula californica
FRCAC5	California buckthorn	Frangula californica ssp. californica
FRCAT2	California buckthorn	Frangula californica ssp. tomentella
FRLA	Oregon ash	Fraxinus latifolia
FRPU7	Pursh's buckthorn	Frangula purshiana
FRRUR	Sierra coffeeberry	Frangula rubra ssp. rubra
FRVE	woodland strawberry	Fragaria vesca
GAVE3	nitgrass	Gastridium ventricosum
HEAR5	toyon	Heteromeles arbutifolia
HECOL3	hayfield tarweed	Hemizonia congesta ssp. luzulifolia
HEFI	Fitch's spikeweed	Hemizonia fitchii
HEMIZ	tarweed	Hemizonia spp.
HOB2	meadow barley	Hordeum brachyantherum
HOMAG	mouse barley	Hordeum marinum ssp. gussonianum
HOMUL	Mediterranean barley	Hordeum murinum ssp. leporinum
IRIS	iris	Iris spp.
JUCA	California walnut	Juglans californica
JUNCU	rush	Juncus spp.
JUNI	black walnut	Juglans nigra
KOMA	junegrass	Koeleria macrantha
LAFR2	Fremont's tidytips	Layia fremontii
LAOCO	flatspine stickweed	Lappula occidentalis var. occidentalis
LASE	prickly lettuce	Lactuca serriola
LASTH	goldfields	Lasthenia spp.

Table 14.--Index of Plant Symbols and Common and Scientific Plant Names--Continued

Plant symbol	Local common name	Scientific name
LEPID	pepperweed	Lepidium spp.
LETR5	beardless wildrye	Leymus triticoides
LIALA	white meadowfoam	Limnanthes alba ssp. alba
LIDE3	tanoak	Lithocarpus densiflorus
LIDEE	shrub tanoak	Lithocarpus densiflorus var. echinoides
LIMNA	meadowfoam	Limnanthes spp.
LOHI2	California honeysuckle	Lonicera hispidula
LOLIU	ryegrass	Lolium spp.
LOPEM2	Italian ryegrass	Lolium perenne ssp. multiflorum
LUBI	annual lupine	Lupinus bicolor
LUPIN	lupine	Lupinus spp.
LYCE	club moss	Lycopodium cernuum
MAAQ2	tall Oregon grape	Mahonia aquifolium
MAST4	starry false Solomons seal	Maianthemum stellatum
MEHI	burclover	Medicago hispida
MENTH	mint	Mentha spp.
MIMUL	monkeyflower	Mimulus spp.
MORUS	mulberry	Morus spp.
MURI2	deerglass	Muhlenbergia rigens
NAPU4	purple needlegrass	Nassella pulchra
NAVAR	navarretia	Navarretia spp.
NEOL	oleander	Nerium oleander
OLEU	olive	Olea europaea
PADI3	dallisgrass	Paspalum dilatatum
PEDU2	hairypink	Petrohragia dubia
PHAL2	alpine timothy	Phleum alpinum
PHOTI	chokeberry	Photinia spp.
PICH4	Chinese pistache	Pistacia chinensis
PICO	lodgpole pine	Pinus contorta
PIJE	Jeffrey pine	Pinus jeffreyi
PILA	sugar pine	Pinus lambertiana
PIPO	ponderosa pine	Pinus ponderosa
PISA2	foothill pine	Pinus sabiniana
PLAGI	popcornflower	Plagiobothrys
PLANT	plantain	Plantago spp.
PLRA	California sycamore	Platanus racemosa
POA	bluegrass	Poa spp.
POFR2	Fremont cottonwood	Populus fremontii
POPUL	cottonwood	Populus spp.
PREM	bitter cherry	Prunus emarginata
PRIL	hollyleaf cherry	Prunus ilicifolia
PSILO	wooly marbles	Psilocarphus spp.
PSME	Douglas-fir	Pseudotsuga menziesii
PTAQ	western brackenfern	Pteridium aquilinum
PUGR2	pomegranate	Punica granatum
PURSH	bitterbrush	Purshia spp.
PYPI2	whitevein shinleaf	Pyrola picta
QUBE5	scrub oak	Quercus berberidifolia
QUCH2	canyon live oak	Quercus chrysolepis
QUDO	blue oak	Quercus douglasii
QUDU	California scrub oak	Quercus dumosa
QUDU4	leather oak	Quercus durata
QUERC	oak	Quercus spp.
QUKE	California black oak	Quercus kelloggii
QULO	valley oak	Quercus lobata
QUVA	huckleberry oak	Quercus vacciniifolia
QUWI2	interior live oak	Quercus wislizeni
RANUN	buttercup	Ranunculus spp.
RICE	wax currant	Ribes cereum
RINE	Sierra currant	Ribes nevadense
RIRO	Sierra gooseberry	Ribes roezlii
ROCA2	California wildrose	Rosa californica
RUBUS	blackberry	Rubus spp.

Table 14.--Index of Plant Symbols and Common and Scientific Plant Names--Continued

Plant symbol	Local common name	Scientific name
RUCR	curly dock	Rumex crispus
RUDI2	Himalaya blackberry	Rubus discolor
RUPA	western thimbleberry	Rubus parviflorus
RUUR	California blackberry	Rubus ursinus
SAALV	golden willow	Salix alba var. vitellina
SAEX	coyote willow	Salix exigua
SALA6	arroyo willow	Salix lasiolepis
SALIX	willow	Salix spp.
SANIC5	blue elderberry	Sambucus nigra ssp. cerulea
SASO	creeping sage	Salvia sonomensis
SCACO4	hardstem tule	Scirpus acutus var. occidentalis
SCIRP	bulrush	Scirpus spp.
SEHA2	Hansen's spikemoss	Selaginella hansenii
SEPU4	Sierra mock stonecrop	Sedella pumila
SIDAL	checkerbloom	Sidalcea spp.
SOHA	Johnsongrass	Sorghum halepense
SYAL	common snowberry	Symphoricarpos albus
TAAR3	athel	Tamarix articulata
TACA8	medusahead	Taeniatherum caput-medusae
TADI2	baldcypress	Taxodium distichum
TARAX	dandelion	Taraxacum spp.
TOCA	California torreyia	Torreyia californica
TODI	Pacific poison oak	Toxicodendron diversilobum
TRBOL	broadleaf starflower	Trientalis borealis ssp. latifolia
TRDE	cowbag clover	Trifolium depauperatum
TRDU	yellow salsify	Tragopogon dubius
TRERE2	butter-n-eggs	Triphysaria eriantha ssp. eriantha
TRHI4	rose clover	Trifolium hirtum
TRHY3	white brodiaea	Triteleia hyacinthina
TRIFO	clover	Trifolium spp.
TRLA4	vinegarweed	Trichostema lanceolatum
TRPR2	red clover	Trifolium pratense
TYPHA	cattail	Typha spp.
UMCA	California laurel	Umbellularia californica
VECAC2	California false hellebore	Veratrum californicum var. californicum
VERBA	mullein	Verbascum spp.
VICA5	California wild grape	Vitis californica
VICIA	vetch	Vicia spp.
VIOLA	violet	Viola spp.
XANTH2	cocklebur	Xanthium spp.
ZIFR	Fremont's deathcamas	Zigadenus fremontii

Table 15a.--Recreational Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The rating is based on the limitation with the highest value. Only the three highest value limitations are listed. There may be more limitations. Fine-earth fractions and rock fragments are reported on a weight basis. An explanation of the rating criteria and of the abbreviations used in describing the limitations is given at the end of the table)

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
100: Anita clay-----	60	Limitations Saturation < 18" depth Flooding >= rare Depth to pan <= 20"	1.00 1.00 1.00	Limitations Saturation < 12" depth Depth to pan <= 20" Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 18" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00
Galt clay-----	25	Limitations Saturation < 18" depth Flooding >= rare Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Saturation < 18" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00
104: Bosquejo clay-----	85	Limitations Flooding >= rare Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Ponding (any duration) Surface clay >= 40% Permeability .06-.6"/hr	1.00 1.00 0.50	Limitations Ponding (any duration) Surface clay >= 40% Permeability .06-.6"/hr	1.00 1.00 0.50
105: Busacca clay loam-----	85	Limitations Flooding >= rare Ponding (any duration) Permeability .06-.6"/hr	1.00 1.00 0.10	Limitations Ponding (any duration) Permeability .06-.6"/hr	1.00 0.10	Limitations Ponding (any duration) Permeability .06-.6"/hr	1.00 0.10
108: Tuscan gravelly loam----	45	Limitations Saturation < 18" depth Depth to pan <= 20" Dusty	1.00 1.00 0.50	Limitations Saturation < 12" depth Depth to pan <= 20" Dusty	1.00 1.00 0.50	Limitations Saturation < 18" depth Surface fragments (<3") >25% Dusty	1.00 1.00 0.50
Igo gravelly loam-----	20	Limitations Saturation < 18" depth Depth to pan <= 20" Dusty	1.00 1.00 0.50	Limitations Saturation < 12" depth Depth to pan <= 20" Dusty	1.00 1.00 0.50	Limitations Saturation < 18" depth Surface fragments (<3") >25% Dusty	1.00 1.00 0.50

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
108: Anita clay-----	15	Limitations Saturation < 18" depth Depth to pan <= 20" Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 12" depth Depth to pan <= 20" Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 18" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00
109: Bosquejo clay loam-----	85	Limitations Flooding >= rare Ponding (any duration) Permeability .06-.6"/hr	1.00 1.00 0.49	Limitations Ponding (any duration) Permeability .06-.6"/hr	1.00 0.49	Limitations Ponding (any duration) Permeability .06-.6"/hr	1.00 0.49
110: Bosquejo silt loam, overwash, occasionally flooded-----	90	Limitations Flooding >= rare Ponding (any duration) Dusty	1.00 1.00 0.50	Limitations Ponding (any duration) Dusty Permeability .06-.6"/hr	1.00 0.50 0.40	Limitations Ponding (any duration) Occasional flooding Dusty	1.00 0.50 0.50
111yu: Auburn loam-----	40	Limitations Bedrock depth < 20" Slopes 8 to 15% Dusty	1.00 0.63 0.50	Limitations Bedrock depth < 20" Slopes 8 to 15% Dusty	1.00 0.63 0.50	Limitations Slopes > 6% Bedrock depth < 20" Dusty	1.00 1.00 0.50
Sobrante loam-----	40	Limitations Slopes 8 to 15% Dusty	0.63 0.50	Limitations Slopes 8 to 15% Dusty	0.63 0.50	Limitations Slopes > 6% Surface fragments (<3") 10-25% Dusty	1.00 0.50 0.50
114yu: Auburn gravelly loam---	40	Limitations Bedrock depth < 20" Slopes 8 to 15% Dusty	1.00 0.63 0.50	Limitations Bedrock depth < 20" Slopes 8 to 15% Dusty	1.00 0.63 0.50	Limitations Slopes > 6% Bedrock depth < 20" Surface fragments (<3") >25%	1.00 1.00 1.00
Sobrante gravelly loam--	40	Limitations Slopes 8 to 15% Dusty Fragments (<3") 25-50%	0.63 0.50 0.26	Limitations Slopes 8 to 15% Dusty Fragments (<3") 25-50%	0.63 0.50 0.26	Limitations Slopes > 6% Surface fragments (<3") >25% Dusty	1.00 1.00 0.50

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
118: Xerorthents, tailings---	80	Limitations Flooding >= rare Fragments (<3") > 50%	1.00 1.00	Limitations Fragments (<3") > 50%	1.00	Limitations Surface fragments (<3") >25% Occasional flooding Fragments >3" 5 to 30%	1.00 0.50 0.32
118co: Clear Lake clay, frequently flooded----	90	Limitations Flooding >= rare Surface clay >= 40% Permeability .06-.6"/hr	1.00 1.00 0.44	Limitations Surface clay >= 40% Frequent flooding Permeability .06-.6"/hr	1.00 0.50 0.44	Limitations Flooding > occasional Surface clay >= 40% Permeability .06-.6"/hr	1.00 1.00 0.44
119: Xerorthents, tailings---	70	Limitations Flooding >= rare Fragments (<3") > 50%	1.00 1.00	Limitations Fragments (<3") > 50%	1.00	Limitations Surface fragments (<3") >25% Occasional flooding Fragments >3" 5 to 30%	1.00 0.50 0.32
Urban land-----	30	Not rated		Not rated		Not rated	
119yu: Auburn gravelly loam---	30	Limitations Slopes > 15% Bedrock depth < 20" Dusty	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth < 20" Dusty	1.00 1.00 0.50	Limitations Slopes > 6% Bedrock depth < 20" Surface fragments (<3") >25%	1.00 1.00 1.00
Sobrante gravelly loam--	30	Limitations Slopes > 15% Dusty Fragments (<3") 25-50%	1.00 0.50 0.26	Limitations Slopes > 15% Dusty Fragments (<3") 25-50%	1.00 0.50 0.26	Limitations Slopes > 6% Surface fragments (<3") >25% Dusty	1.00 1.00 0.50
Rock outcrop-----	20	Not rated		Not rated		Not rated	

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
120: Gridley taxadjunct clay loam-----	80	Limitations Saturation < 18" depth Flooding >= rare Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Depth to pan <= 20" Saturation from 12 to 30" depth	1.00 0.99 0.94	Limitations Saturation < 18" depth Ponding (any duration) Permeability .06-.6"/hr	1.00 1.00 0.10
121: Boga loam-----	45	Limitations Ponding (any duration) Dusty	1.00 0.50	Limitations Ponding (any duration) Dusty	1.00 0.50	Limitations Ponding (any duration) Dusty	1.00 0.50
Loemstone loam-----	40	Limitations Ponding (any duration) Dusty	1.00 0.50	Limitations Ponding (any duration) Dusty	1.00 0.50	Limitations Ponding (any duration) Dusty	1.00 0.50
121su: Columbia fine sandy loam, frequently flooded-----	80	Limitations Flooding >= rare Surface sand fractions 70- 90% by wt.	1.00 0.01	Limitations Frequent flooding Surface sand fractions 70- 90% by wt.	0.50 0.01	Limitations Flooding > occasional Surface sand fractions 70- 90% by wt.	1.00 0.01
125: Gridley taxadjunct loam	65	Limitations Saturation < 18" depth Flooding >= rare Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Depth to pan between 20 and 40" Saturation from 12 to 30" depth	1.00 0.97 0.94	Limitations Saturation < 18" depth Ponding (any duration) Dusty	1.00 1.00 0.50
Calcic Haploxerolls sandy loam-----	20	Limitations Flooding >= rare Surface EC 6 to 8 mmhos/cm	1.00 0.50	Limitations Surface EC 4-8 mmhos/cm Surface SAR between 8-13	0.50 0.32	Limitations Surface EC 4-8 mmhos/cm Surface SAR between 8-13	0.50 0.32
126: Liveoak sandy loam-----	85	No limitations		No limitations		No limitations	

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
127: Gridley taxadjunct loam	85	Limitations Saturation < 18" depth Flooding >= rare Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Depth to pan between 20 and 40" Saturation from 12 to 30"	1.00 0.97 0.94	Limitations Saturation < 18" depth Ponding (any duration) Dusty	1.00 1.00 0.50
130: Eastbiggs loam-----	80	Limitations Saturation < 18" depth Depth to pan between 20 and 40" Dusty	1.00 0.71 0.50	Limitations Saturation from 12 to 30" depth Depth to pan between 20 and 40" Dusty	0.96 0.71 0.50	Limitations Saturation < 18" depth Dusty Permeability .06-.6"/hr	1.00 0.50 0.46
133: Eastbiggs loam-----	50	Limitations Saturation < 18" depth Depth to pan between 20 and 40" Dusty	1.00 0.71 0.50	Limitations Saturation from 12 to 30" depth Depth to pan between 20 and 40" Dusty	0.96 0.71 0.50	Limitations Saturation < 18" depth Dusty Permeability .06-.6"/hr	1.00 0.50 0.46
Galt clay loam-----	40	Limitations Saturation < 18" depth Ponding (any duration) Depth to pan between 20 and 40"	1.00 1.00 0.46	Limitations Saturation < 12" depth Ponding (any duration) Depth to pan between 20 and 40"	1.00 1.00 0.46	Limitations Saturation < 18" depth Ponding (any duration) Permeability .06-.6"/hr	1.00 1.00 0.40
136: Duric Xerarents, cut----	35	Limitations Saturation < 18" depth Depth to pan <= 20" Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 12" depth Depth to pan <= 20" Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 18" depth Ponding (any duration) Permeability .06-.6"/hr	1.00 1.00 0.49
Duric Xerarents, fill---	30	Limitations Ponding (any duration) Permeability .06-.6"/hr	1.00 0.40	Limitations Ponding (any duration) Permeability .06-.6"/hr	1.00 0.40	Limitations Ponding (any duration) Permeability .06-.6"/hr	1.00 0.40

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
136: Eastbiggs fine sandy loam, leveled-----	25	Limitations Saturation < 18" depth Ponding (any duration) Depth to pan between 20 and 40"	1.00 1.00 0.46	Limitations Ponding (any duration) Saturation from 12 to 30" depth Depth to pan between 20 and 40"	1.00 0.96 0.46	Limitations Saturation < 18" depth Ponding (any duration) Permeability .06-.6"/hr	1.00 1.00 0.38
138su: Liveoak sandy clay loam	85	No limitations		No limitations		No limitations	
139su: Liveoak taxadjunct loam, frequently flooded-----	45	Limitations Flooding >= rare Dusty	1.00 0.50	Limitations Frequent flooding Dusty	0.50 0.50	Limitations Flooding > occasional Dusty	1.00 0.50
Galt taxadjunct clay loam, frequently flooded-----	40	Limitations Saturation < 18" depth Flooding >= rare Depth to pan <= 20"	1.00 1.00 0.99	Limitations Depth to pan <= 20" Saturation from 12 to 30" depth Frequent flooding	0.99 0.88 0.50	Limitations Saturation < 18" depth Flooding > occasional	1.00 1.00
143su: Marcum clay loam-----	45	Limitations Permeability .06-.6"/hr	0.46	Limitations Permeability .06-.6"/hr	0.46	Limitations Permeability .06-.6"/hr	0.46
Gridley clay loam-----	40	Limitations Permeability .06-.6"/hr	0.46	Limitations Permeability .06-.6"/hr	0.46	Limitations Permeability .06-.6"/hr	0.46
149yu: Flanly sandy loam-----	80	Limitations Fragments >10" >3% Slopes 8 to 15%	1.00 0.63	Limitations Fragments >10" >3% Slopes 8 to 15%	1.00 0.63	Limitations Slopes > 6% Fragments >10" >3% Fragments >3" 5 to 30%	1.00 1.00 0.03

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
150: Columbia stratified sand to fine sandy loam	85	Limitations Flooding >= rare Surface sand fractions > 90% by wt.	1.00 1.00	Limitations Surface sand fractions > 90% by wt. Frequent flooding	1.00 0.50	Limitations Flooding > occasional Surface sand fractions > 90% by wt.	1.00 1.00
150su: Olashes sandy loam-----	85	No limitations		No limitations		No limitations	
151yu: Flanly sandy loam-----	80	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 6% Fragments >10" >3% Fragments >3" 5 to 30%	1.00 1.00 0.03
152: Gianella fine sandy loam, frequently flooded-----	85	Limitations Flooding >= rare	1.00	Limitations Frequent flooding	0.50	Limitations Flooding > occasional	1.00
153: Gianella sandy loam, frequently flooded-----	85	Limitations Flooding >= rare	1.00	Limitations Frequent flooding	0.50	Limitations Flooding > occasional	1.00
154: Gianella silt loam, frequently flooded-----	85	Limitations Flooding >= rare Dusty	1.00 0.50	Limitations Frequent flooding Dusty	0.50 0.50	Limitations Flooding > occasional Dusty	1.00 0.50
158: Gianella fine sandy loam, occasionally flooded-----	85	Limitations Flooding >= rare Surface sand fractions 70- 90% by wt.	1.00 0.01	Limitations Surface sand fractions 70- 90% by wt.	0.01	Limitations Occasional flooding Surface sand fractions 70- 90% by wt.	0.50 0.01

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
160: Gianella loam, occasionally flooded---	85	Limitations Flooding >= rare Dusty	1.00 0.50	Limitations Dusty	0.50	Limitations Occasional flooding Dusty	0.50 0.50
161: Gianella fine sandy loam, rarely flooded---	90	Limitations Flooding >= rare Surface sand fractions 70- 90% by wt.	1.00 0.01	Limitations Surface sand fractions 70- 90% by wt.	0.01	Limitations Surface sand fractions 70- 90% by wt.	0.01
162: Gianella loam, rarely flooded-----	90	Limitations Flooding >= rare Dusty	1.00 0.50	Limitations Dusty	0.50	Limitations Dusty	0.50
163yu: Holillipah loamy sand---	85	Limitations Flooding >= rare Surface sand fractions 70- 90% by wt.	1.00 0.36	Limitations Frequent flooding Surface sand fractions 70- 90% by wt.	0.50 0.36	Limitations Flooding > occasional Surface sand fractions 70- 90% by wt.	1.00 0.36
165yu: Holland loam-----	40	Limitations Slopes > 15% Dusty	1.00 0.50	Limitations Slopes > 15% Dusty	1.00 0.50	Limitations Slopes > 6% Dusty	1.00 0.50
Hoda loam-----	25	Limitations Slopes > 15% Dusty	1.00 0.50	Limitations Slopes > 15% Dusty	1.00 0.50	Limitations Slopes > 6% Dusty	1.00 0.50
Hotaw loam-----	20	Limitations Slopes > 15% Dusty	1.00 0.50	Limitations Slopes > 15% Dusty	1.00 0.50	Limitations Slopes > 6% Dusty	1.00 0.50
173yu: Hotaw loam-----	45	Limitations Slopes > 15% Dusty	1.00 0.50	Limitations Slopes > 15% Dusty	1.00 0.50	Limitations Slopes > 6% Dusty	1.00 0.50

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
173yu: Chawanakee gravelly sandy loam-----	20	Limitations Bedrock depth < 20" Slopes > 15%	1.00 1.00	Limitations Bedrock depth < 20" Slopes > 15%	1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20"	1.00 1.00
Holland loam-----	15	Limitations Slopes > 15% Dusty	1.00 0.50	Limitations Slopes > 15% Dusty	1.00 0.50	Limitations Slopes > 6% Dusty	1.00 0.50
175: Farwell clay loam, rarely flooded-----	85	Limitations Flooding >= rare Permeability .06-.6"/hr	1.00 0.10	Limitations Permeability .06-.6"/hr	0.10	Limitations Permeability .06-.6"/hr	0.10
176: Farwell loam, occasionally flooded---	85	Limitations Flooding >= rare Dusty	1.00 0.50	Limitations Dusty	0.50	Limitations Occasional flooding Dusty	0.50 0.50
176yu: Jocal loam-----	80	Limitations Slopes 8 to 15% Dusty	0.63 0.50	Limitations Slopes 8 to 15% Dusty	0.63 0.50	Limitations Slopes > 6% Dusty Surface fragments (<3") 10- 25%	1.00 0.50 0.22
177: Farwell silt loam, occasionally flooded---	85	Limitations Flooding >= rare Dusty	1.00 0.50	Limitations Dusty	0.50	Limitations Occasional flooding Dusty	0.50 0.50
178: Arbuckle gravelly loam--	87	Limitations Flooding >= rare Dusty	1.00 0.50	Limitations Dusty	0.50	Limitations Surface fragments (<3") >25% Dusty	1.00 0.50

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
179:							
Moda taxadjunct loam----	65	Limitations		Limitations		Limitations	
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation < 18" depth	1.00
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Ponding (any duration)	1.00	Depth to pan between 20 and 40"	0.97	Dusty	0.50
Arbuckle gravelly loam--	20	Limitations		Limitations		Limitations	
		Flooding >= rare	1.00	Dusty	0.50	Surface fragments (<3") >25%	1.00
		Dusty	0.50			Dusty	0.50
180:							
Dodgeland silty clay loam, occasionally flooded-----	85	Limitations		Limitations		Limitations	
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation < 18" depth	1.00
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Ponding (any duration)	1.00	Permeability .06-.6"/hr	0.46	Occasional flooding	0.50
181:							
Dodgeland silty clay loam, frequently flooded-----	80	Limitations		Limitations		Limitations	
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation < 18" depth	1.00
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Flooding > occasional	1.00
		Ponding (any duration)	1.00	Frequent flooding	0.50	Ponding (any duration)	1.00
188yu:							
Mariposa taxadjunct gravelly loam-----	80	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Surface fragments (<3") >25%	1.00
		Fragments (<3") 25-50%	0.14	Fragments (<3") 25-50%	0.14	Bedrock 20-40" and slope > 2%	0.50
189:							
Esquon silt loam, overwash-----	90	Limitations		Limitations		Limitations	
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Ponding (any duration)	1.00	Dusty	0.50	Dusty	0.50
		Dusty	0.50	Permeability .06-.6"/hr	0.49	Permeability .06-.6"/hr	0.49

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
189yu: Mariposa taxadjunct gravelly loam-----	80	Limitations Slopes > 15% Dusty Fragments (<3") 25-50%	1.00 0.50 0.14	Limitations Slopes > 15% Dusty Fragments (<3") 25-50%	1.00 0.50 0.14	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock 20-40" and slope > 2%	1.00 1.00 0.50
196yu: Mildred cobbly loam-----	80	Limitations Slopes > 15% Dusty Permeability .06-.6"/hr	1.00 0.50 0.50	Limitations Slopes > 15% Dusty Permeability .06-.6"/hr	1.00 0.50 0.50	Limitations Slopes > 6% Fragments >3" 5 to 30% Surface fragments (<3") 10- 25%	1.00 0.92 0.83
200: Parrott silt loam, occasionally flooded---	85	Limitations Flooding >= rare Ponding (any duration) Dusty	1.00 1.00 0.50	Limitations Ponding (any duration) Dusty	1.00 0.50	Limitations Ponding (any duration) Occasional flooding Dusty	1.00 0.50 0.50
201: Parrott silt loam, frequently flooded-----	85	Limitations Flooding >= rare Ponding (any duration) Dusty	1.00 1.00 0.50	Limitations Ponding (any duration) Frequent flooding Dusty	1.00 0.50 0.50	Limitations Flooding > occasional Ponding (any duration) Dusty	1.00 1.00 0.50
203: Kusalslough silty clay loam, occasionally flooded-----	85	Limitations Flooding >= rare Ponding (any duration) Permeability .06-.6"/hr	1.00 1.00 0.10	Limitations Ponding (any duration) Permeability .06-.6"/hr	1.00 0.10	Limitations Ponding (any duration) Occasional flooding Permeability .06-.6"/hr	1.00 0.50 0.10

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
205: Parrott silt loam, frequently flooded-----	50	Limitations Flooding >= rare Ponding (any duration) Dusty	1.00 1.00 0.50	Limitations Ponding (any duration) Frequent flooding Dusty	1.00 0.50 0.50	Limitations Flooding > occasional Ponding (any duration) Dusty	1.00 1.00 0.50
Vermet silt loam, frequently flooded-----	35	Limitations Saturation < 18" depth Flooding >= rare Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration) Frequent flooding	1.00 1.00 0.50	Limitations Saturation < 18" depth Flooding > occasional Ponding (any duration)	1.00 1.00 1.00
206: Islandbar sandy loam----	60	Limitations Slopes 8 to 15%	0.01	Limitations Slopes 8 to 15%	0.01	Limitations Slopes > 6%	1.00
Chawanakee gravelly sandy loam-----	30	Limitations Bedrock depth < 20" Slopes 8 to 15%	1.00 0.01	Limitations Bedrock depth < 20" Slopes 8 to 15%	1.00 0.01	Limitations Bedrock depth < 20" Slopes > 6%	1.00 1.00
207: Islandbar sandy loam----	60	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
Chawanakee gravelly sandy loam-----	30	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20"	1.00 1.00
208: Islandbar sandy loam----	60	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
Chawanakee gravelly sandy loam-----	30	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20"	1.00 1.00
209: Islandbar sandy loam----	60	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
209: Chawanakee gravelly sandy loam-----	30	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20"	1.00 1.00
210: Featherfalls sandy loam	50	Limitations Slopes 8 to 15%	0.01	Limitations Slopes 8 to 15%	0.01	Limitations Slopes > 6%	1.00
Islandbar sandy loam----	35	Limitations Slopes 8 to 15%	0.01	Limitations Slopes 8 to 15%	0.01	Limitations Slopes > 6%	1.00
211: Featherfalls sandy loam	55	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
Islandbar sandy loam----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
212: Featherfalls sandy loam	55	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
Islandbar sandy loam----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
213: Featherfalls sandy loam	45	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
Islandbar sandy loam----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
214: Crystalhill gravelly coarse sandy loam-----	35	Limitations Slopes 8 to 15%	0.16	Limitations Slopes 8 to 15%	0.16	Limitations Slopes > 6%	1.00
Oregongulch gravelly sandy loam-----	20	Limitations Permeability .06-.6"/hr Slopes 8 to 15%	0.50 0.16	Limitations Permeability .06-.6"/hr Slopes 8 to 15%	0.50 0.16	Limitations Slopes > 6% Permeability .06-.6"/hr	1.00 0.50

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
214: Craigsaddle coarse sandy loam-----	20	No limitations		No limitations		Limitations Slopes > 6%	1.00
Rock outcrop, trondhemite-----	10	Not rated		Not rated		Not rated	
215: Crystalhill gravelly coarse sandy loam-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
Oregongulch gravelly sandy loam-----	20	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.50	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.50	Limitations Slopes > 6% Permeability .06-.6"/hr	1.00 0.50
Craigsaddle coarse sandy loam-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
Rock outcrop, trondhemite-----	10	Not rated		Not rated		Not rated	
216: Crystalhill gravelly coarse sandy loam-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
Oregongulch gravelly sandy loam-----	20	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.50	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.50	Limitations Slopes > 6% Permeability .06-.6"/hr	1.00 0.50
Craigsaddle coarse sandy loam-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
Rock outcrop, trondhemite-----	10	Not rated		Not rated		Not rated	

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
217:							
Crystalhill gravelly coarse sandy loam-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
Oregongulch gravelly sandy loam-----	20	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.50	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.50	Limitations Slopes > 6% Permeability .06-.6"/hr	1.00 0.50
Craigsaddle coarse sandy loam-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
Rock outcrop, trondhjemite-----	10	Not rated		Not rated		Not rated	
218:							
Rock outcrop, quartz diorite-----	60	Not rated		Not rated		Not rated	
Lithic Xerorthents gravelly sandy loam----	20	Limitations Bedrock depth < 20" Slopes > 15% Fragments >10" >3%	1.00 1.00 1.00	Limitations Bedrock depth < 20" Slopes > 15% Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00
Chawanakee gravelly sandy loam-----	15	Limitations Bedrock depth < 20" Slopes > 15%	1.00 1.00	Limitations Bedrock depth < 20" Slopes > 15%	1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20"	1.00 1.00
219:							
Rock outcrop, quartz diorite-----	60	Not rated		Not rated		Not rated	
Lithic Xerorthents gravelly sandy loam----	20	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
219: Chawanakee gravelly sandy loam-----	15	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20"	1.00 1.00
220: Esquon clay, frequently flooded-----	60	Limitations Flooding >= rare Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Ponding (any duration) Surface clay >= 40% Saturation from 12 to 30" depth	1.00 1.00 0.75	Limitations Flooding > occasional Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00
Clear Lake silty clay loam, overwash-----	30	Limitations Saturation < 18" depth Flooding >= rare Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration) Frequent flooding	1.00 1.00 0.50	Limitations Saturation < 18" depth Flooding > occasional Ponding (any duration)	1.00 1.00 1.00
221yu: Sites loam-----	85	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Slopes 2 to 6% Dusty Surface fragments (<3") 10- 25%	0.98 0.50 0.04
222yu: Sites loam-----	85	Limitations Slopes 8 to 15% Dusty	0.63 0.50	Limitations Slopes 8 to 15% Dusty	0.63 0.50	Limitations Slopes > 6% Dusty Surface fragments (<3") 10- 25%	1.00 0.50 0.04
225yu: Sites gravelly loam, bedrock substratum-----	80	Limitations Dusty Fragments (<3") 25-50%	0.50 0.26	Limitations Dusty Fragments (<3") 25-50%	0.50 0.26	Limitations Surface fragments (<3") >25% Slopes 2 to 6% Dusty	1.00 0.98 0.50

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
226yu: Sites gravelly loam, bedrock substratum-----	80	Limitations Slopes 8 to 15% Dusty Fragments (<3") 25-50%	 0.63 0.50 0.26	Limitations Slopes 8 to 15% Dusty Fragments (<3") 25-50%	 0.63 0.50 0.26	Limitations Slopes > 6% Surface fragments (<3") >25% Dusty	 1.00 1.00 0.50
227yu: Sites gravelly loam, bedrock substratum-----	80	Limitations Slopes > 15% Dusty Fragments (<3") 25-50%	 1.00 0.50 0.26	Limitations Slopes > 15% Dusty Fragments (<3") 25-50%	 1.00 0.50 0.26	Limitations Slopes > 6% Surface fragments (<3") >25% Dusty	 1.00 1.00 0.50
242yu: Surnuf loam-----	80	Limitations Slopes 8 to 15% Dusty	 0.63 0.50	Limitations Slopes 8 to 15% Dusty	 0.63 0.50	Limitations Slopes > 6% Dusty	 1.00 0.50
243yu: Surnuf loam-----	80	Limitations Slopes > 15% Dusty	 1.00 0.50	Limitations Slopes > 15% Dusty	 1.00 0.50	Limitations Slopes > 6% Dusty	 1.00 0.50
244yu: Surnuf loam-----	80	Limitations Slopes > 15% Dusty	 1.00 0.50	Limitations Slopes > 15% Dusty	 1.00 0.50	Limitations Slopes > 6% Dusty	 1.00 0.50
245: Surnuf loam-----	80	Limitations Slopes > 15% Dusty	 1.00 0.50	Limitations Slopes > 15% Dusty	 1.00 0.50	Limitations Slopes > 6% Dusty	 1.00 0.50
248yu: Trainer loam-----	85	Limitations Flooding >= rare Dusty	 1.00 0.50	Limitations Dusty	 0.50	Limitations Occasional flooding Dusty	 0.50 0.50

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
250: Llanoseco, occasionally flooded-----	90	Limitations Flooding >= rare Ponding (any duration) Permeability .06-.6"/hr	1.00 1.00 0.44	Limitations Ponding (any duration) Permeability .06-.6"/hr	1.00 0.44	Limitations Ponding (any duration) Occasional flooding Permeability .06-.6"/hr	1.00 0.50 0.44
252: Whitecabin silty clay, occasionally flooded---	60	Limitations Flooding >= rare Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Ponding (any duration) Surface clay >= 40% Permeability .06-.6"/hr	1.00 1.00 0.46	Limitations Ponding (any duration) Surface clay >= 40% Occasional flooding	1.00 1.00 0.50
Ordferry silty clay, occasionally flooded---	25	Limitations Saturation < 18" depth Flooding >= rare Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Saturation < 18" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00
252yu: Woodleaf gravelly loam--	80	Limitations Dusty Permeability .06-.6"/hr Slopes 8 to 15%	0.50 0.46 0.04	Limitations Dusty Permeability .06-.6"/hr Slopes 8 to 15%	0.50 0.46 0.04	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >3" 5 to 30%	1.00 0.99 0.68
253yu: Woodleaf gravelly loam--	80	Limitations Slopes > 15% Dusty Permeability .06-.6"/hr	1.00 0.50 0.46	Limitations Slopes > 15% Dusty Permeability .06-.6"/hr	1.00 0.50 0.46	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >3" 5 to 30%	1.00 0.99 0.68
255: Whitecabin silty clay loam, occasionally flooded-----	60	Limitations Flooding >= rare Ponding (any duration) Permeability .06-.6"/hr	1.00 1.00 0.46	Limitations Ponding (any duration) Permeability .06-.6"/hr Saturation from 12 to 30" depth	1.00 0.46 0.08	Limitations Ponding (any duration) Occasional flooding Permeability .06-.6"/hr	1.00 0.50 0.46

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
255: Ordferry silty clay, occasionally flooded---	30	Limitations Saturation < 18" depth Flooding >= rare Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Saturation < 18" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00
256: Whitecabin silt loam, occasionally flooded---	85	Limitations Flooding >= rare Ponding (any duration) Dusty	1.00 1.00 0.50	Limitations Ponding (any duration) Dusty Permeability .06-.6"/hr	1.00 0.50 0.46	Limitations Ponding (any duration) Occasional flooding Dusty	1.00 0.50 0.50
257: Llanoseco, frequently flooded-----	90	Limitations Flooding >= rare Ponding (any duration) Permeability .06-.6"/hr	1.00 1.00 0.44	Limitations Ponding (any duration) Frequent flooding Permeability .06-.6"/hr	1.00 0.50 0.44	Limitations Flooding > occasional Ponding (any duration) Permeability .06-.6"/hr	1.00 1.00 0.44
258: Codora, occasionally flooded-----	85	Limitations Flooding >= rare Ponding (any duration) Permeability .06-.6"/hr	1.00 1.00 0.31	Limitations Ponding (any duration) Permeability .06-.6"/hr	1.00 0.31	Limitations Ponding (any duration) Occasional flooding Permeability .06-.6"/hr	1.00 0.50 0.31
260: Ordferry silty clay, occasionally flooded---	90	Limitations Saturation < 18" depth Flooding >= rare Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Saturation < 18" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00
280: Columbia taxadjunct stratified very fine sandy loam-----	80	Limitations Saturation < 18" depth Flooding >= rare	1.00 1.00	Limitations Saturation < 12" depth Frequent flooding	1.00 0.50	Limitations Saturation < 18" depth Flooding > occasional	1.00 1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
290: Perkins gravelly loam---	90	Limitations Fragments (<3") 25-50% Dusty	0.68 0.50	Limitations Fragments (<3") 25-50% Dusty	0.68 0.50	Limitations Surface fragments (<3") >25% Dusty Slopes 2 to 6%	1.00 0.50 0.02
300: Redsluff gravelly loam--	80	Limitations Flooding >= rare Fragments (<3") 25-50% Dusty	1.00 0.68 0.50	Limitations Fragments (<3") 25-50% Dusty	0.68 0.50	Limitations Surface fragments (<3") >25% Dusty	1.00 0.50
301: Wafap gravelly loam----	70	Limitations Saturation < 18" depth Flooding >= rare Dusty	1.00 1.00 0.50	Limitations Saturation from 12 to 30" depth Dusty Permeability .06-.6"/hr	0.90 0.50 0.35	Limitations Saturation < 18" depth Surface fragments (<3") >25% Dusty	1.00 1.00 0.50
Hamslough clay-----	15	Limitations Saturation < 18" depth Flooding >= rare Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Saturation < 18" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00
302: Redtough loam-----	50	Limitations Saturation < 18" depth Depth to pan <= 20" Dusty	1.00 1.00 0.50	Limitations Saturation < 12" depth Depth to pan <= 20" Dusty	1.00 1.00 0.50	Limitations Saturation < 18" depth Dusty Surface fragments (<3") 10- 25%	1.00 0.50 0.22
Redswale cobbly loam---	35	Limitations Saturation < 18" depth Depth to pan <= 20" Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 12" depth Depth to pan <= 20" Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 18" depth Ponding (any duration) Fragments >3" 5 to 30%	1.00 1.00 0.92
303: Munjar gravelly loam---	60	Limitations Saturation from 18 to 30" depth Dusty Depth to pan between 20 and 40"	0.88 0.50 0.35	Limitations Saturation from 12 to 30" depth Dusty Depth to pan between 20 and 40"	0.56 0.50 0.35	Limitations Surface fragments (<3") >25% Saturation from 18 to 30" depth Dusty	1.00 0.88 0.50

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
303: Tuscan taxadjunct gravelly clay loam-----	20	Limitations Saturation < 18" depth Depth to pan between 20 and 40" Permeability .06-.6"/hr	1.00 0.54 0.35	Limitations Saturation < 12" depth Depth to pan between 20 and 40" Permeability .06-.6"/hr	1.00 0.54 0.35	Limitations Saturation < 18" depth Surface fragments (<3") >25% Permeability .06-.6"/hr	1.00 1.00 0.35
Galt clay-----	10	Limitations Saturation < 18" depth Flooding >= rare Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Saturation < 18" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00
304: Redtough loam-----	80	Limitations Depth to pan <= 20" Slopes > 15% Dusty	1.00 1.00 0.50	Limitations Depth to pan <= 20" Slopes > 15% Dusty	1.00 1.00 0.50	Limitations Slopes > 6% Dusty Surface fragments (<3") 10-25%	1.00 0.50 0.22
305: Redtough gravelly loam--	45	Limitations Saturation < 18" depth Depth to pan <= 20" Dusty	1.00 1.00 0.50	Limitations Saturation < 12" depth Depth to pan <= 20" Dusty	1.00 1.00 0.50	Limitations Saturation < 18" depth Surface fragments (<3") >25% Dusty	1.00 1.00 0.50
Redswale loam-----	25	Limitations Saturation < 18" depth Depth to pan <= 20" Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 12" depth Depth to pan <= 20" Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 18" depth Ponding (any duration) Dusty	1.00 1.00 0.50
Anita, gravelly duripan	20	Limitations Saturation < 18" depth Depth to pan <= 20" Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 12" depth Depth to pan <= 20" Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 18" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00
306: Duric Xerarents, fill---	50	Limitations Saturation < 18" depth Ponding (any duration) Dusty	1.00 1.00 0.50	Limitations Saturation < 12" depth Ponding (any duration) Dusty	1.00 1.00 0.50	Limitations Saturation < 18" depth Ponding (any duration) Dusty	1.00 1.00 0.50

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
306: Duric Xerarents, cut----	40	Limitations Saturation < 18" depth Depth to pan <= 20" Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 12" depth Depth to pan <= 20" Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 18" depth Ponding (any duration)	1.00 1.00
307: Duric Xerarents clay loam, leveled-----	70	Limitations Saturation < 18" depth Depth to pan <= 20" Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 12" depth Depth to pan <= 20" Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 18" depth Ponding (any duration) Permeability .06-.6"/hr	1.00 1.00 0.44
310: Kimball loam-----	85	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Dusty	0.50
317: Thompsonflat loam-----	75	Limitations Dusty Permeability .06-.6"/hr	0.50 0.44	Limitations Dusty Permeability .06-.6"/hr	0.50 0.44	Limitations Slopes 2 to 6% Dusty Permeability .06-.6"/hr	0.74 0.50 0.44
318: Thompsonflat fine sandy loam-----	50	Limitations Permeability .06-.6"/hr	0.46	Limitations Permeability .06-.6"/hr	0.46	Limitations Slopes 2 to 6% Permeability .06-.6"/hr Surface fragments (<3") 10-25%	0.74 0.46 0.22
Oroville gravelly fine sandy loam-----	40	Limitations Saturation < 18" depth Ponding (any duration) Depth to pan between 20 and 40"	1.00 1.00 0.95	Limitations Ponding (any duration) Saturation < 12" depth Depth to pan between 20 and 40"	1.00 0.99 0.95	Limitations Saturation < 18" depth Ponding (any duration) Surface fragments (<3") >25%	1.00 1.00 1.00
320: Vistarobles sandy loam--	50	Limitations Saturation < 18" depth Depth to pan <= 20" Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 12" depth Depth to pan <= 20" Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 18" depth Ponding (any duration) Permeability .06-.6"/hr	1.00 1.00 0.35

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
320: Redding loam-----	40	Limitations Dusty Permeability .06-.6"/hr Saturation from 18 to 30" depth	0.50 0.48 0.39	Limitations Dusty Permeability .06-.6"/hr Saturation from 12 to 30" depth	0.50 0.48 0.19	Limitations Dusty Permeability .06-.6"/hr Saturation from 18 to 30" depth	0.50 0.48 0.39
321: Durixeralfs, fine-loamy, gravelly fine sandy loam-----	50	Limitations Saturation from 18 to 30" depth Depth to pan between 20 and 40" Fragments (<3") 25-50%	0.88 0.71 0.68	Limitations Depth to pan between 20 and 40" Fragments (<3") 25-50% Saturation from 12 to 30" depth	0.71 0.68 0.56	Limitations Surface fragments (<3") >25% Saturation from 18 to 30" Permeability .06-.6"/hr	1.00 0.88 0.44
Durixeralfs, loamy- skeletal, gravelly fine sandy loam-----	20	Limitations Saturation < 18" depth Depth to pan <= 20" Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 12" depth Depth to pan <= 20" Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 18" depth Ponding (any duration) Surface fragments (<3") >25%	1.00 1.00 1.00
Typic Petraquepts silty clay-----	15	Limitations Saturation < 18" depth Depth to pan <= 20" Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 12" depth Depth to pan <= 20" Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 18" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00
330: Wilsoncreek loam, occasionally flooded---	60	Limitations Flooding >= rare Dusty	1.00 0.50	Limitations Dusty	0.50	Limitations Occasional flooding Dusty	0.50 0.50
Trainer loam, occasionally flooded---	25	Limitations Flooding >= rare Dusty	1.00 0.50	Limitations Dusty	0.50	Limitations Occasional flooding Dusty	0.50 0.50

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
331: Thompsonflat loam-----	85	Limitations Slopes > 15% Dusty Permeability .06-.6"/hr	1.00 0.50 0.44	Limitations Slopes > 15% Dusty Permeability .06-.6"/hr	1.00 0.50 0.44	Limitations Slopes > 6% Dusty Permeability .06-.6"/hr	1.00 0.50 0.44
335: Galt clay loam-----	85	Limitations Saturation < 18" depth Ponding (any duration) Depth to pan between 20 and 40"	1.00 1.00 0.46	Limitations Saturation < 12" depth Ponding (any duration) Depth to pan between 20 and 40"	1.00 1.00 0.46	Limitations Saturation < 18" depth Ponding (any duration) Permeability .06-.6"/hr	1.00 1.00 0.40
336: Galt clay-----	90	Limitations Saturation < 18" depth Flooding >= rare Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Saturation < 18" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00
337: Galt clay loam-----	85	Limitations Saturation < 18" depth Ponding (any duration) Depth to pan between 20 and 40"	1.00 1.00 0.46	Limitations Saturation < 12" depth Ponding (any duration) Depth to pan between 20 and 40"	1.00 1.00 0.46	Limitations Saturation < 18" depth Ponding (any duration) Permeability .06-.6"/hr	1.00 1.00 0.40
338: Oxyaquic Xerofluvents silt loam-----	90	Limitations Flooding >= rare Ponding (any duration) Dusty	1.00 1.00 0.50	Limitations Ponding (any duration) Dusty	1.00 0.50	Limitations Ponding (any duration) Dusty	1.00 0.50
339: Oxyaquic Xerofluvents sandy loam, frequently flooded-----	90	Limitations Flooding >= rare Ponding (any duration)	1.00 1.00	Limitations Ponding (any duration) Frequent flooding	1.00 0.50	Limitations Flooding > occasional Ponding (any duration)	1.00 1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
340: Rock outcrop, Lovejoy basalt-----	35	Not rated		Not rated		Not rated	
Thermalrocks very gravelly loam-----	25	Limitations Bedrock depth < 20"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations Bedrock depth < 20" Surface fragments (<3") 10- 25% Fragments >3" 5 to 30%	1.00 0.94 0.92
Campbellhills gravelly loam-----	20	Limitations Saturation < 18" depth Dusty Permeability .06-.6"/hr	1.00 0.50 0.35	Limitations Saturation < 12" depth Dusty Permeability .06-.6"/hr	1.00 0.50 0.35	Limitations Saturation < 18" depth Surface fragments (<3") 10- 25% Slopes 2 to 6%	1.00 0.88 0.74
341: Elsey loam-----	25	Limitations Saturation < 18" depth	1.00	Limitations Saturation from 12 to 30" depth	0.90	Limitations Saturation < 18" depth Bedrock 20-40" and slope > 2% Slopes 2 to 6%	1.00 0.50 0.26
Beatsonhollow gravelly loam-----	25	Limitations Saturation < 18" depth Bedrock depth < 20" Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 12" depth Bedrock depth < 20" Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 18" depth Bedrock depth < 20" Ponding (any duration)	1.00 1.00 1.00
Campbellhills gravelly loam-----	20	Limitations Saturation < 18" depth Dusty Permeability .06-.6"/hr	1.00 0.50 0.35	Limitations Saturation < 12" depth Dusty Permeability .06-.6"/hr	1.00 0.50 0.35	Limitations Saturation < 18" depth Surface fragments (<3") 10- 25% Dusty	1.00 0.88 0.50
Rock outcrop, Lovejoy basalt-----	20	Not rated		Not rated		Not rated	

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
342: Thermalrocks very gravelly loam-----	40	Limitations Bedrock depth < 20" Slopes > 15%	1.00 1.00	Limitations Bedrock depth < 20" Slopes > 15%	1.00 1.00	Limitations Bedrock depth < 20" Slopes > 6% Surface fragments (<3") 10-25%	1.00 1.00 0.94
Beatsonhollow taxadjunct fine sandy loam-----	35	Limitations Saturation < 18" depth Bedrock depth < 20"	1.00 1.00	Limitations Saturation < 12" depth Bedrock depth < 20"	1.00 1.00	Limitations Saturation < 18" depth Bedrock depth < 20" Surface fragments (<3") 10-25%	1.00 1.00 0.22
Rock outcrop, Lovejoy basalt-----	15	Not rated		Not rated		Not rated	
343: Coalcanyon very cobbly loam-----	50	Limitations Fragments >10" .1 to 3% Dusty Fragments >3" 25 to 75%	0.76 0.50 0.32	Limitations Fragments >10" .1 to 3% Dusty Fragments >3" 25 to 75%	0.76 0.50 0.32	Limitations Slopes > 6% Fragments > 3" > 30% Fragments >10" .1 to 3%	1.00 1.00 0.76
Coonhollow gravelly loam-----	35	Limitations Fragments >10" >3% Dusty Slopes 8 to 15%	1.00 0.50 0.16	Limitations Fragments >10" >3% Dusty Slopes 8 to 15%	1.00 0.50 0.16	Limitations Slopes > 6% Fragments >10" >3% Surface fragments (<3") 10-25%	1.00 1.00 0.88
344: Coalcanyon very cobbly loam-----	45	Limitations Slopes > 15% Fragments >10" .1 to 3% Dusty	1.00 0.76 0.50	Limitations Slopes > 15% Fragments >10" .1 to 3% Dusty	1.00 0.76 0.50	Limitations Slopes > 6% Fragments > 3" > 30% Fragments >10" .1 to 3%	1.00 1.00 0.76

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
344: Coonhollow gravelly loam-----	30	Limitations Slopes > 15% Fragments >10" >3% Dusty	1.00 1.00 0.50	Limitations Slopes > 15% Fragments >10" >3% Dusty	1.00 1.00 0.50	Limitations Slopes > 6% Fragments >10" >3% Surface fragments (<3") 10- 25%	1.00 1.00 0.88
Rock outcrop, Lovejoy basalt-----	15	Not rated		Not rated		Not rated	
346: Cherotable loam-----	50	Limitations Dusty Permeability .06-.6"/hr	0.50 0.49	Limitations Dusty Permeability .06-.6"/hr	0.50 0.49	Limitations Slopes 2 to 6% Dusty Permeability .06-.6"/hr	0.74 0.50 0.49
Elsely loam-----	35	Limitations Saturation < 18" depth	1.00	Limitations Saturation from 12 to 30" depth	0.90	Limitations Saturation < 18" depth Slopes 2 to 6% Bedrock 20-40" and slope > 2%	1.00 0.74 0.50
347: Haplic Palexeralfs loam	90	Limitations Flooding >= rare Dusty Permeability .06-.6"/hr	1.00 0.50 0.28	Limitations Dusty Permeability .06-.6"/hr	0.50 0.28	Limitations Slopes 2 to 6% Occasional flooding Dusty	0.74 0.50 0.50
353: Cherokeespring gravelly silt loam-----	80	Limitations Slopes 8 to 15% Dusty Permeability .06-.6"/hr	0.63 0.50 0.10	Limitations Slopes 8 to 15% Dusty Permeability .06-.6"/hr	0.63 0.50 0.10	Limitations Slopes > 6% Surface fragments (<3") >25% Dusty	1.00 1.00 0.50
355: Coalcanyon very cobbly loam-----	55	Limitations Slopes > 15% Fragments >10" .1 to 3% Dusty	1.00 0.76 0.50	Limitations Slopes > 15% Fragments >10" .1 to 3% Dusty	1.00 0.76 0.50	Limitations Slopes > 6% Fragments > 3" > 30% Fragments >10" .1 to 3%	1.00 1.00 0.76

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
355: Talus-----	35	Not rated		Not rated		Not rated	
356: Coalcanyon very cobbly loam-----	45	Limitations Slopes > 15% Fragments >10" .1 to 3% Dusty	1.00 0.76 0.50	Limitations Slopes > 15% Fragments >10" .1 to 3% Dusty	1.00 0.76 0.50	Limitations Slopes > 6% Fragments > 3" > 30% Fragments >10" .1 to 3%	1.00 1.00 0.76
Rock outcrop, basalt cliffs-----	20	Not rated		Not rated		Not rated	
Talus-----	20	Not rated		Not rated		Not rated	
Coonhollow gravelly loam-----	10	Limitations Slopes > 15% Fragments >10" >3% Dusty	1.00 1.00 0.50	Limitations Slopes > 15% Fragments >10" >3% Dusty	1.00 1.00 0.50	Limitations Slopes > 6% Fragments >10" >3% Surface fragments (<3") 10-25%	1.00 1.00 0.88
360: Typic Xerofluvents, coarse-loamy-----	45	Limitations Flooding >= rare Surface sand fractions 70-90% by wt. Fragments (<3") 25-50%	1.00 0.76 0.08	Limitations Surface sand fractions 70-90% by wt. Fragments (<3") 25-50%	0.76 0.08	Limitations Surface fragments (<3") >25% Surface sand fractions 70-90% by wt. Slopes 2 to 6%	1.00 0.76 0.02
Typic Xerofluvents, sandy-skeletal-----	40	Limitations Flooding >= rare Fragments (<3") 25-50% Surface sand fractions 70-90% by wt.	1.00 0.92 0.82	Limitations Fragments (<3") 25-50% Surface sand fractions 70-90% by wt.	0.92 0.82	Limitations Surface fragments (<3") >25% Surface sand fractions 70-90% by wt. Slopes 2 to 6%	1.00 0.82 0.02

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
361: Typic Xerofluvents, sandy-skeletal-----	85	Limitations Flooding >= rare Fragments (<3") 25-50% Surface sand fractions 70-90% by wt.	1.00 0.92 0.82	Limitations Fragments (<3") 25-50% Surface sand fractions 70-90% by wt.	0.92 0.82	Limitations Surface fragments (<3") >25% Surface sand fractions 70-90% by wt. Slopes 2 to 6%	1.00 0.82 0.02
362: Ultic Haploxeralfs, sandstone, low elevation, very deep---	60	No limitations		No limitations		Limitations Slopes 2 to 6%	0.26
Ultic Haploxeralfs, sandstone, low elevation, deep-----	25	No limitations		No limitations		Limitations Slopes 2 to 6% Surface fragments (<3") 10-25%	0.26 0.22
363: Ultic Haploxeralfs, sandstone, low elevation, very deep---	60	No limitations		No limitations		Limitations Slopes 2 to 6%	0.74
Ultic Haploxeralfs, sandstone, low elevation, deep-----	30	Limitations Slopes 8 to 15%	0.63	Limitations Slopes 8 to 15%	0.63	Limitations Slopes > 6% Surface fragments (<3") 10-25%	1.00 0.22
364: Ultic Haploxeralfs, sandstone, low elevation, deep-----	50	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6% Surface fragments (<3") 10-25%	1.00 0.22

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
364: Ultic Haploxeralfs, sandstone, low elevation, very deep---	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
365: Palexerults gravelly loam-----	80	Limitations Slopes > 15% Dusty Permeability .06-.6"/hr	1.00 0.50 0.50	Limitations Slopes > 15% Dusty Permeability .06-.6"/hr	1.00 0.50 0.50	Limitations Slopes > 6% Dusty Permeability .06-.6"/hr	1.00 0.50 0.50
366: Palexerults gravelly loam-----	80	Limitations Slopes > 15% Dusty Permeability .06-.6"/hr	1.00 0.50 0.50	Limitations Slopes > 15% Dusty Permeability .06-.6"/hr	1.00 0.50 0.50	Limitations Slopes > 6% Dusty Permeability .06-.6"/hr	1.00 0.50 0.50
370: Palexerults gravelly loam-----	80	Limitations Dusty Permeability .06-.6"/hr	0.50 0.50	Limitations Dusty Permeability .06-.6"/hr	0.50 0.50	Limitations Slopes > 6% Dusty Permeability .06-.6"/hr	1.00 0.50 0.50
375: Wicksorner loam-----	80	Limitations Dusty Permeability .06-.6"/hr	0.50 0.44	Limitations Dusty Permeability .06-.6"/hr	0.50 0.44	Limitations Slopes 2 to 6% Dusty Permeability .06-.6"/hr	0.74 0.50 0.44
376: Flagcanyon gravelly loam-----	50	Limitations Dusty Depth to pan between 20 and 40" Saturation from 18 to 30" depth	0.50 0.46 0.28	Limitations Dusty Depth to pan between 20 and 40" Saturation from 12 to 30" depth	0.50 0.46 0.14	Limitations Surface fragments (<3") >25% Slopes 2 to 6% Dusty	1.00 0.50 0.50

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
376: Wicks corner loam-----	35	Limitations Dusty Permeability .06-.6"/hr	0.50 0.44	Limitations Dusty Permeability .06-.6"/hr	0.50 0.44	Limitations Dusty Permeability .06-.6"/hr Slopes 2 to 6%	0.50 0.44 0.26
377: Flagcanyon taxadjunct fine sandy loam-----	55	Limitations Saturation < 18" depth Ponding (any duration) Permeability .06-.6"/hr	1.00 1.00 0.46	Limitations Ponding (any duration) Saturation from 12 to 30" depth Permeability .06-.6"/hr	1.00 0.88 0.46	Limitations Saturation < 18" depth Ponding (any duration) Permeability .06-.6"/hr	1.00 1.00 0.46
Durixeralfs, clayey- skeletal, loam-----	20	Limitations Saturation < 18" depth Depth to pan <= 20" Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 12" depth Depth to pan <= 20" Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 18" depth Ponding (any duration) Dusty	1.00 1.00 0.50
Duraquerts gravelly clay-----	15	Limitations Saturation < 18" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Saturation < 18" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00
400: Subaco taxadjunct clay--	85	Limitations Flooding >= rare Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Ponding (any duration) Surface clay >= 40% Saturation from 12 to 30" depth	1.00 1.00 0.52	Limitations Ponding (any duration) Surface clay >= 40% Saturation from 18 to 30" depth	1.00 1.00 0.84
415: Ignord fine sandy loam--	90	Limitations Flooding >= rare	1.00	No limitations		No limitations	
416: Calcic Haploxerolls sandy loam-----	90	Limitations Flooding >= rare Surface EC 6 to 8 mmhos/cm	1.00 0.50	Limitations Surface EC 4-8 mmhos/cm Surface SAR between 8-13	0.50 0.32	Limitations Surface EC 4-8 mmhos/cm Surface SAR between 8-13	0.50 0.32

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
418: Almendra loam-----	85	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Dusty	0.50
419: Conejo fine sandy loam, overwash-----	85	No limitations		No limitations		No limitations	
420: Conejo clay loam-----	85	No limitations		No limitations		No limitations	
425: Vina fine sandy loam----	85	Limitations Flooding >= rare Surface sand fractions 70- 90% by wt.	1.00 0.01	Limitations Surface sand fractions 70- 90% by wt.	0.01	Limitations Surface sand fractions 70- 90% by wt.	0.01
426: Vina loam-----	85	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Dusty	0.50
439: Oxyaquic Xerofluvents clay-----	85	Limitations Flooding >= rare Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Ponding (any duration) Surface clay >= 40% Frequent flooding	1.00 1.00 0.50	Limitations Flooding > occasional Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00
440: Oxyaquic Xerofluvents silt loam, frequently flooded-----	80	Limitations Flooding >= rare Ponding (any duration) Dusty	1.00 1.00 0.50	Limitations Ponding (any duration) Frequent flooding Dusty	1.00 0.50 0.50	Limitations Flooding > occasional Ponding (any duration) Dusty	1.00 1.00 0.50
441: Oxyaquic Xerofluvents very fine sandy loam---	90	Limitations Flooding >= rare Ponding (any duration) Dusty	1.00 1.00 0.50	Limitations Ponding (any duration) Dusty	1.00 0.50	Limitations Ponding (any duration) Dusty	1.00 0.50

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
442: Durixerolls clay loam---	55	Limitations Saturation < 18" depth Flooding >= rare Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation from 12 to 30" depth Depth to pan between 20 and 40"	1.00 0.94 0.20	Limitations Saturation < 18" depth Ponding (any duration) Permeability .06-.6"/hr	1.00 1.00 0.10
Haploxerolls clay loam--	30	Limitations Flooding >= rare	1.00	No limitations		No limitations	
443: Durixerolls loam-----	60	Limitations Saturation < 18" depth Flooding >= rare Depth to pan between 20 and 40"	1.00 1.00 0.80	Limitations Saturation from 12 to 30" depth Depth to pan between 20 and 40" Dusty	0.94 0.80 0.50	Limitations Saturation < 18" depth Dusty	1.00 0.50
Haploxerolls loam-----	25	Limitations Flooding >= rare Dusty	1.00 0.50	Limitations Dusty	0.50	Limitations Dusty	0.50
445: Chico loam-----	85	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Dusty	0.50
447: Charger fine sandy loam	80	Limitations Flooding >= rare	1.00	No limitations		Limitations Surface fragments (<3") 10- 25%	0.22
448: Haploxerolls clay loam--	75	Limitations Flooding >= rare Permeability .06-.6"/hr	1.00 0.10	Limitations Permeability .06-.6"/hr	0.10	Limitations Permeability .06-.6"/hr	0.10
449: Haploxerolls loam-----	75	Limitations Flooding >= rare Dusty	1.00 0.50	Limitations Dusty	0.50	Limitations Dusty	0.50

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
500: Lofgren clay-----	45	Limitations Flooding >= rare Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Ponding (any duration) Surface clay >= 40% Saturation from 12 to 30" depth	1.00 1.00 0.56	Limitations Ponding (any duration) Surface clay >= 40% Saturation from 18 to 30" depth	1.00 1.00 0.88
Blavo clay-----	40	Limitations Flooding >= rare Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Ponding (any duration) Surface clay >= 40% Saturation from 12 to 30" depth	1.00 1.00 0.56	Limitations Ponding (any duration) Surface clay >= 40% Saturation from 18 to 30" depth	1.00 1.00 0.88
501: Lofgren clay, occasionally flooded---	45	Limitations Flooding >= rare Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Ponding (any duration) Surface clay >= 40% Saturation from 12 to 30" depth	1.00 1.00 0.56	Limitations Ponding (any duration) Surface clay >= 40% Saturation from 18 to 30" depth	1.00 1.00 0.88
Blavo clay, occasionally flooded---	40	Limitations Flooding >= rare Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Ponding (any duration) Surface clay >= 40% Saturation from 12 to 30" depth	1.00 1.00 0.56	Limitations Ponding (any duration) Surface clay >= 40% Saturation from 18 to 30" depth	1.00 1.00 0.88
502: Blavo silt loam, overwash, occasionally flooded-----	80	Limitations Flooding >= rare Ponding (any duration) Saturation from 18 to 30" depth	1.00 1.00 0.88	Limitations Ponding (any duration) Saturation from 12 to 30" depth Dusty	1.00 0.56 0.50	Limitations Ponding (any duration) Saturation from 18 to 30" depth Occasional flooding	1.00 0.88 0.50
519: Edjobe silty clay-----	85	Limitations Ponding (any duration) Surface clay >= 40% Permeability .06-.6"/hr	1.00 1.00 0.50	Limitations Ponding (any duration) Surface clay >= 40% Permeability .06-.6"/hr	1.00 1.00 0.50	Limitations Ponding (any duration) Surface clay >= 40% Permeability .06-.6"/hr	1.00 1.00 0.50

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
520: Esquon clay-----	60	Limitations Flooding >= rare Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Ponding (any duration) Surface clay >= 40% Permeability .06-.6"/hr	1.00 1.00 0.44	Limitations Ponding (any duration) Surface clay >= 40% Permeability .06-.6"/hr	1.00 1.00 0.44
Neerdobe clay-----	30	Limitations Flooding >= rare Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Ponding (any duration) Surface clay >= 40% Saturation from 12 to 30" depth	1.00 1.00 0.56	Limitations Ponding (any duration) Surface clay >= 40% Saturation from 18 to 30" depth	1.00 1.00 0.88
521: Neerdobe silt loam, overwash-----	85	Limitations Flooding >= rare Ponding (any duration) Dusty	1.00 1.00 0.50	Limitations Ponding (any duration) Dusty Permeability .06-.6"/hr	1.00 0.50 0.40	Limitations Ponding (any duration) Dusty Permeability .06-.6"/hr	1.00 0.50 0.40
522: Clear Lake silty clay loam, overwash-----	80	Limitations Saturation < 18" depth Flooding >= rare Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration) Frequent flooding	1.00 1.00 0.50	Limitations Saturation < 18" depth Flooding > occasional Ponding (any duration)	1.00 1.00 1.00
523: Esquon, silty clay loam, overwash-----	80	Limitations Saturation < 18" depth Flooding >= rare Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration) Frequent flooding	1.00 1.00 0.50	Limitations Saturation < 18" depth Flooding > occasional Ponding (any duration)	1.00 1.00 1.00
525: Govstanford loam-----	85	Limitations Dusty Saturation from 18 to 30" depth	0.50 0.24	Limitations Dusty Saturation from 12 to 30" depth	0.50 0.12	Limitations Dusty Saturation from 18 to 30" depth	0.50 0.24

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
526: Govstanford loam, occasionally flooded---	85	Limitations Flooding >= rare Dusty Saturation from 18 to 30" depth	1.00 0.50 0.24	Limitations Dusty Saturation from 12 to 30" depth	0.50 0.12	Limitations Occasional flooding Dusty Saturation from 18 to 30" depth	0.50 0.50 0.24
528: Neerdobe clay loam-----	90	Limitations Saturation < 18" depth Flooding >= rare Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation from 12 to 30" depth Depth to pan between 20 and 40"	1.00 0.98 0.86	Limitations Saturation < 18" depth Ponding (any duration) Permeability .06-.6"/hr	1.00 1.00 0.46
550: Dunstone loam, dry-----	60	Limitations Bedrock depth < 20" Dusty	1.00 0.50	Limitations Bedrock depth < 20" Dusty	1.00 0.50	Limitations Bedrock depth < 20" Slopes 2 to 6% Dusty	1.00 0.98 0.50
Loafercreek silt loam, dry-----	20	Limitations Dusty Slopes 8 to 15%	0.50 0.01	Limitations Dusty Slopes 8 to 15%	0.50 0.01	Limitations Slopes > 6% Dusty	1.00 0.50
551: Dunstone loam, dry-----	35	Limitations Slopes > 15% Bedrock depth < 20" Dusty	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth < 20" Dusty	1.00 1.00 0.50	Limitations Slopes > 6% Bedrock depth < 20" Dusty	1.00 1.00 0.50
Lomarica loam-----	15	Limitations Slopes > 15% Dusty Permeability .06-.6"/hr	1.00 0.50 0.48	Limitations Slopes > 15% Dusty Permeability .06-.6"/hr	1.00 0.50 0.48	Limitations Slopes > 6% Dusty Permeability .06-.6"/hr	1.00 0.50 0.48
Argonaut taxadjunct loam	15	Limitations Slopes > 15% Dusty Permeability .06-.6"/hr	1.00 0.50 0.40	Limitations Slopes > 15% Dusty Permeability .06-.6"/hr	1.00 0.50 0.40	Limitations Slopes > 6% Dusty Permeability .06-.6"/hr	1.00 0.50 0.40

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
552: Dunstone gravelly loam--	45	Limitations Bedrock depth < 20" Dusty Fragments (<3") 25-50%	1.00 0.50 0.08	Limitations Bedrock depth < 20" Dusty Fragments (<3") 25-50%	1.00 0.50 0.08	Limitations Bedrock depth < 20" Slopes > 6% Surface fragments (<3") >25%	1.00 1.00 1.00
Loafercreek gravelly loam-----	40	Limitations Fragments (<3") > 50% Fragments >10" .1 to 3% Slopes 8 to 15%	1.00 0.76 0.01	Limitations Fragments (<3") > 50% Fragments >10" .1 to 3% Slopes 8 to 15%	1.00 0.76 0.01	Limitations Surface fragments (<3") >25% Slopes > 6% Fragments >10" .1 to 3%	1.00 1.00 0.76
553: Dunstone gravelly loam--	45	Limitations Slopes > 15% Bedrock depth < 20" Dusty	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth < 20" Dusty	1.00 1.00 0.50	Limitations Slopes > 6% Bedrock depth < 20" Surface fragments (<3") >25%	1.00 1.00 1.00
Loafercreek gravelly loam-----	40	Limitations Slopes > 15% Fragments (<3") > 50% Fragments >10" .1 to 3%	1.00 1.00 0.76	Limitations Slopes > 15% Fragments (<3") > 50% Fragments >10" .1 to 3%	1.00 1.00 0.76	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" .1 to 3%	1.00 1.00 0.76
554: Dunstone gravelly loam--	45	Limitations Slopes > 15% Bedrock depth < 20" Dusty	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth < 20" Dusty	1.00 1.00 0.50	Limitations Slopes > 6% Bedrock depth < 20" Surface fragments (<3") >25%	1.00 1.00 1.00
Loafercreek gravelly loam-----	40	Limitations Slopes > 15% Fragments (<3") > 50% Fragments >10" .1 to 3%	1.00 1.00 0.76	Limitations Slopes > 15% Fragments (<3") > 50% Fragments >10" .1 to 3%	1.00 1.00 0.76	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" .1 to 3%	1.00 1.00 0.76

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
555: Dunstone gravelly loam--	45	Limitations Slopes > 15% Bedrock depth < 20" Dusty	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth < 20" Dusty	1.00 1.00 0.50	Limitations Slopes > 6% Bedrock depth < 20" Surface fragments (<3") >25%	1.00 1.00 1.00
Loafercreek gravelly loam-----	40	Limitations Slopes > 15% Fragments (<3") > 50% Fragments >10" .1 to 3%	1.00 1.00 0.76	Limitations Slopes > 15% Fragments (<3") > 50% Fragments >10" .1 to 3%	1.00 1.00 0.76	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" .1 to 3%	1.00 1.00 0.76
556: Mounthope loam-----	50	Limitations Fragments >10" >3% Slopes 8 to 15%	1.00 0.01	Limitations Fragments >10" >3% Slopes 8 to 15%	1.00 0.01	Limitations Slopes > 6% Fragments >10" >3%	1.00 1.00
Hartsmill gravelly loam	40	Limitations Fragments >10" >3% Permeability .06-.6"/hr Slopes 8 to 15%	1.00 0.31 0.01	Limitations Fragments >10" >3% Permeability .06-.6"/hr Slopes 8 to 15%	1.00 0.31 0.01	Limitations Slopes > 6% Fragments >10" >3% Permeability .06-.6"/hr	1.00 1.00 0.31
557: Mounthope loam-----	50	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 6% Fragments >10" >3%	1.00 1.00
Hartsmill gravelly loam	40	Limitations Slopes > 15% Fragments >10" >3% Permeability .06-.6"/hr	1.00 1.00 0.31	Limitations Slopes > 15% Fragments >10" >3% Permeability .06-.6"/hr	1.00 1.00 0.31	Limitations Slopes > 6% Fragments >10" >3% Permeability .06-.6"/hr	1.00 1.00 0.31
558: Hartsmill gravelly loam	55	Limitations Slopes > 15% Fragments >10" >3% Permeability .06-.6"/hr	1.00 1.00 0.31	Limitations Slopes > 15% Fragments >10" >3% Permeability .06-.6"/hr	1.00 1.00 0.31	Limitations Slopes > 6% Fragments >10" >3% Permeability .06-.6"/hr	1.00 1.00 0.31
Mounthope loam-----	30	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 6% Fragments >10" >3%	1.00 1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
559: Hartsmill gravelly loam	55	Limitations Slopes > 15% Fragments >10" >3% Permeability .06-.6"/hr	1.00 1.00 0.31	Limitations Slopes > 15% Fragments >10" >3% Permeability .06-.6"/hr	1.00 1.00 0.31	Limitations Slopes > 6% Fragments >10" >3% Permeability .06-.6"/hr	1.00 1.00 0.31
Mounthope loam-----	30	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 6% Fragments >10" >3%	1.00 1.00
560: Hartsmill gravelly loam	50	Limitations Slopes > 15% Fragments >10" >3% Permeability .06-.6"/hr	1.00 1.00 0.31	Limitations Slopes > 15% Fragments >10" >3% Permeability .06-.6"/hr	1.00 1.00 0.31	Limitations Slopes > 6% Fragments >10" >3% Permeability .06-.6"/hr	1.00 1.00 0.31
Mounthope loam-----	30	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 6% Fragments >10" >3%	1.00 1.00
561: Bigridge loam-----	50	Limitations Slopes 8 to 15%	0.01	Limitations Slopes 8 to 15%	0.01	Limitations Slopes > 6%	1.00
Minniecreek loam-----	35	Limitations Dusty Permeability .06-.6"/hr Slopes 8 to 15%	0.50 0.15 0.01	Limitations Dusty Permeability .06-.6"/hr Slopes 8 to 15%	0.50 0.15 0.01	Limitations Slopes > 6% Dusty Surface fragments (<3") 10-25%	1.00 0.50 0.22
562: Bigridge loam-----	50	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
Minniecreek loam-----	35	Limitations Slopes > 15% Dusty Permeability .06-.6"/hr	1.00 0.50 0.15	Limitations Slopes > 15% Dusty Permeability .06-.6"/hr	1.00 0.50 0.15	Limitations Slopes > 6% Dusty Surface fragments (<3") 10-25%	1.00 0.50 0.22

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
563: Bigridge loam-----	50	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
Minniecreek loam-----	35	Limitations Slopes > 15% Dusty Permeability .06-.6"/hr	1.00 0.50 0.15	Limitations Slopes > 15% Dusty Permeability .06-.6"/hr	1.00 0.50 0.15	Limitations Slopes > 6% Dusty Surface fragments (<3") 10-25%	1.00 0.50 0.22
564: Bigridge loam-----	50	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
Minniecreek loam-----	35	Limitations Slopes > 15% Dusty Permeability .06-.6"/hr	1.00 0.50 0.15	Limitations Slopes > 15% Dusty Permeability .06-.6"/hr	1.00 0.50 0.15	Limitations Slopes > 6% Dusty Surface fragments (<3") 10-25%	1.00 0.50 0.22
565: Dunstone loam, dry-----	35	Limitations Bedrock depth < 20" Dusty	1.00 0.50	Limitations Bedrock depth < 20" Dusty	1.00 0.50	Limitations Bedrock depth < 20" Slopes 2 to 6% Dusty	1.00 0.98 0.50
Argonaut taxadjunct loam	30	Limitations Dusty Permeability .06-.6"/hr Slopes 8 to 15%	0.50 0.40 0.01	Limitations Dusty Permeability .06-.6"/hr Slopes 8 to 15%	0.50 0.40 0.01	Limitations Slopes > 6% Dusty Permeability .06-.6"/hr	1.00 0.50 0.40
Sunnyslope loam-----	20	Limitations Bedrock depth < 20" Dusty	1.00 0.50	Limitations Bedrock depth < 20" Dusty	1.00 0.50	Limitations Bedrock depth < 20" Slopes > 6% Dusty	1.00 1.00 0.50
566: Dunstone loam, dry-----	45	Limitations Bedrock depth < 20" Dusty	1.00 0.50	Limitations Bedrock depth < 20" Dusty	1.00 0.50	Limitations Bedrock depth < 20" Slopes 2 to 6% Dusty	1.00 0.98 0.50

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
566: Loafercreek silt loam, dry-----	20	Limitations Dusty Slopes 8 to 15%	0.50 0.01	Limitations Dusty Slopes 8 to 15%	0.50 0.01	Limitations Slopes > 6% Dusty	1.00 0.50
Katskillhill loam-----	15	Limitations Dusty Permeability .06-.6"/hr Slopes 8 to 15%	0.50 0.48 0.01	Limitations Dusty Permeability .06-.6"/hr Slopes 8 to 15%	0.50 0.48 0.01	Limitations Slopes > 6% Dusty Permeability .06-.6"/hr	1.00 0.50 0.48
567: Dunstone loam, dry-----	40	Limitations Bedrock depth < 20" Dusty	1.00 0.50	Limitations Bedrock depth < 20" Dusty	1.00 0.50	Limitations Bedrock depth < 20" Slopes 2 to 6% Dusty	1.00 0.98 0.50
Loafercreek silt loam, dry-----	25	Limitations Dusty Slopes 8 to 15%	0.50 0.01	Limitations Dusty Slopes 8 to 15%	0.50 0.01	Limitations Slopes > 6% Dusty	1.00 0.50
Argonaut taxadjunct loam	20	Limitations Dusty Permeability .06-.6"/hr Slopes 8 to 15%	0.50 0.40 0.01	Limitations Dusty Permeability .06-.6"/hr Slopes 8 to 15%	0.50 0.40 0.01	Limitations Slopes > 6% Dusty Permeability .06-.6"/hr	1.00 0.50 0.40
577: Parkshill coarse sandy loam-----	40	Limitations Slopes 8 to 15%	0.01	Limitations Slopes 8 to 15%	0.01	Limitations Slopes > 6%	1.00
Flanly loam-----	25	Limitations Dusty Slopes 8 to 15%	0.50 0.01	Limitations Dusty Slopes 8 to 15%	0.50 0.01	Limitations Slopes > 6% Dusty	1.00 0.50
Hurleton gravelly sandy loam-----	20	Limitations Fragments (<3") 25-50% Slopes 8 to 15%	0.08 0.04	Limitations Fragments (<3") 25-50% Slopes 8 to 15%	0.08 0.04	Limitations Surface fragments (<3") >25% Slopes > 6% Bedrock 20-40" and slope > 2%	1.00 1.00 0.50

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
578:							
Flanly loam-----	45	Limitations Dusty Slopes 8 to 15%	0.50 0.01	Limitations Dusty Slopes 8 to 15%	0.50 0.01	Limitations Slopes > 6% Dusty	1.00 0.50
Swedesflat cobbly fine sandy loam-----	35	Limitations Bedrock depth < 20" Slopes 8 to 15%	1.00 0.16	Limitations Bedrock depth < 20" Slopes 8 to 15%	1.00 0.16	Limitations Bedrock depth < 20" Slopes > 6% Fragments >3" 5 to 30%	1.00 1.00 0.92
580:							
Surnuf taxadjunct loam--	40	Limitations Slopes 8 to 15%	0.01	Limitations Slopes 8 to 15%	0.01	Limitations Slopes > 6%	1.00
Griffgulch very gravelly silt loam----	25	Limitations Permeability .06-.6"/hr Fragments >10" .1 to 3% Slopes 8 to 15%	0.44 0.19 0.01	Limitations Permeability .06-.6"/hr Fragments >10" .1 to 3% Slopes 8 to 15%	0.44 0.19 0.01	Limitations Slopes > 6% Permeability .06-.6"/hr Fragments >10" .1 to 3%	1.00 0.44 0.19
Rock outcrop, metavolcanic-----	20	Not rated		Not rated		Not rated	
581:							
Surnuf taxadjunct loam--	65	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
Griffgulch very gravelly silt loam----	20	Limitations Slopes > 15% Permeability .06-.6"/hr Fragments >10" .1 to 3%	1.00 0.44 0.19	Limitations Slopes > 15% Permeability .06-.6"/hr Fragments >10" .1 to 3%	1.00 0.44 0.19	Limitations Slopes > 6% Permeability .06-.6"/hr Fragments >10" .1 to 3%	1.00 0.44 0.19
582:							
Surnuf taxadjunct loam--	50	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
Griffgulch very gravelly silt loam----	35	Limitations Slopes > 15% Permeability .06-.6"/hr Fragments >10" .1 to 3%	1.00 0.44 0.19	Limitations Slopes > 15% Permeability .06-.6"/hr Fragments >10" .1 to 3%	1.00 0.44 0.19	Limitations Slopes > 6% Permeability .06-.6"/hr Fragments >10" .1 to 3%	1.00 0.44 0.19

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
583: Surnuf taxadjunct loam--	50	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
Griffgulch very gravelly silt loam----	35	Limitations Slopes > 15% Permeability .06-.6"/hr Fragments >10" .1 to 3%	1.00 0.44 0.19	Limitations Slopes > 15% Permeability .06-.6"/hr Fragments >10" .1 to 3%	1.00 0.44 0.19	Limitations Slopes > 6% Permeability .06-.6"/hr Fragments >10" .1 to 3%	1.00 0.44 0.19
584: Flanly loam-----	35	Limitations Slopes > 15% Dusty	1.00 0.50	Limitations Slopes > 15% Dusty	1.00 0.50	Limitations Slopes > 6% Dusty	1.00 0.50
Swedesflat cobbly fine sandy loam-----	30	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20" Fragments >3" 5 to 30%	1.00 1.00 0.92
Rackerby very gravelly sandy loam-----	25	Limitations Slopes > 15% Bedrock depth < 20" Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20" Surface fragments (<3") >25%	1.00 1.00 1.00
585: Flanly loam-----	45	Limitations Dusty Slopes 8 to 15%	0.50 0.01	Limitations Dusty Slopes 8 to 15%	0.50 0.01	Limitations Slopes > 6% Dusty	1.00 0.50
Sommeyflat loam-----	35	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Slopes 2 to 6% Dusty	0.74 0.50
586: Sommeyflat loam-----	45	Limitations Slopes > 15% Dusty	1.00 0.50	Limitations Slopes > 15% Dusty	1.00 0.50	Limitations Slopes > 6% Dusty	1.00 0.50

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
586: Mounthope loam-----	40	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 6% Fragments >10" >3%	1.00 1.00
587: Sommeyflat loam-----	35	Limitations Slopes > 15% Dusty	1.00 0.50	Limitations Slopes > 15% Dusty	1.00 0.50	Limitations Slopes > 6% Dusty	1.00 0.50
Mounthope loam-----	30	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 6% Fragments >10" >3%	1.00 1.00
Hurleton gravelly sandy loam-----	25	Limitations Slopes > 15% Fragments (<3") 25-50%	1.00 0.08	Limitations Slopes > 15% Fragments (<3") 25-50%	1.00 0.08	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock 20-40" and slope > 2%	1.00 1.00 0.50
588: Ultic Haploxeralfs, thermic, high terrace--	95	Limitations Saturation from 18 to 30" depth Dusty	0.88 0.50	Limitations Saturation from 12 to 30" depth Dusty	0.56 0.50	Limitations Slopes > 6% Saturation from 18 to 30" depth Dusty	1.00 0.88 0.50
589: Ultic Haploxeralfs, thermic, high terrace--	95	Limitations Slopes > 15% Saturation from 18 to 30" depth Dusty	1.00 0.88 0.50	Limitations Slopes > 15% Saturation from 12 to 30" depth Dusty	1.00 0.56 0.50	Limitations Slopes > 6% Saturation from 18 to 30" depth Dusty	1.00 0.88 0.50
590: Vistarobles sandy loam--	30	Limitations Saturation < 18" depth Depth to pan <= 20" Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 12" depth Depth to pan <= 20" Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 18" depth Ponding (any duration) Permeability .06-.6"/hr	1.00 1.00 0.35

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
590: Redding loam-----	25	Limitations Dusty Permeability .06-.6"/hr Saturation from 18 to 30" depth	 0.50 0.48 0.39	Limitations Dusty Permeability .06-.6"/hr Saturation from 12 to 30" depth	 0.50 0.48 0.19	Limitations Dusty Permeability .06-.6"/hr Saturation from 18 to 30" depth	 0.50 0.48 0.39
Argonaut taxadjunct loam	20	Limitations Dusty Permeability .06-.6"/hr	 0.50 0.40	Limitations Dusty Permeability .06-.6"/hr	 0.50 0.40	Limitations Slopes 2 to 6% Dusty Permeability .06-.6"/hr	 0.50 0.50 0.40
Haploxererts gravelly silty clay-----	15	Limitations Saturation < 18" depth Ponding (any duration) Surface clay >= 40%	 1.00 1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	 1.00 1.00 1.00	Limitations Saturation < 18" depth Ponding (any duration) Surface fragments (<3") >25%	 1.00 1.00 1.00
603: Oroville gravelly fine sandy loam-----	30	Limitations Saturation < 18" depth Ponding (any duration) Depth to pan between 20 and 40"	 1.00 1.00 0.95	Limitations Ponding (any duration) Saturation < 12" depth Depth to pan between 20 and 40"	 1.00 0.99 0.95	Limitations Saturation < 18" depth Ponding (any duration) Surface fragments (<3") >25%	 1.00 1.00 1.00
Thermalito sandy loam---	25	Limitations Saturation < 18" depth Permeability .06-.6"/hr Depth to pan between 20 and 40"	 1.00 0.46 0.35	Limitations Saturation from 12 to 30" depth Permeability .06-.6"/hr Depth to pan between 20 and 40"	 0.96 0.46 0.35	Limitations Saturation < 18" depth Permeability .06-.6"/hr Slopes 2 to 6%	 1.00 0.46 0.26
Fernandez sandy loam---	15	Limitations Permeability .06-.6"/hr	 0.20	Limitations Permeability .06-.6"/hr	 0.20	Limitations Surface fragments (<3") 10-25% Permeability .06-.6"/hr	 0.22 0.20

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
603: Thompsonflat fine sandy loam-----	15	Limitations Permeability .06-.6"/hr	0.46	Limitations Permeability .06-.6"/hr	0.46	Limitations Slopes 2 to 6% Permeability .06-.6"/hr Surface fragments (<3") 10-25%	0.74 0.46 0.22
605: Duric Xerarents fine sandy loam, leveled----	75	Limitations Saturation < 18" depth Depth to pan <= 20" Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 12" depth Depth to pan <= 20" Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 18" depth Ponding (any duration) Surface fragments (<3") 10-25%	1.00 1.00 0.22
Oroville gravelly fine sandy loam-----	20	Limitations Saturation < 18" depth Ponding (any duration) Depth to pan between 20 and 40"	1.00 1.00 0.95	Limitations Ponding (any duration) Saturation < 12" depth Depth to pan between 20 and 40"	1.00 0.99 0.95	Limitations Saturation < 18" depth Ponding (any duration) Surface fragments (<3") >25%	1.00 1.00 1.00
606: Redtough loam-----	45	Limitations Saturation < 18" depth Depth to pan <= 20" Dusty	1.00 1.00 0.50	Limitations Saturation < 12" depth Depth to pan <= 20" Dusty	1.00 1.00 0.50	Limitations Saturation < 18" depth Dusty Surface fragments (<3") 10-25%	1.00 0.50 0.22
Fallager loam-----	30	Limitations Saturation < 18" depth Depth to pan <= 20" Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 12" depth Depth to pan <= 20" Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 18" depth Ponding (any duration) Dusty	1.00 1.00 0.50
Anita, gravelly duripan	15	Limitations Saturation < 18" depth Depth to pan <= 20" Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 12" depth Depth to pan <= 20" Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 18" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
609:							
Anita, gravelly duripan	50	Limitations		Limitations		Limitations	
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation < 18" depth	1.00
		Depth to pan <= 20"	1.00	Depth to pan <= 20"	1.00	Ponding (any duration)	1.00
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Surface clay >= 40%	1.00
Tuscan taxadjunct gravelly clay loam-----	40	Limitations		Limitations		Limitations	
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation < 18" depth	1.00
		Depth to pan between 20 and 40"	0.54	Depth to pan between 20 and 40"	0.54	Surface fragments (<3") >25%	1.00
		Permeability .06-.6"/hr	0.35	Permeability .06-.6"/hr	0.35	Permeability .06-.6"/hr	0.35
614:							
Doemill gravelly loam---	50	Limitations		Limitations		Limitations	
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation < 18" depth	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Surface fragments (<3") >25%	1.00
Jokerst very cobbly loam	40	Limitations		Limitations		Limitations	
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation < 18" depth	1.00
		Flooding >= rare	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Bedrock depth < 20"	1.00	Ponding (any duration)	1.00	Flooding > occasional	1.00
615:							
Doemill gravelly loam---	50	Limitations		Limitations		Limitations	
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation < 18" depth	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Surface fragments (<3") >25%	1.00
Jokerst very cobbly loam	40	Limitations		Limitations		Limitations	
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation < 18" depth	1.00
		Flooding >= rare	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Bedrock depth < 20"	1.00	Ponding (any duration)	1.00	Flooding > occasional	1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
616: Jokerst very cobbly loam	35	Limitations Saturation < 18" depth Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Saturation < 12" depth Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Saturation < 18" depth Bedrock depth < 20"	1.00 1.00 1.00
Doemill gravelly loam---	35	Limitations Saturation < 18" depth Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Bedrock depth < 20" Fragments >10" >3% Saturation < 12" depth	1.00 1.00 0.99	Limitations Slopes > 6% Saturation < 18" depth Bedrock depth < 20"	1.00 1.00 1.00
Typic Haploxeralfs gravelly loam-----	15	Limitations Fragments >10" >3% Slopes 8 to 15% Fragments (<3") 25-50%	1.00 0.84 0.68	Limitations Fragments >10" >3% Slopes 8 to 15% Fragments (<3") 25-50%	1.00 0.84 0.68	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
617: Doemill gravelly loam---	35	Limitations Slopes > 15% Saturation < 18" depth Bedrock depth < 20"	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Saturation < 18" depth Bedrock depth < 20"	1.00 1.00 1.00
Jokerst very cobbly loam	30	Limitations Slopes > 15% Saturation < 18" depth Bedrock depth < 20"	1.00 1.00 1.00	Limitations Slopes > 15% Saturation < 12" depth Bedrock depth < 20"	1.00 1.00 1.00	Limitations Slopes > 6% Saturation < 18" depth Bedrock depth < 20"	1.00 1.00 1.00
Typic Haploxeralfs gravelly loam-----	20	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.68	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.68	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
619: Carhart taxadjunct clay	90	Limitations Saturation < 18" depth Bedrock depth < 20" Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 12" depth Bedrock depth < 20" Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 18" depth Bedrock depth < 20" Ponding (any duration)	1.00 1.00 1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
620:							
Doemill gravelly loam---	40	Limitations		Limitations		Limitations	
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation < 18" depth	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Surface fragments (<3") >25%	1.00
Jokerst very cobbly loam	25	Limitations		Limitations		Limitations	
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation < 18" depth	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
Ultic Haploxeralfs, thermic, gravelly loam	20	Limitations		Limitations		Limitations	
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
		Dusty	0.50	Dusty	0.50	Fragments >3" 5 to 30%	0.68
		Permeability .06-.6"/hr	0.10	Permeability .06-.6"/hr	0.10	Slopes 2 to 6%	0.50
621:							
Doemill gravelly loam---	30	Limitations		Limitations		Limitations	
		Saturation < 18" depth	1.00	Bedrock depth < 20"	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Fragments >10" >3%	1.00	Saturation < 18" depth	1.00
		Fragments >10" >3%	1.00	Saturation < 12" depth	0.99	Bedrock depth < 20"	1.00
Jokerst very cobbly loam	30	Limitations		Limitations		Limitations	
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Saturation < 18" depth	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Bedrock depth < 20"	1.00
Ultic Haploxeralfs, thermic, gravelly loam	20	Limitations		Limitations		Limitations	
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Fragments >10" >3%	1.00
		Slopes 8 to 15%	0.37	Slopes 8 to 15%	0.37	Fragments >3" 5 to 30%	0.68
622:							
Xerorthents, shallow----	40	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Surface fragments (<3") >25%	1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
622: Typic Haploxeralfs gravelly loam-----	30	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.68	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.68	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
Rock outcrop, mudflow- breccia cliffs-----	15	Not rated		Not rated		Not rated	
623: Xerorthents, shallow----	40	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20" Surface fragments (<3") >25%	1.00 1.00 1.00
Typic Haploxeralfs gravelly loam-----	25	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.68	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.68	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
Rock outcrop, mudflow- breccia cliffs-----	20	Not rated		Not rated		Not rated	
624: Ultic Haploxeralfs, mesic, gravelly loam---	60	Limitations Permeability .06-.6"/hr Fragments >10" .1 to 3%	0.35 0.19	Limitations Permeability .06-.6"/hr Fragments >10" .1 to 3%	0.35 0.19	Limitations Slopes 2 to 6% Permeability .06-.6"/hr Fragments >10" .1 to 3%	0.50 0.35 0.19
Rockstripe very gravelly loam-----	25	Limitations Bedrock depth < 20" Fragments >10" >3% Dusty	1.00 1.00 0.50	Limitations Bedrock depth < 20" Fragments >10" >3% Dusty	1.00 1.00 0.50	Limitations Bedrock depth < 20" Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
625: Ultic Haploxeralfs, mesic, gravelly loam---	50	Limitations Slopes > 15% Permeability .06-.6"/hr Fragments >10" .1 to 3%	1.00 0.35 0.19	Limitations Slopes > 15% Permeability .06-.6"/hr Fragments >10" .1 to 3%	1.00 0.35 0.19	Limitations Slopes > 6% Permeability .06-.6"/hr Fragments >10" .1 to 3%	1.00 0.35 0.19
Rockstripe very gravelly loam-----	35	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20" Surface fragments (<3") >25%	1.00 1.00 1.00
626: Ultic Haploxeralfs gravelly loam-----	40	Limitations Slopes > 15% Fragments >10" .1 to 3% Dusty	1.00 0.76 0.50	Limitations Slopes > 15% Fragments >10" .1 to 3% Dusty	1.00 0.76 0.50	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" .1 to 3%	1.00 1.00 0.76
Rockstripe very gravelly loam-----	35	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20" Surface fragments (<3") >25%	1.00 1.00 1.00
Rock outcrop, mudflow- breccia cliffs-----	15	Not rated		Not rated		Not rated	
627: Ultic Haploxeralfs gravelly loam-----	40	Limitations Slopes > 15% Fragments >10" .1 to 3% Dusty	1.00 0.76 0.50	Limitations Slopes > 15% Fragments >10" .1 to 3% Dusty	1.00 0.76 0.50	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" .1 to 3%	1.00 1.00 0.76

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
627: Rockstripe very gravelly loam-----	35	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20" Surface fragments (<3") >25%	1.00 1.00 1.00
Rock outcrop, mudflow- breccia cliffs-----	15	Not rated		Not rated		Not rated	
628: Rockstripe very gravelly loam-----	40	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20" Surface fragments (<3") >25%	1.00 1.00 1.00
Ultic Haploxeralfs gravelly loam-----	35	Limitations Slopes > 15% Fragments >10" .1 to 3% Dusty	1.00 0.76 0.50	Limitations Slopes > 15% Fragments >10" .1 to 3% Dusty	1.00 0.76 0.50	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" .1 to 3%	1.00 1.00 0.76
Rock outcrop, mudflow- breccia cliffs-----	20	Not rated		Not rated		Not rated	
629: Slideland gravelly loam	80	Limitations Dusty Slopes 8 to 15% Permeability .06-.6"/hr	0.50 0.37 0.20	Limitations Dusty Slopes 8 to 15% Permeability .06-.6"/hr	0.50 0.37 0.20	Limitations Slopes > 6% Surface fragments (<3") >25% Dusty	1.00 1.00 0.50
630: Slideland gravelly loam	80	Limitations Slopes > 15% Dusty Permeability .06-.6"/hr	1.00 0.50 0.20	Limitations Slopes > 15% Dusty Permeability .06-.6"/hr	1.00 0.50 0.20	Limitations Slopes > 6% Surface fragments (<3") >25% Dusty	1.00 1.00 0.50

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
631: Slideland gravelly loam	80	Limitations Slopes > 15% Dusty Permeability .06-.6"/hr	1.00 0.50 0.20	Limitations Slopes > 15% Dusty Permeability .06-.6"/hr	1.00 0.50 0.20	Limitations Slopes > 6% Surface fragments (<3") >25% Dusty	1.00 1.00 0.50
632: Ultic Haploxeralfs, conglomerate, very deep	50	Limitations Slopes 8 to 15% Permeability .06-.6"/hr	0.84 0.10	Limitations Slopes 8 to 15% Permeability .06-.6"/hr	0.84 0.10	Limitations Slopes > 6% Permeability .06-.6"/hr	1.00 0.10
Ultic Haploxeralfs, conglomerate, moderately deep-----	40	Limitations Fragments >10" >3%	1.00	Limitations Fragments >10" >3%	1.00	Limitations Fragments >10" >3% Slopes 2 to 6%	1.00 0.98
633: Ultic Haploxeralfs, conglomerate, very deep	60	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.10	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.10	Limitations Slopes > 6% Permeability .06-.6"/hr	1.00 0.10
Ultic Haploxeralfs, conglomerate, moderately deep-----	30	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 6% Fragments >10" >3%	1.00 1.00
634: Ultic Haploxeralfs, conglomerate, very deep	60	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.10	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.10	Limitations Slopes > 6% Permeability .06-.6"/hr	1.00 0.10
Ultic Haploxeralfs, conglomerate, moderately deep-----	30	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 6% Fragments >10" >3%	1.00 1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
635: Ultic Haploxeralfs, conglomerate, very deep	50	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.10	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.10	Limitations Slopes > 6% Permeability .06-.6"/hr	1.00 0.10
Ultic Haploxeralfs, conglomerate, moderately deep-----	40	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 6% Fragments >10" >3%	1.00 1.00
636: Ultic Haploxeralfs, conglomerate, moderately deep-----	50	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 6% Fragments >10" >3%	1.00 1.00
Ultic Haploxeralfs, conglomerate, very deep	40	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.10	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.10	Limitations Slopes > 6% Permeability .06-.6"/hr	1.00 0.10
637: Ultic Haploxeralfs, sandstone-----	80	Limitations Slopes 8 to 15%	0.01	Limitations Slopes 8 to 15%	0.01	Limitations Slopes > 6%	1.00
638: Ultic Haploxeralfs, sandstone-----	80	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
639: Ultic Haploxeralfs, sandstone-----	75	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
640: Ultic Haploxeralfs, sandstone-----	75	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
641: Ultic Haploxeralfs, sandstone-----	75	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
642: Chinacamp gravelly loam	70	Limitations Fragments >10" >3% Permeability .06-.6"/hr	1.00 0.10	Limitations Fragments >10" >3% Permeability .06-.6"/hr	1.00 0.10	Limitations Fragments >10" >3% Slopes 2 to 6% Permeability .06-.6"/hr	1.00 0.74 0.10
643: Chinacamp gravelly loam	70	Limitations Slopes > 15% Fragments >10" >3% Permeability .06-.6"/hr	1.00 1.00 0.10	Limitations Slopes > 15% Fragments >10" >3% Permeability .06-.6"/hr	1.00 1.00 0.10	Limitations Slopes > 6% Fragments >10" >3% Permeability .06-.6"/hr	1.00 1.00 0.10
644: Chinacamp gravelly loam	70	Limitations Slopes > 15% Fragments >10" >3% Permeability .06-.6"/hr	1.00 1.00 0.10	Limitations Slopes > 15% Fragments >10" >3% Permeability .06-.6"/hr	1.00 1.00 0.10	Limitations Slopes > 6% Fragments >10" >3% Permeability .06-.6"/hr	1.00 1.00 0.10
645: Chinacamp gravelly loam	70	Limitations Slopes > 15% Fragments >10" >3% Permeability .06-.6"/hr	1.00 1.00 0.10	Limitations Slopes > 15% Fragments >10" >3% Permeability .06-.6"/hr	1.00 1.00 0.10	Limitations Slopes > 6% Fragments >10" >3% Permeability .06-.6"/hr	1.00 1.00 0.10
646: Coalcanyon taxadjunct very gravelly loam----	80	Limitations Dusty Permeability .06-.6"/hr	0.50 0.10	Limitations Dusty Permeability .06-.6"/hr	0.50 0.10	Limitations Surface fragments (<3") 10- 25% Fragments >3" 5 to 30% Slopes 2 to 6%	0.94 0.92 0.74
647: Coalcanyon taxadjunct very gravelly loam----	75	Limitations Slopes > 15% Dusty Permeability .06-.6"/hr	1.00 0.50 0.10	Limitations Slopes > 15% Dusty Permeability .06-.6"/hr	1.00 0.50 0.10	Limitations Slopes > 6% Surface fragments (<3") 10- 25% Fragments >3" 5 to 30%	1.00 0.94 0.92

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
648: Coalcanyon taxadjunct very gravelly loam-----	80	Limitations Slopes > 15% Dusty Permeability .06-.6"/hr	1.00 0.50 0.10	Limitations Slopes > 15% Dusty Permeability .06-.6"/hr	1.00 0.50 0.10	Limitations Slopes > 6% Surface fragments (<3") 10-25% Fragments >3" 5 to 30%	1.00 0.94 0.92
649: Coalcanyon taxadjunct very gravelly loam-----	75	Limitations Slopes > 15% Dusty Permeability .06-.6"/hr	1.00 0.50 0.10	Limitations Slopes > 15% Dusty Permeability .06-.6"/hr	1.00 0.50 0.10	Limitations Slopes > 6% Surface fragments (<3") 10-25% Fragments >3" 5 to 30%	1.00 0.94 0.92
650: Schott very gravelly loam-----	65	Limitations Very dusty Fragments >10" >3%	1.00 1.00	Limitations Very dusty Fragments >10" >3%	1.00 1.00	Limitations Very dusty Fragments >10" >3% Slopes 2 to 6%	1.00 1.00 0.74
651: Schott very gravelly loam-----	65	Limitations Slopes > 15% Very dusty Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Very dusty Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Very dusty Fragments >10" >3%	1.00 1.00 1.00
652: Schott very gravelly loam-----	65	Limitations Slopes > 15% Very dusty Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Very dusty Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Very dusty Fragments >10" >3%	1.00 1.00 1.00
Rock outcrop, mudflow breccia-----	20	Not rated		Not rated		Not rated	

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
654: Coridge bouldery loam---	70	Limitations Fragments >10" >3% Saturation from 18 to 30" depth Dusty	1.00 0.90 0.50	Limitations Fragments >10" >3% Saturation from 12 to 30" depth Dusty	1.00 0.60 0.50	Limitations Fragments >10" >3% Slopes > 6% Saturation from 18 to 30" depth	1.00 1.00 0.90
Rock outcrop, Cohasset basalt-----	20	Not rated		Not rated		Not rated	
655: Coridge bouldery loam---	70	Limitations Fragments >10" >3% Dusty Saturation from 18 to 30" depth	1.00 0.50 0.44	Limitations Fragments >10" >3% Dusty Permeability .06-.6"/hr	1.00 0.50 0.35	Limitations Slopes > 6% Fragments >10" >3% Dusty	1.00 1.00 0.50
Rock outcrop, Cohasset basalt-----	20	Not rated		Not rated		Not rated	
656: Rock outcrop, basalt cliffs-----	40	Not rated		Not rated		Not rated	
Coalcanyon taxadjunct very gravelly loam----	40	Limitations Slopes > 15% Dusty Permeability .06-.6"/hr	1.00 0.50 0.10	Limitations Slopes > 15% Dusty Permeability .06-.6"/hr	1.00 0.50 0.10	Limitations Slopes > 6% Surface fragments (<3") 10- 25% Fragments >3" 5 to 30%	1.00 0.94 0.92
657: Bonneyridge sandy loam--	35	No limitations		No limitations		Limitations Slopes > 6%	1.00
Chawanakee gravelly sandy loam-----	30	Limitations Bedrock depth < 20"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations Bedrock depth < 20" Slopes > 6%	1.00 1.00
Rock outcrop, quartz diorite-----	20	Not rated		Not rated		Not rated	

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
658:							
Bonneyr ridge sandy loam--	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
Chawanakee gravelly sandy loam-----	30	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20"	1.00 1.00
Rock outcrop, quartz diorite-----	25	Not rated		Not rated		Not rated	
659:							
Bonneyr ridge sandy loam--	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
Chawanakee gravelly sandy loam-----	30	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20"	1.00 1.00
Rock outcrop, quartz diorite-----	25	Not rated		Not rated		Not rated	
660:							
Bonneyr ridge sandy loam--	30	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
Chawanakee gravelly sandy loam-----	30	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20"	1.00 1.00
Rock outcrop, quartz diorite-----	30	Not rated		Not rated		Not rated	
661:							
Millerridge gravelly sandy clay loam-----	45	Limitations Permeability .06-.6"/hr	0.35	Limitations Permeability .06-.6"/hr	0.35	Limitations Slopes 2 to 6% Fragments >3" 5 to 30% Permeability .06-.6"/hr	0.74 0.68 0.35

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
661: Boxrobber cobbly sandy clay loam-----	40	Limitations Bedrock depth < 20" Fragments >10" >3% Permeability .06-.6"/hr	1.00 1.00 0.10	Limitations Bedrock depth < 20" Fragments >10" >3% Permeability .06-.6"/hr	1.00 1.00 0.10	Limitations Bedrock depth < 20" Fragments >10" >3% Fragments >3" 5 to 30%	1.00 1.00 0.92
662: Millerridge gravelly sandy clay loam-----	45	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.35	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.35	Limitations Slopes > 6% Fragments >3" 5 to 30% Permeability .06-.6"/hr	1.00 0.68 0.35
Boxrobber cobbly sandy clay loam-----	40	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00
663: Millerridge gravelly sandy clay loam-----	45	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.35	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.35	Limitations Slopes > 6% Fragments >3" 5 to 30% Permeability .06-.6"/hr	1.00 0.68 0.35
Boxrobber cobbly sandy clay loam-----	40	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00
664: Millerridge gravelly sandy clay loam-----	45	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.35	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.35	Limitations Slopes > 6% Fragments >3" 5 to 30% Permeability .06-.6"/hr	1.00 0.68 0.35
Boxrobber cobbly sandy clay loam-----	40	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
665: Surnuf gravelly loam----	40	Limitations Permeability .06-.6"/hr Slopes 8 to 15%	0.35 0.01	Limitations Permeability .06-.6"/hr Slopes 8 to 15%	0.35 0.01	Limitations Slopes > 6% Permeability .06-.6"/hr	1.00 0.35
Bigridge loam-----	40	Limitations Slopes 8 to 15%	0.01	Limitations Slopes 8 to 15%	0.01	Limitations Slopes > 6%	1.00
666: Surnuf gravelly loam----	40	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.35	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.35	Limitations Slopes > 6% Permeability .06-.6"/hr	1.00 0.35
Bigridge loam-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
667: Surnuf gravelly loam----	40	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.35	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.35	Limitations Slopes > 6% Permeability .06-.6"/hr	1.00 0.35
Bigridge loam-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
668: Surnuf gravelly loam----	40	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.35	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.35	Limitations Slopes > 6% Permeability .06-.6"/hr	1.00 0.35
Bigridge loam-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
669: Oroshore gravelly loam--	35	Limitations Dusty Permeability .06-.6"/hr Fragments >10" .1 to 3%	0.50 0.28 0.19	Limitations Dusty Permeability .06-.6"/hr Fragments >10" .1 to 3%	0.50 0.28 0.19	Limitations Slopes > 6% Surface fragments (<3") >25% Dusty	1.00 1.00 0.50
Mounthope loam-----	25	Limitations Fragments >10" >3% Slopes 8 to 15%	1.00 0.01	Limitations Fragments >10" >3% Slopes 8 to 15%	1.00 0.01	Limitations Slopes > 6% Fragments >10" >3%	1.00 1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
669: Dunstone gravelly loam--	20	Limitations Bedrock depth < 20" Dusty Fragments (<3") 25-50%	1.00 0.50 0.08	Limitations Bedrock depth < 20" Dusty Fragments (<3") 25-50%	1.00 0.50 0.08	Limitations Bedrock depth < 20" Slopes > 6% Surface fragments (<3") >25%	1.00 1.00 1.00
670: Oroshore gravelly loam--	35	Limitations Slopes > 15% Dusty Permeability .06-.6"/hr	1.00 0.50 0.28	Limitations Slopes > 15% Dusty Permeability .06-.6"/hr	1.00 0.50 0.28	Limitations Slopes > 6% Surface fragments (<3") >25% Dusty	1.00 1.00 0.50
Mounthope loam-----	25	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 6% Fragments >10" >3%	1.00 1.00
Dunstone gravelly loam--	20	Limitations Slopes > 15% Bedrock depth < 20" Dusty	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth < 20" Dusty	1.00 1.00 0.50	Limitations Slopes > 6% Bedrock depth < 20" Surface fragments (<3") >25%	1.00 1.00 1.00
671: Oroshore gravelly loam--	35	Limitations Slopes > 15% Dusty Permeability .06-.6"/hr	1.00 0.50 0.28	Limitations Slopes > 15% Dusty Permeability .06-.6"/hr	1.00 0.50 0.28	Limitations Slopes > 6% Surface fragments (<3") >25% Dusty	1.00 1.00 0.50
Mounthope loam-----	25	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 6% Fragments >10" >3%	1.00 1.00
Dunstone gravelly loam--	20	Limitations Slopes > 15% Bedrock depth < 20" Dusty	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth < 20" Dusty	1.00 1.00 0.50	Limitations Slopes > 6% Bedrock depth < 20" Surface fragments (<3") >25%	1.00 1.00 1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
672:							
Oroshore gravelly loam--	30	Limitations Slopes > 15% Dusty Permeability .06-.6"/hr	1.00 0.50 0.28	Limitations Slopes > 15% Dusty Permeability .06-.6"/hr	1.00 0.50 0.28	Limitations Slopes > 6% Surface fragments (<3") >25% Dusty	1.00 1.00 0.50
Mounthope loam-----	25	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 6% Fragments >10" >3%	1.00 1.00
Dunstone gravelly loam--	25	Limitations Slopes > 15% Bedrock depth < 20" Dusty	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth < 20" Dusty	1.00 1.00 0.50	Limitations Slopes > 6% Bedrock depth < 20" Surface fragments (<3") >25%	1.00 1.00 1.00
674:							
Chawanakee gravelly sandy loam-----	30	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20"	1.00 1.00
Bonneyridge sandy loam--	30	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
Rock outcrop, quartz diorite-----	30	Not rated		Not rated		Not rated	
675:							
Clearhayes sandy clay loam-----	70	Limitations Flooding >= rare Saturation from 18 to 30" depth Permeability .06-.6"/hr	1.00 0.95 0.10	Limitations Saturation from 12 to 30" depth Permeability .06-.6"/hr	0.68 0.10	Limitations Saturation from 18 to 30" depth Occasional flooding Permeability .06-.6"/hr	0.95 0.50 0.10
Hamslough clay-----	15	Limitations Saturation < 18" depth Flooding >= rare Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Saturation < 18" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
676:							
Carhart clay-----	50	Limitations		Limitations		Limitations	
		Saturation < 18" depth	1.00	Ponding (any duration)	1.00	Saturation < 18" depth	1.00
		Ponding (any duration)	1.00	Surface clay >= 40%	1.00	Ponding (any duration)	1.00
		Surface clay >= 40%	1.00	Saturation from 12 to 30" depth	0.90	Surface clay >= 40%	1.00
Anita taxadjunct clay---	40	Limitations		Limitations		Limitations	
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation < 18" depth	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
677:							
Tuscan gravelly loam----	40	Limitations		Limitations		Limitations	
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation < 18" depth	1.00
		Depth to pan <= 20"	1.00	Depth to pan <= 20"	1.00	Surface fragments (<3")	1.00
		Dusty	0.50	Dusty	0.50	>25%	
						Dusty	0.50
Fallager loam-----	25	Limitations		Limitations		Limitations	
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation < 18" depth	1.00
		Depth to pan <= 20"	1.00	Depth to pan <= 20"	1.00	Ponding (any duration)	1.00
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Dusty	0.50
Anita, gravelly duripan	15	Limitations		Limitations		Limitations	
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation < 18" depth	1.00
		Depth to pan <= 20"	1.00	Depth to pan <= 20"	1.00	Ponding (any duration)	1.00
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Surface clay >= 40%	1.00
679:							
Lucksev loam-----	40	Limitations		Limitations		Limitations	
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation < 18" depth	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Butteside gravelly loam	35	Limitations		Limitations		Limitations	
		Dusty	0.50	Dusty	0.50	Slopes > 6%	1.00
		Permeability .06-.6"/hr	0.49	Permeability .06-.6"/hr	0.49	Surface fragments (<3")	1.00
						>25%	
						Dusty	0.50

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
679: Carhart clay-----	15	Limitations Saturation < 18" depth Surface clay >= 40% Permeability .06-.6"/hr	1.00 1.00 0.50	Limitations Surface clay >= 40% Saturation from 12 to 30" depth Permeability .06-.6"/hr	1.00 0.90 0.50	Limitations Saturation < 18" depth Surface clay >= 40% Slopes 2 to 6%	1.00 1.00 0.74
680: Lucksev loam-----	45	Limitations Slopes > 15% Bedrock depth < 20" Dusty	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth < 20" Dusty	1.00 1.00 0.50	Limitations Slopes > 6% Bedrock depth < 20" Dusty	1.00 1.00 0.50
Butteside gravelly loam	40	Limitations Slopes > 15% Fragments >10" .1 to 3% Dusty	1.00 0.76 0.50	Limitations Slopes > 15% Fragments >10" .1 to 3% Dusty	1.00 0.76 0.50	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" .1 to 3%	1.00 1.00 0.76
683: Typic Haploxeralfs, magnesian, low elevation	50	Limitations Fragments >10" >3% Fragments (<3") > 50% Dusty	1.00 0.99 0.50	Limitations Fragments >10" >3% Fragments (<3") > 50% Dusty	1.00 0.99 0.50	Limitations Surface fragments (<3") >25% Slopes > 6% Fragments >10" >3%	1.00 1.00 1.00 1.00
Earlal very gravelly loam-----	20	Limitations Bedrock depth < 20" Fragments >10" >3% Dusty	1.00 1.00 0.50	Limitations Bedrock depth < 20" Fragments >10" >3% Dusty	1.00 1.00 0.50	Limitations Bedrock depth < 20" Fragments >10" >3% Slopes > 6%	1.00 1.00 1.00
Rock outcrop, serpentinite-----	15	Not rated		Not rated		Not rated	
684: Typic Haploxeralfs, magnesian, low elevation	50	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") > 50%	1.00 1.00 0.99	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") > 50%	1.00 1.00 0.99	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00 1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
684: Earlal very gravelly loam-----	20	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00
Rock outcrop, serpentinite-----	15	Not rated		Not rated		Not rated	
685: Bosquejo taxadjunct, gravelly substratum----	70	Limitations Flooding >= rare Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Ponding (any duration) Surface clay >= 40% Permeability .06-.6"/hr	1.00 1.00 0.50	Limitations Ponding (any duration) Surface clay >= 40% Permeability .06-.6"/hr	1.00 1.00 0.50
686: Redsluff taxadjunct clay loam-----	70	Limitations Flooding >= rare Permeability .06-.6"/hr	1.00 0.35	Limitations Permeability .06-.6"/hr	0.35	Limitations Permeability .06-.6"/hr Surface fragments (<3") 10- 25%	0.35 0.08
687: Xerorthents, shallow----	45	Limitations Bedrock depth < 20" Fragments >10" >3% Permeability .06-.6"/hr	1.00 1.00 0.10	Limitations Bedrock depth < 20" Fragments >10" >3% Permeability .06-.6"/hr	1.00 1.00 0.10	Limitations Bedrock depth < 20" Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
Typic Haploxeralfs gravelly loam-----	40	Limitations Fragments >10" >3% Fragments (<3") 25-50% Slopes 8 to 15%	1.00 0.68 0.63	Limitations Fragments >10" >3% Fragments (<3") 25-50% Slopes 8 to 15%	1.00 0.68 0.63	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
700: Retsongulch very gravelly sandy loam----	40	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 6% Fragments >10" >3% Bedrock 20-40" and slope > 2%	1.00 1.00 0.50
Flumewall gravelly sandy loam-----	25	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00
701: Powellton gravelly loam	40	Limitations Slopes > 15% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.15	Limitations Slopes > 15% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.15	Limitations Slopes > 6% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.15
Obstruction gravelly sandy loam-----	30	Limitations Slopes > 15% Very dusty Organic surface layer >= 4" thick	1.00 1.00 1.00	Limitations Slopes > 15% Very dusty Organic surface layer >= 4" thick	1.00 1.00 1.00	Limitations Slopes > 6% Very dusty Organic surface layer >= 4" thick	1.00 1.00 1.00
702: Cerpone gravelly loam---	50	Limitations Slopes 8 to 15% Permeability .06-.6"/hr	0.37 0.10	Limitations Slopes 8 to 15% Permeability .06-.6"/hr	0.37 0.10	Limitations Slopes > 6% Permeability .06-.6"/hr	1.00 0.10
Typic Haploxeralfs, magnesian, very gravelly loam-----	20	Limitations Fragments >10" >3% Fragments (<3") 25-50% Dusty	1.00 0.56 0.50	Limitations Fragments >10" >3% Fragments (<3") 25-50% Dusty	1.00 0.56 0.50	Limitations Surface fragments (<3") >25% Slopes > 6% Fragments >10" >3%	1.00 1.00 1.00
Earlal very gravelly loam-----	15	Limitations Bedrock depth < 20" Fragments >10" >3% Dusty	1.00 1.00 0.50	Limitations Bedrock depth < 20" Fragments >10" >3% Dusty	1.00 1.00 0.50	Limitations Bedrock depth < 20" Fragments >10" >3% Slopes > 6%	1.00 1.00 1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
703:							
Cerpone gravelly loam---	30	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.10	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.10	Limitations Slopes > 6% Permeability .06-.6"/hr	1.00 0.10
Typic Haploxeralfs, magnesian, very gravelly loam-----	30	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.56	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.56	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
Earlal very gravelly loam-----	15	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00
Rock outcrop, serpentinite-----	15	Not rated		Not rated		Not rated	
704:							
Typic Haploxeralfs, magnesian, very gravelly loam-----	40	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.56	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.56	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
Earlal very gravelly loam-----	20	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00
Cerpone gravelly loam---	15	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.10	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.10	Limitations Slopes > 6% Permeability .06-.6"/hr	1.00 0.10
Rock outcrop, serpentinite-----	15	Not rated		Not rated		Not rated	

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
705: Typic Haploxeralfs, magnesian, very gravelly loam-----	35	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.56	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.56	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
Earlal very gravelly loam-----	25	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00
Cerpone gravelly loam---	15	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.10	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.10	Limitations Slopes > 6% Permeability .06-.6"/hr	1.00 0.10
Rock outcrop, serpentinite-----	15	Not rated		Not rated		Not rated	
711: Dixmine very gravelly loam-----	45	Limitations Permeability .06-.6"/hr Slopes 8 to 15%	0.10 0.01	Limitations Permeability .06-.6"/hr Slopes 8 to 15%	0.10 0.01	Limitations Slopes > 6% Permeability .06-.6"/hr	1.00 0.10
Toadtown loam-----	40	Limitations Very dusty Permeability .06-.6"/hr Slopes 8 to 15%	1.00 0.55 0.01	Limitations Very dusty Permeability .06-.6"/hr Slopes 8 to 15%	1.00 0.55 0.01	Limitations Very dusty Slopes > 6% Permeability .06-.6"/hr	1.00 1.00 0.55
712: Dixmine very gravelly loam-----	50	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.10	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.10	Limitations Slopes > 6% Permeability .06-.6"/hr	1.00 0.10
Toadtown loam-----	40	Limitations Slopes > 15% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.55	Limitations Slopes > 15% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.55	Limitations Slopes > 6% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.55

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
713: Dixmine very gravelly loam-----	50	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.10	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.10	Limitations Slopes > 6% Permeability .06-.6"/hr	1.00 0.10
Toadtown loam-----	35	Limitations Slopes > 15% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.55	Limitations Slopes > 15% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.55	Limitations Slopes > 6% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.55
714: Dixmine very gravelly loam-----	50	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.10	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.10	Limitations Slopes > 6% Permeability .06-.6"/hr	1.00 0.10
Toadtown loam-----	35	Limitations Slopes > 15% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.55	Limitations Slopes > 15% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.55	Limitations Slopes > 6% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.55
715: Logtrain gravelly loam--	40	Limitations Slopes > 15% Fragments >10" .1 to 3%	1.00 0.19	Limitations Slopes > 15% Fragments >10" .1 to 3%	1.00 0.19	Limitations Slopes > 6% Fragments >10" .1 to 3%	1.00 0.19
Bottlehill very gravelly loam-----	30	Limitations Slopes > 15% Fragments >10" .1 to 3%	1.00 0.76	Limitations Slopes > 15% Fragments >10" .1 to 3%	1.00 0.76	Limitations Slopes > 6% Fragments >10" .1 to 3% Bedrock 20-40" and slope > 2%	1.00 0.76 0.50
Walkermine very gravelly loam-----	20	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
716: Griffgulch very gravelly silt loam-----	40	Limitations Permeability .06-.6"/hr Fragments >10" .1 to 3%	0.44 0.19	Limitations Permeability .06-.6"/hr Fragments >10" .1 to 3%	0.44 0.19	Limitations Slopes > 6% Permeability .06-.6"/hr Fragments >10" .1 to 3%	1.00 0.44 0.19
Surnuf gravelly loam----	40	Limitations Permeability .06-.6"/hr Slopes 8 to 15%	0.35 0.01	Limitations Permeability .06-.6"/hr Slopes 8 to 15%	0.35 0.01	Limitations Slopes > 6% Permeability .06-.6"/hr	1.00 0.35
717: Griffgulch very gravelly silt loam-----	40	Limitations Slopes > 15% Permeability .06-.6"/hr Fragments >10" .1 to 3%	1.00 0.44 0.19	Limitations Slopes > 15% Permeability .06-.6"/hr Fragments >10" .1 to 3%	1.00 0.44 0.19	Limitations Slopes > 6% Permeability .06-.6"/hr Fragments >10" .1 to 3%	1.00 0.44 0.19
Surnuf gravelly loam----	40	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.35	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.35	Limitations Slopes > 6% Permeability .06-.6"/hr	1.00 0.35
718: Griffgulch very gravelly silt loam-----	35	Limitations Slopes > 15% Permeability .06-.6"/hr Fragments >10" .1 to 3%	1.00 0.44 0.19	Limitations Slopes > 15% Permeability .06-.6"/hr Fragments >10" .1 to 3%	1.00 0.44 0.19	Limitations Slopes > 6% Permeability .06-.6"/hr Fragments >10" .1 to 3%	1.00 0.44 0.19
Surnuf gravelly loam----	35	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.35	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.35	Limitations Slopes > 6% Permeability .06-.6"/hr	1.00 0.35
Spine taxadjunct very cobble loam-----	15	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
719: Griffgulch very gravelly silt loam-----	35	Limitations Slopes > 15% Permeability .06-.6"/hr Fragments >10" .1 to 3%	1.00 0.44 0.19	Limitations Slopes > 15% Permeability .06-.6"/hr Fragments >10" .1 to 3%	1.00 0.44 0.19	Limitations Slopes > 6% Permeability .06-.6"/hr Fragments >10" .1 to 3%	1.00 0.44 0.19
Surnuf gravelly loam----	30	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.35	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.35	Limitations Slopes > 6% Permeability .06-.6"/hr	1.00 0.35
Spine taxadjunct very cobble loam-----	20	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00
720: Dystroxerepts extremely gravelly loam-----	40	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 6% Fragments >10" >3% Bedrock 20-40" and slope > 2%	1.00 1.00 0.50
Haploxeralfs very gravelly loam-----	30	Limitations Slopes > 15% Fragments >10" >3% Permeability .06-.6"/hr	1.00 1.00 0.10	Limitations Slopes > 15% Fragments >10" >3% Permeability .06-.6"/hr	1.00 1.00 0.10	Limitations Slopes > 6% Fragments >10" >3% Permeability .06-.6"/hr	1.00 1.00 0.10
Rock outcrop, metavolcanic-----	15	Not rated		Not rated		Not rated	
721: Haploxerands, granitic till, medial sandy loam	70	Limitations Very dusty Fragments >10" >3% Slopes 8 to 15%	1.00 1.00 0.96	Limitations Very dusty Fragments >10" >3% Slopes 8 to 15%	1.00 1.00 0.96	Limitations Very dusty Fragments >10" >3% Slopes > 6%	1.00 1.00 1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
722: Haploxerands, granitic till, medial sandy loam	70	Limitations Slopes > 15% Very dusty Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Very dusty Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Very dusty Fragments >10" >3%	1.00 1.00 1.00
723: Haploxerands, granitic till, medial sandy loam	70	Limitations Slopes > 15% Very dusty Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Very dusty Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Very dusty Fragments >10" >3%	1.00 1.00 1.00
724: Haploxerands, volcanic till, cobbly medial sandy loam-----	75	Limitations Very dusty Fragments >10" >3% Slopes 8 to 15%	1.00 1.00 0.16	Limitations Very dusty Fragments >10" >3% Slopes 8 to 15%	1.00 1.00 0.16	Limitations Very dusty Fragments >10" >3% Slopes > 6%	1.00 1.00 1.00
725: Haploxerands, volcanic till, cobbly medial sandy loam-----	75	Limitations Slopes > 15% Very dusty Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Very dusty Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Very dusty Fragments >10" >3%	1.00 1.00 1.00
726: Haploxerands, volcanic till, cobbly medial sandy loam-----	75	Limitations Slopes > 15% Very dusty Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Very dusty Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Very dusty Fragments >10" >3%	1.00 1.00 1.00
727: Bonneyridge sandy loam--	85	No limitations		No limitations		Limitations Slopes 2 to 6%	0.74
728: Bonneyridge sandy loam--	85	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
729: Bonneyridge sandy loam--	85	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
730: Tusccoll gravelly loam--	60	Limitations Slopes > 15% Very dusty Fragments >10" .1 to 3%	1.00 1.00 0.76	Limitations Slopes > 15% Very dusty Fragments >10" .1 to 3%	1.00 1.00 0.76	Limitations Slopes > 6% Very dusty Fragments >10" .1 to 3%	1.00 1.00 0.76
Schott very gravelly loam-----	25	Limitations Slopes > 15% Very dusty Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Very dusty Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Very dusty Fragments >10" >3%	1.00 1.00 1.00
731: Tusccoll gravelly loam--	50	Limitations Slopes > 15% Very dusty Fragments >10" .1 to 3%	1.00 1.00 0.76	Limitations Slopes > 15% Very dusty Fragments >10" .1 to 3%	1.00 1.00 0.76	Limitations Slopes > 6% Very dusty Fragments >10" .1 to 3%	1.00 1.00 0.76
Schott very gravelly loam-----	35	Limitations Slopes > 15% Very dusty Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Very dusty Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Very dusty Fragments >10" >3%	1.00 1.00 1.00
732: Bonpile taxadjunct, duripan substratum----	90	Limitations Very dusty Fragments >10" >3%	1.00 1.00	Limitations Very dusty Fragments >10" >3%	1.00 1.00	Limitations Very dusty Fragments >10" >3% Slopes 2 to 6%	1.00 1.00 0.02
733: Haploxeralfs, terrace, gravelly loam-----	75	Limitations Dusty Fragments (<3") 25-50% Permeability .06-.6"/hr	0.50 0.39 0.10	Limitations Dusty Fragments (<3") 25-50% Permeability .06-.6"/hr	0.50 0.39 0.10	Limitations Surface fragments (<3") >25% Dusty Permeability .06-.6"/hr	1.00 0.50 0.10

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
734: Haploxerands medial sandy loam-----	55	Limitations Very dusty Slopes > 15%	1.00 1.00	Limitations Very dusty Slopes > 15%	1.00 1.00	Limitations Very dusty Slopes > 6%	1.00 1.00
Aquic Xerofluvents peaty very fine sandy loam-----	35	Limitations Saturation < 18" depth Flooding >= rare Dusty	1.00 1.00 0.50	Limitations Saturation < 12" depth Frequent flooding Dusty	1.00 0.50 0.50	Limitations Saturation < 18" depth Flooding > occasional Slopes 2 to 6%	1.00 1.00 0.50
735: Fluvaquents, loamy-----	80	Limitations Saturation < 18" depth Flooding >= rare	1.00 1.00	Limitations Saturation < 12" depth	1.00	Limitations Saturation < 18" depth	1.00
801: Obstruction gravelly sandy loam-----	70	Limitations Very dusty Organic surface layer >= 4" thick Slopes 8 to 15%	1.00 1.00 0.16	Limitations Very dusty Organic surface layer >= 4" thick Slopes 8 to 15%	1.00 1.00 0.16	Limitations Very dusty Organic surface layer >= 4" thick Slopes > 6%	1.00 1.00 1.00
802: Obskel very gravelly sandy loam-----	40	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 6% Very dusty	1.00 1.00
Obstruction gravelly sandy loam-----	40	Limitations Slopes > 15% Very dusty Organic surface layer >= 4" thick	1.00 1.00 1.00	Limitations Slopes > 15% Very dusty Organic surface layer >= 4" thick	1.00 1.00 1.00	Limitations Slopes > 6% Very dusty Organic surface layer >= 4" thick	1.00 1.00 1.00
803: Obskel very gravelly sandy loam-----	40	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 6% Very dusty	1.00 1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
803: Obstruction gravelly sandy loam-----	40	Limitations Slopes > 15% Very dusty Organic surface layer >= 4" thick	1.00 1.00 1.00	Limitations Slopes > 15% Very dusty Organic surface layer >= 4" thick	1.00 1.00 1.00	Limitations Slopes > 6% Very dusty Organic surface layer >= 4" thick	1.00 1.00 1.00
804: Obskel very gravelly sandy loam-----	35	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 6% Very dusty	1.00 1.00
Obstruction gravelly sandy loam-----	25	Limitations Slopes > 15% Very dusty Organic surface layer >= 4" thick	1.00 1.00 1.00	Limitations Slopes > 15% Very dusty Organic surface layer >= 4" thick	1.00 1.00 1.00	Limitations Slopes > 6% Very dusty Organic surface layer >= 4" thick	1.00 1.00 1.00
Retsongulch very gravelly sandy loam----	20	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 6% Fragments >10" >3% Bedrock 20-40" and slope > 2%	1.00 1.00 0.50
805: Bottlehill very gravelly loam-----	50	Limitations Fragments >10" .1 to 3%	0.76	Limitations Fragments >10" .1 to 3%	0.76	Limitations Slopes > 6% Fragments >10" .1 to 3% Bedrock 20-40" and slope > 2%	1.00 0.76 0.50
Walkermine very gravelly loam-----	20	Limitations Bedrock depth < 20" Fragments >10" >3% Slopes 8 to 15%	1.00 1.00 0.84	Limitations Bedrock depth < 20" Fragments >10" >3% Slopes 8 to 15%	1.00 1.00 0.84	Limitations Bedrock depth < 20" Slopes > 6% Fragments >10" >3%	1.00 1.00 1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
805: Logtrain gravelly loam--	20	Limitations Fragments >10" .1 to 3%	0.19	Limitations Fragments >10" .1 to 3%	0.19	Limitations Slopes > 6% Fragments >10" .1 to 3%	1.00 0.19
806: Bottlehill very gravelly loam-----	50	Limitations Slopes > 15% Fragments >10" .1 to 3%	1.00 0.76	Limitations Slopes > 15% Fragments >10" .1 to 3%	1.00 0.76	Limitations Slopes > 6% Fragments >10" .1 to 3% Bedrock 20-40" and slope > 2%	1.00 0.76 0.50
Walkermine very gravelly loam-----	20	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00
Logtrain gravelly loam--	20	Limitations Slopes > 15% Fragments >10" .1 to 3%	1.00 0.19	Limitations Slopes > 15% Fragments >10" .1 to 3%	1.00 0.19	Limitations Slopes > 6% Fragments >10" .1 to 3%	1.00 0.19
807: Bottlehill very gravelly loam-----	35	Limitations Slopes > 15% Fragments >10" .1 to 3%	1.00 0.76	Limitations Slopes > 15% Fragments >10" .1 to 3%	1.00 0.76	Limitations Slopes > 6% Fragments >10" .1 to 3% Bedrock 20-40" and slope > 2%	1.00 0.76 0.50
Logtrain gravelly loam--	30	Limitations Slopes > 15% Fragments >10" .1 to 3%	1.00 0.19	Limitations Slopes > 15% Fragments >10" .1 to 3%	1.00 0.19	Limitations Slopes > 6% Fragments >10" .1 to 3%	1.00 0.19
Walkermine very gravelly loam-----	25	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
808: Bottlehill very gravelly loam-----	45	Limitations Slopes > 15% Fragments >10" .1 to 3%	1.00 0.76	Limitations Slopes > 15% Fragments >10" .1 to 3%	1.00 0.76	Limitations Slopes > 6% Fragments >10" .1 to 3% Bedrock 20-40" and slope > 2%	1.00 0.76 0.50
Walkermine very gravelly loam-----	20	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00
Logtrain gravelly loam--	20	Limitations Slopes > 15% Fragments >10" .1 to 3%	1.00 0.19	Limitations Slopes > 15% Fragments >10" .1 to 3%	1.00 0.19	Limitations Slopes > 6% Fragments >10" .1 to 3%	1.00 0.19
809: Walkermine very gravelly loam-----	45	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00
Bottlehill very gravelly loam-----	15	Limitations Slopes > 15% Fragments >10" .1 to 3%	1.00 0.76	Limitations Slopes > 15% Fragments >10" .1 to 3%	1.00 0.76	Limitations Slopes > 6% Fragments >10" .1 to 3% Bedrock 20-40" and slope > 2%	1.00 0.76 0.50
Logtrain gravelly loam--	15	Limitations Slopes > 15% Fragments >10" .1 to 3%	1.00 0.19	Limitations Slopes > 15% Fragments >10" .1 to 3%	1.00 0.19	Limitations Slopes > 6% Fragments >10" .1 to 3%	1.00 0.19
Rock outcrop, metavolcanic-----	15	Not rated		Not rated		Not rated	

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
810:							
Dixmine very gravelly loam-----	35	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Permeability .06-.6"/hr	0.10	Permeability .06-.6"/hr	0.10	Permeability .06-.6"/hr	0.10
Mac gravelly loam-----	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Spine very gravelly loam-----	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
811:							
Powellton gravelly loam	50	Limitations		Limitations		Limitations	
		Very dusty	1.00	Very dusty	1.00	Very dusty	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Permeability .06-.6"/hr	0.15	Permeability .06-.6"/hr	0.15	Permeability .06-.6"/hr	0.15
Toadtown loam-----	40	Limitations		Limitations		Limitations	
		Very dusty	1.00	Very dusty	1.00	Very dusty	1.00
		Permeability .06-.6"/hr	0.55	Permeability .06-.6"/hr	0.55	Slopes > 6%	1.00
						Permeability .06-.6"/hr	0.55
812:							
Powellton gravelly loam	50	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Very dusty	1.00	Very dusty	1.00	Very dusty	1.00
		Permeability .06-.6"/hr	0.15	Permeability .06-.6"/hr	0.15	Permeability .06-.6"/hr	0.15
Toadtown loam-----	40	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Very dusty	1.00	Very dusty	1.00	Very dusty	1.00
		Permeability .06-.6"/hr	0.55	Permeability .06-.6"/hr	0.55	Permeability .06-.6"/hr	0.55
813:							
Powellton gravelly loam	50	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Very dusty	1.00	Very dusty	1.00	Very dusty	1.00
		Permeability .06-.6"/hr	0.15	Permeability .06-.6"/hr	0.15	Permeability .06-.6"/hr	0.15

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
813: Toadtown loam-----	40	Limitations Slopes > 15% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.55	Limitations Slopes > 15% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.55	Limitations Slopes > 6% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.55
814: Mountyana gravelly loam	80	Limitations Very dusty Permeability .06-.6"/hr Slopes 8 to 15%	1.00 0.60 0.16	Limitations Very dusty Permeability .06-.6"/hr Slopes 8 to 15%	1.00 0.60 0.16	Limitations Very dusty Slopes > 6% Permeability .06-.6"/hr	1.00 1.00 0.60
815: Mountyana gravelly loam	80	Limitations Slopes > 15% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.60	Limitations Slopes > 15% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.60	Limitations Slopes > 6% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.60
817: Lydon very gravelly medial coarse sandy loam-----	80	Limitations Very dusty	1.00	Limitations Very dusty	1.00	Limitations Very dusty Slopes 2 to 6% Bedrock 20-40" and slope > 2%	1.00 0.74 0.50
818: Lydon very gravelly medial coarse sandy loam-----	75	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 6% Very dusty Bedrock 20-40" and slope > 2%	1.00 1.00 0.50
819: Lydon very gravelly medial coarse sandy loam-----	65	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 6% Very dusty Bedrock 20-40" and slope > 2%	1.00 1.00 0.50

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
819: Rock outcrop, mudflow breccia-----	20	Not rated		Not rated		Not rated	
820: Lydon very gravelly medial coarse sandy loam-----	60	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 6% Very dusty Bedrock 20-40" and slope > 2%	1.00 1.00 0.50
Rock outcrop, mudflow breccia-----	25	Not rated		Not rated		Not rated	
821: Lydon very gravelly medial coarse sandy loam-----	55	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 6% Very dusty Bedrock 20-40" and slope > 2%	1.00 1.00 0.50
Rock outcrop, mudflow breccia-----	30	Not rated		Not rated		Not rated	
822: Bonpile gravelly medial loam-----	85	Limitations Very dusty Fragments >10" >3%	1.00 1.00	Limitations Very dusty Fragments >10" >3%	1.00 1.00	Limitations Very dusty Fragments >10" >3% Slopes 2 to 6%	1.00 1.00 0.74
823: Bonpile gravelly medial loam-----	85	Limitations Slopes > 15% Very dusty Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Very dusty Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Very dusty Fragments >10" >3%	1.00 1.00 1.00
824: Beecee very gravelly medial loam-----	85	Limitations Slopes > 15% Very dusty Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Very dusty Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Very dusty Fragments >10" >3%	1.00 1.00 1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
825: Beecee very gravelly medial loam-----	60	Limitations Slopes > 15% Very dusty Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Very dusty Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Very dusty Fragments >10" >3%	1.00 1.00 1.00
Lydon very gravelly medial coarse sandy loam-----	20	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 6% Very dusty Bedrock 20-40" and slope > 2%	1.00 1.00 0.50
826: Redbone gravelly medial sandy loam-----	80	Limitations Very dusty Slopes 8 to 15%	1.00 0.16	Limitations Very dusty Slopes 8 to 15%	1.00 0.16	Limitations Very dusty Slopes > 6%	1.00 1.00
827: Redbone gravelly medial sandy loam-----	80	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 6% Very dusty	1.00 1.00
829: Paradiso loam-----	80	Limitations Very dusty Permeability .06-.6"/hr	1.00 0.50	Limitations Very dusty Permeability .06-.6"/hr	1.00 0.50	Limitations Very dusty Slopes 2 to 6% Permeability .06-.6"/hr	1.00 0.74 0.50
830: Paradiso loam-----	75	Limitations Slopes > 15% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.50	Limitations Slopes > 15% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.50	Limitations Slopes > 6% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.50
831: Surnuf gravelly loam----	40	Limitations Permeability .06-.6"/hr Slopes 8 to 15%	0.35 0.01	Limitations Permeability .06-.6"/hr Slopes 8 to 15%	0.35 0.01	Limitations Slopes > 6% Permeability .06-.6"/hr	1.00 0.35

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
831: Bigridge loam-----	30	Limitations Slopes 8 to 15%	0.01	Limitations Slopes 8 to 15%	0.01	Limitations Slopes > 6%	1.00
Spine very gravelly loam-----	15	Limitations Bedrock depth < 20" Slopes 8 to 15%	1.00 0.04	Limitations Bedrock depth < 20" Slopes 8 to 15%	1.00 0.04	Limitations Bedrock depth < 20" Slopes > 6%	1.00 1.00
832: Surnuf gravelly loam----	40	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.35	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.35	Limitations Slopes > 6% Permeability .06-.6"/hr	1.00 0.35
Bigridge loam-----	30	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
Spine very gravelly loam-----	15	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20"	1.00 1.00
833: Surnuf gravelly loam----	60	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.35	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.35	Limitations Slopes > 6% Permeability .06-.6"/hr	1.00 0.35
Bigridge loam-----	15	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
Spine very gravelly loam-----	15	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20"	1.00 1.00
834: Hietanen gravelly loam--	50	No limitations		No limitations		Limitations Slopes 2 to 6%	0.74
Mac gravelly loam-----	30	No limitations		No limitations		Limitations Slopes > 6%	1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
835:							
Hietanen gravelly loam--	60	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
Mac gravelly loam-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
836:							
Hietanen gravelly loam--	50	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
Mac gravelly loam-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
Spine very gravelly loam-----	15	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20"	1.00 1.00
837:							
Hietanen gravelly loam--	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
Spine very gravelly loam-----	25	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20"	1.00 1.00
Mac gravelly loam-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
838:							
Dixmine very gravelly loam-----	35	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.10	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.10	Limitations Slopes > 6% Permeability .06-.6"/hr	1.00 0.10
Spine very gravelly loam-----	25	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20"	1.00 1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
838: Mac gravelly loam-----	25	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
839: Chawanakee gravelly sandy loam-----	55	Limitations Bedrock depth < 20" Slopes 8 to 15%	1.00 0.16	Limitations Bedrock depth < 20" Slopes 8 to 15%	1.00 0.16	Limitations Bedrock depth < 20" Slopes > 6%	1.00 1.00
Billscabin gravelly sandy loam-----	35	Limitations Fragments >10" >3% Slopes 8 to 15%	1.00 0.16	Limitations Fragments >10" >3% Slopes 8 to 15%	1.00 0.16	Limitations Slopes > 6% Fragments >10" >3%	1.00 1.00
841: Billscabin gravelly sandy loam-----	50	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 6% Fragments >10" >3%	1.00 1.00
Bonneyr ridge sandy loam--	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
842: Billscabin gravelly sandy loam-----	60	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 6% Fragments >10" >3%	1.00 1.00
Bonneyr ridge sandy loam--	25	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
846: Bonneyr ridge sandy loam--	60	Limitations Slopes 8 to 15%	0.01	Limitations Slopes 8 to 15%	0.01	Limitations Slopes > 6%	1.00
Lewisflat loam-----	20	Limitations Very dusty Slopes 8 to 15%	1.00 0.01	Limitations Very dusty Slopes 8 to 15%	1.00 0.01	Limitations Very dusty Slopes > 6%	1.00 1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
847: Bonneyridge sandy loam--	60	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
Lewisflat loam-----	20	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 6% Very dusty	1.00 1.00
848: Bonneyridge sandy loam--	60	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
Lewisflat loam-----	20	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 6% Very dusty	1.00 1.00
850: Lewisflat loam-----	85	Limitations Very dusty	1.00	Limitations Very dusty	1.00	Limitations Very dusty Slopes 2 to 6%	1.00 0.26
851: Lewisflat loam-----	80	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 6% Very dusty	1.00 1.00
852: Lewisflat loam-----	75	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 6% Very dusty	1.00 1.00
860: Toadtown gravelly loam--	60	Limitations Very dusty Organic surface layer >= 4" thick Permeability .06-.6"/hr	1.00 1.00 0.15	Limitations Very dusty Organic surface layer >= 4" thick Permeability .06-.6"/hr	1.00 1.00 0.15	Limitations Very dusty Organic surface layer >= 4" thick Slopes > 6%	1.00 1.00 1.00
Powellton silt loam-----	20	Limitations Very dusty Permeability .06-.6"/hr Slopes 8 to 15%	1.00 0.15 0.01	Limitations Very dusty Permeability .06-.6"/hr Slopes 8 to 15%	1.00 0.15 0.01	Limitations Very dusty Slopes > 6% Permeability .06-.6"/hr	1.00 1.00 0.15

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
861: Toadtown gravelly loam--	60	Limitations Slopes > 15% Very dusty Organic surface layer >= 4" thick	1.00 1.00 1.00	Limitations Slopes > 15% Very dusty Organic surface layer >= 4" thick	1.00 1.00 1.00	Limitations Slopes > 6% Very dusty Organic surface layer >= 4" thick	1.00 1.00 1.00
Powellton silt loam----	20	Limitations Slopes > 15% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.15	Limitations Slopes > 15% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.15	Limitations Slopes > 6% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.15
862: Toadtown gravelly loam--	60	Limitations Slopes > 15% Very dusty Organic surface layer >= 4" thick	1.00 1.00 1.00	Limitations Slopes > 15% Very dusty Organic surface layer >= 4" thick	1.00 1.00 1.00	Limitations Slopes > 6% Very dusty Organic surface layer >= 4" thick	1.00 1.00 1.00
Powellton silt loam----	20	Limitations Slopes > 15% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.15	Limitations Slopes > 15% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.15	Limitations Slopes > 6% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.15
863: Toadtown gravelly loam--	60	Limitations Slopes > 15% Very dusty Organic surface layer >= 4" thick	1.00 1.00 1.00	Limitations Slopes > 15% Very dusty Organic surface layer >= 4" thick	1.00 1.00 1.00	Limitations Slopes > 6% Very dusty Organic surface layer >= 4" thick	1.00 1.00 1.00
Powellton silt loam----	20	Limitations Slopes > 15% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.15	Limitations Slopes > 15% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.15	Limitations Slopes > 6% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.15
880: Sites taxadjunct gravelly loam-----	50	Limitations Very dusty Permeability .06-.6"/hr Slopes 8 to 15%	1.00 0.85 0.01	Limitations Very dusty Permeability .06-.6"/hr Slopes 8 to 15%	1.00 0.85 0.01	Limitations Very dusty Slopes > 6% Permeability .06-.6"/hr	1.00 1.00 0.85

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
880: Jocal taxadjunct gravelly loam-----	35	Limitations Very dusty Slopes 8 to 15%	1.00 0.01	Limitations Very dusty Slopes 8 to 15%	1.00 0.01	Limitations Very dusty Slopes > 6%	1.00 1.00
881: Sites taxadjunct gravelly loam-----	50	Limitations Slopes > 15% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.85	Limitations Slopes > 15% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.85	Limitations Slopes > 6% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.85
Jocal taxadjunct gravelly loam-----	35	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 6% Very dusty	1.00 1.00
882: Sites taxadjunct gravelly loam-----	50	Limitations Slopes > 15% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.85	Limitations Slopes > 15% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.85	Limitations Slopes > 6% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.85
Jocal taxadjunct gravelly loam-----	35	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 6% Very dusty	1.00 1.00
883: Sites taxadjunct gravelly loam-----	50	Limitations Slopes > 15% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.85	Limitations Slopes > 15% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.85	Limitations Slopes > 6% Very dusty Permeability .06-.6"/hr	1.00 1.00 0.85
Jocal taxadjunct gravelly loam-----	40	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 6% Very dusty	1.00 1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
885: Rogerville silt loam----	75	Limitations Permeability .06-.6"/hr Slopes 8 to 15%	0.35 0.01	Limitations Permeability .06-.6"/hr Slopes 8 to 15%	0.35 0.01	Limitations Slopes > 6% Permeability .06-.6"/hr	1.00 0.35
886: Rogerville silt loam----	80	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.35	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.35	Limitations Slopes > 6% Permeability .06-.6"/hr	1.00 0.35
892: Rogerville silt loam----	85	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.35	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.35	Limitations Slopes > 6% Permeability .06-.6"/hr	1.00 0.35
893: Rogerville silt loam----	85	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.35	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.35	Limitations Slopes > 6% Permeability .06-.6"/hr	1.00 0.35
902: Lava flows, Lovejoy basalt-----	50	Not rated		Not rated		Not rated	
Lumpkin gravelly medial sandy loam-----	40	Limitations Bedrock depth < 20" Very dusty Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Bedrock depth < 20" Very dusty Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Surface fragments (<3") >25% Bedrock depth < 20" Very dusty	1.00 1.00 1.00 1.00
903: Mudwash gravelly medial sandy loam-----	45	Limitations Very dusty Slopes 8 to 15%	1.00 0.01	Limitations Very dusty Slopes 8 to 15%	1.00 0.01	Limitations Very dusty Slopes > 6%	1.00 1.00
Timberisland very gravelly medial sandy loam-----	25	Limitations Very dusty Slopes > 15%	1.00 1.00	Limitations Very dusty Slopes > 15%	1.00 1.00	Limitations Very dusty Slopes > 6%	1.00 1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
903: Lavatop gravelly medial fine sandy loam-----	20	Limitations Very dusty Slopes 8 to 15%	1.00 0.01	Limitations Very dusty Slopes 8 to 15%	1.00 0.01	Limitations Very dusty Slopes > 6% Bedrock 20-40" and slope > 2%	1.00 1.00 0.50
904: Lava flows, Lovejoy basalt-----	60	Not rated		Not rated		Not rated	
Lavatop gravelly medial fine sandy loam-----	20	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 6% Very dusty Bedrock 20-40" and slope > 2%	1.00 1.00 0.50
905: Lava flows, Lovejoy basalt-----	60	Not rated		Not rated		Not rated	
Lumpkin gravelly medial sandy loam-----	30	Limitations Slopes > 15% Bedrock depth < 20" Very dusty	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Very dusty	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
906: Lava flows, Lovejoy basalt-----	60	Not rated		Not rated		Not rated	
Lumpkin gravelly medial sandy loam-----	30	Limitations Slopes > 15% Bedrock depth < 20" Very dusty	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Very dusty	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
911: Endoaquolls loam-----	75	Limitations Saturation < 18" depth Flooding >= rare Permeability .06-.6"/hr	1.00 1.00 0.90	Limitations Saturation < 12" depth Permeability .06-.6"/hr	1.00 0.90	Limitations Saturation < 18" depth Permeability .06-.6"/hr Occasional flooding	1.00 0.90 0.50
923: Powderhouse medial sandy loam-----	45	Limitations Very dusty Slopes 8 to 15%	1.00 0.01	Limitations Very dusty Slopes 8 to 15%	1.00 0.01	Limitations Very dusty Slopes > 6%	1.00 1.00
McNair medial coarse sandy loam-----	25	Limitations Very dusty Slopes 8 to 15%	1.00 0.01	Limitations Very dusty Slopes 8 to 15%	1.00 0.01	Limitations Very dusty Slopes > 6%	1.00 1.00
Greenwell medial sandy loam-----	20	Limitations Very dusty Slopes 8 to 15%	1.00 0.01	Limitations Very dusty Slopes 8 to 15%	1.00 0.01	Limitations Very dusty Slopes > 6%	1.00 1.00
924: Powderhouse medial sandy loam-----	45	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 6% Very dusty	1.00 1.00
McNair medial coarse sandy loam-----	25	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 6% Very dusty	1.00 1.00
Greenwell medial sandy loam-----	20	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 6% Very dusty	1.00 1.00
925: Powderhouse medial sandy loam-----	45	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 6% Very dusty	1.00 1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
925: McNair medial coarse sandy loam-----	25	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 6% Very dusty	1.00 1.00
Greenwell medial sandy loam-----	20	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 6% Very dusty	1.00 1.00
930: Shakeridge gravelly medial coarse sandy loam-----	50	Limitations Very dusty Slopes 8 to 15%	1.00 0.01	Limitations Very dusty Slopes 8 to 15%	1.00 0.01	Limitations Very dusty Slopes > 6%	1.00 1.00
Timberisland very gravelly medial sandy loam-----	40	Limitations Very dusty Slopes 8 to 15%	1.00 0.01	Limitations Very dusty Slopes 8 to 15%	1.00 0.01	Limitations Very dusty Slopes > 6%	1.00 1.00
931: Shakeridge gravelly medial coarse sandy loam-----	40	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 6% Very dusty	1.00 1.00
Mudwash gravelly medial sandy loam-----	25	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 6% Very dusty	1.00 1.00
Timberisland very gravelly medial sandy loam-----	15	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 6% Very dusty	1.00 1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
932: Shakeridge gravelly medial coarse sandy loam-----	50	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 6% Very dusty	1.00 1.00
Mudwash gravelly medial sandy loam-----	35	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 6% Very dusty	1.00 1.00
933: Shakeridge gravelly medial coarse sandy loam-----	80	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 6% Very dusty	1.00 1.00
934: Mudwash gravelly medial sandy loam-----	80	Limitations Very dusty Slopes 8 to 15%	1.00 0.01	Limitations Very dusty Slopes 8 to 15%	1.00 0.01	Limitations Very dusty Slopes > 6%	1.00 1.00
939: Fluvaquentic Humaquepts very fine sandy loam---	85	Limitations Saturation < 18" depth Flooding >= rare Permeability .06-.6"/hr	1.00 1.00 0.15	Limitations Saturation from 12 to 30" depth Permeability .06-.6"/hr	0.94 0.15	Limitations Saturation < 18" depth Slopes 2 to 6% Permeability .06-.6"/hr	1.00 0.26 0.15
940: Dejonah gravelly loam---	50	Limitations Very dusty Slopes 8 to 15%	1.00 0.01	Limitations Very dusty Slopes 8 to 15%	1.00 0.01	Limitations Very dusty Slopes > 6%	1.00 1.00
Stagpoint loam-----	30	Limitations Very dusty Slopes 8 to 15%	1.00 0.01	Limitations Very dusty Slopes 8 to 15%	1.00 0.01	Limitations Very dusty Slopes > 6%	1.00 1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
941:							
Dejonah gravelly loam---	50	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 6% Very dusty	1.00 1.00
Stagpoint loam-----	30	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 6% Very dusty	1.00 1.00
942:							
Stagpoint loam-----	50	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 6% Very dusty	1.00 1.00
Dejonah gravelly loam---	30	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 6% Very dusty	1.00 1.00
948:							
Stagpoint loam-----	55	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 6% Very dusty	1.00 1.00
Dejonah gravelly loam---	35	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 6% Very dusty	1.00 1.00
949:							
Rogerville taxadjunct fine sandy loam-----	80	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 6% Very dusty	1.00 1.00
950:							
Lumpkin taxadjunct very gravelly medial very fine sandy loam-----	40	Limitations Bedrock depth < 20" Very dusty Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Bedrock depth < 20" Very dusty Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Surface fragments (<3") >25% Bedrock depth < 20" Very dusty	1.00 1.00 1.00 1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
950: Rock outcrop, olivine basalt, andesite, or mudflow-----	25	Not rated		Not rated		Not rated	
Powderhouse medial sandy loam-----	20	Limitations Very dusty Slopes 8 to 15%	1.00 0.01	Limitations Very dusty Slopes 8 to 15%	1.00 0.01	Limitations Very dusty Slopes > 6%	1.00 1.00
951: Lumpkin taxadjunct very gravelly medial very fine sandy loam-----	40	Limitations Slopes > 15% Bedrock depth < 20" Very dusty	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Very dusty	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
Rock outcrop, andesite--	25	Not rated		Not rated		Not rated	
Powderhouse medial sandy loam-----	20	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 15% Very dusty	1.00 1.00	Limitations Slopes > 6% Very dusty	1.00 1.00
960: Surnuf gravelly loam, high elevation-----	85	Limitations Permeability .06-.6"/hr	0.46	Limitations Permeability .06-.6"/hr	0.46	Limitations Slopes 2 to 6% Permeability .06-.6"/hr	0.74 0.46
961: Surnuf gravelly loam, high elevation-----	85	Limitations Permeability .06-.6"/hr Slopes 8 to 15%	0.46 0.37	Limitations Permeability .06-.6"/hr Slopes 8 to 15%	0.46 0.37	Limitations Slopes > 6% Permeability .06-.6"/hr	1.00 0.46
962: Surnuf gravelly loam, high elevation-----	85	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.46	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.46	Limitations Slopes > 6% Permeability .06-.6"/hr	1.00 0.46

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
963: Surnuf gravelly loam, high elevation-----	85	Limitations Slopes > 15% Fragments >10" .1 to 3% Permeability .06-.6"/hr	1.00 0.76 0.46	Limitations Slopes > 15% Fragments >10" .1 to 3% Permeability .06-.6"/hr	1.00 0.76 0.46	Limitations Slopes > 6% Fragments >10" .1 to 3% Permeability .06-.6"/hr	1.00 0.76 0.46
990: Riverwash, frequently flooded-----	100	Not rated		Not rated		Not rated	
991: Xerofluvents sandy loam, frequently flooded-----	75	Limitations Flooding >= rare Saturation from 18 to 30" depth	1.00 0.03	Limitations Frequent flooding Saturation from 12 to 30" depth	0.50 0.02	Limitations Flooding > occasional Slopes 2 to 6% Saturation from 18 to 30" depth	1.00 0.50 0.03
995: Pits, gravel-----	100	Not rated		Not rated		Not rated	
996: Dumps, excavated material-----	100	Not rated		Not rated		Not rated	
997: Pits-----	95	Not rated		Not rated		Not rated	
998: Dumps, landfill-----	100	Not rated		Not rated		Not rated	
999: Water-----	100	Not rated		Not rated		Not rated	

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitations	Value	Limitations	Value	Limitations	Value
DAM: Dam, manmade-----	100	Not rated		Not rated		Not rated	

The interpretation for camp areas evaluates the following soil properties at variable depths in the soil: flooding; ponding; wetness; slope; depth to bedrock; depth to a cemented pan; fragments less than, equal to, or more than 3 inches in size; sodium content (SAR); salinity (EC); a clayey surface layer; Unified classes for a high content of organic matter (PT, OL, and OH); soil dustiness; and permeability (Ksat) that is too rapid, allowing seepage in some climates.

The interpretation for picnic areas evaluates the following soil properties at variable depths in the soil: flooding, ponding, wetness, slope, depth to bedrock, depth to a cemented pan, salinity (EC), pH, soil dustiness, fragments more than 3 inches in size, surface fragments more than 10 inches in size, the amount of sand or clay in the surface layer, Unified classes for a high content of organic matter (PT, OL, and OH), and permeability (Ksat) that is too rapid, allowing seepage in some climates.

The interpretation for playgrounds evaluates the following soil properties at variable depths in the soil: flooding, ponding, wetness, slope, depth to bedrock, depth to a cemented pan, surface fragments more than 10 inches in size, fragments equal to or less than 3 inches in size, Unified classes for a high content of organic matter (PT, OL, and OH), soil dustiness, sand or clay content in the surface layer, pH, salinity (EC), and permeability (Ksat) that is too rapid, allowing seepage in some climates.

Table 15b.--Recreational Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The rating is based on the limitation with the highest value. Only the three highest value limitations are listed. There may be more limitations. Fine-earth fractions and rock fragments are reported on a weight basis. An explanation of the rating criteria and of the abbreviations used in describing the limitations is given at the end of the table)

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
100: Anita clay-----	60	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Clay in surface >= 40% Ponding (any duration) Depth to pan < 20"	1.00 1.00 1.00
Galt clay-----	25	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 12" depth Clay in surface >= 40%	1.00 1.00 1.00
104: Bosquejo clay-----	85	Limitations Ponding (any duration) Surface clay >= 40%	1.00 1.00	Limitations Ponding (any duration) Surface clay >= 40%	1.00 1.00	Limitations Ponding (any duration) Clay in surface >= 40%	1.00 1.00
105: Busacca clay loam-----	85	Limitations Ponding (any duration)	1.00	Limitations Ponding (any duration)	1.00	Limitations Ponding (any duration)	1.00
108: Tuscan gravelly loam----	45	Limitations Saturation < 12" depth Dusty	1.00 0.50	Limitations Saturation < 12" depth Dusty	1.00 0.50	Limitations Depth to pan < 20" Saturation < 12" depth AWC < 2" to 40"	1.00 1.00 1.00
Igo gravelly loam-----	20	Limitations Saturation < 12" depth Dusty	1.00 0.50	Limitations Saturation < 12" depth Dusty	1.00 0.50	Limitations Depth to pan < 20" Saturation < 12" depth AWC < 2" to 40"	1.00 1.00 1.00
Anita clay-----	15	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Clay in surface >= 40% Ponding (any duration) Depth to pan < 20"	1.00 1.00 1.00
109: Bosquejo clay loam-----	85	Limitations Ponding (any duration)	1.00	Limitations Ponding (any duration)	1.00	Limitations Ponding (any duration)	1.00

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
110: Bosquejo silt loam, overwash, occasionally flooded-----	90	Limitations Ponding (any duration) Dusty	1.00 0.50	Limitations Ponding (any duration) Dusty	1.00 0.50	Limitations Ponding (any duration) Occasional flooding	1.00 0.80
111yu: Auburn loam-----	40	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Bedrock depth < 20" AWC 2-4" to 40" Slopes 8 to 15%	1.00 0.73 0.63
Sobrante loam-----	40	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Bedrock depth 20 to 40" Slopes 8 to 15%	0.71 0.63
114yu: Auburn gravelly loam----	40	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Bedrock depth < 20" AWC 2-4" to 40" Slopes 8 to 15%	1.00 0.97 0.63
Sobrante gravelly loam--	40	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Slopes 8 to 15% Fragments (gravel size) 25- 50% Bedrock depth 20 to 40"	0.63 0.25 0.10
118: Xerorthents, tailings---	80	No limitations		No limitations		Limitations Fragments (gravel size) >50% AWC 2-4" to 40" Occasional flooding	1.00 0.96 0.80
118co: Clear Lake clay, frequently flooded----	90	Limitations Surface clay >= 40% Frequent flooding	1.00 0.50	Limitations Surface clay >= 40% Frequent flooding	1.00 0.50	Limitations Clay in surface >= 40% Frequent flooding	1.00 0.90

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
119: Xerorthents, tailings---	70	No limitations		No limitations		Limitations Fragments (gravel size) >50% AWC 2-4" to 40" Occasional flooding	1.00 0.96 0.80
Urban land-----	30	Not rated		Not rated		Not rated	
119yu: Auburn gravelly loam---	30	Limitations Slopes > 25% Dusty	1.00 0.50	Limitations Slopes > 40% Dusty	1.00 0.50	Limitations Bedrock depth < 20" Slopes > 15% AWC 2-4" to 40"	1.00 1.00 0.97
Sobrante gravelly loam--	30	Limitations Slopes > 25% Dusty	1.00 0.50	Limitations Slopes > 40% Dusty	1.00 0.50	Limitations Slopes > 15% Fragments (gravel size) 25- 50% Bedrock depth 20 to 40"	1.00 0.25 0.10
Rock outcrop-----	20	Not rated		Not rated		Not rated	
120: Gridley taxadjunct clay loam-----	80	Limitations Ponding (any duration) Saturation from 12 to 24" depth	1.00 0.86	Limitations Ponding (any duration) Saturation from 12 to 24" depth	1.00 0.86	Limitations Ponding (any duration) Depth to pan 20 to < 40" Saturation from 12 to 24" depth	1.00 0.99 0.86
121: Boga loam-----	45	Limitations Ponding (any duration) Dusty	1.00 0.50	Limitations Ponding (any duration) Dusty	1.00 0.50	Limitations Ponding (any duration)	1.00
Loemstone loam-----	40	Limitations Ponding (any duration) Dusty	1.00 0.50	Limitations Ponding (any duration) Dusty	1.00 0.50	Limitations Ponding (any duration)	1.00

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
121su: Columbia fine sandy loam, frequently flooded-----	80	Limitations Frequent flooding Surface sand fractions 70- 90% by wt.	0.50 0.01	Limitations Frequent flooding Surface sand fractions 70- 90% by wt.	0.50 0.01	Limitations Frequent flooding	0.90
125: Gridley taxadjunct loam	65	Limitations Ponding (any duration) Saturation from 12 to 24" depth Dusty	1.00 0.86 0.50	Limitations Ponding (any duration) Saturation from 12 to 24" depth Dusty	1.00 0.86 0.50	Limitations Ponding (any duration) Depth to pan 20 to < 40" Saturation from 12 to 24" depth	1.00 0.97 0.86
Calcic Haploxerolls sandy loam-----	20	No limitations		No limitations		Limitations Surface EC 6 to 8 mmhos/cm	0.50
126: Liveoak sandy loam-----	85	No limitations		No limitations		No limitations	
127: Gridley taxadjunct loam	85	Limitations Ponding (any duration) Saturation from 12 to 24" depth Dusty	1.00 0.86 0.50	Limitations Ponding (any duration) Saturation from 12 to 24" depth Dusty	1.00 0.86 0.50	Limitations Ponding (any duration) Depth to pan 20 to < 40" Saturation from 12 to 24" depth	1.00 0.97 0.86
130: Eastbiggs loam-----	80	Limitations Saturation from 12 to 24" depth Dusty	0.92 0.50	Limitations Saturation from 12 to 24" depth Dusty	0.92 0.50	Limitations Saturation from 12 to 24" depth Depth to pan 20 to < 40"	0.92 0.71
133: Eastbiggs loam-----	50	Limitations Saturation from 12 to 24" depth Dusty	0.92 0.50	Limitations Saturation from 12 to 24" depth Dusty	0.92 0.50	Limitations Saturation from 12 to 24" depth Depth to pan 20 to < 40"	0.92 0.71
Galt clay loam-----	40	Limitations Saturation < 12" depth Ponding (any duration)	1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration)	1.00 1.00	Limitations Ponding (any duration) Saturation < 12" depth Depth to pan 20 to < 40"	1.00 1.00 0.46

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
136:							
Duric Xerarents, cut----	35	Limitations Saturation < 12" depth Ponding (any duration)	1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration)	1.00 1.00	Limitations Ponding (any duration) Depth to pan < 20" Saturation < 12" depth	1.00 1.00 1.00
Duric Xerarents, fill----	30	Limitations Ponding (any duration)	1.00	Limitations Ponding (any duration)	1.00	Limitations Ponding (any duration)	1.00
Eastbiggs fine sandy loam, leveled-----	25	Limitations Ponding (any duration) Saturation from 12 to 24" depth	1.00 0.92	Limitations Ponding (any duration) Saturation from 12 to 24" depth	1.00 0.92	Limitations Ponding (any duration) Saturation from 12 to 24" depth Depth to pan 20 to < 40"	1.00 0.92 0.46
138su:							
Liveoak sandy clay loam	85	No limitations		No limitations		No limitations	
139su:							
Liveoak taxadjunct loam, frequently flooded-----	45	Limitations Frequent flooding Dusty	0.50 0.50	Limitations Frequent flooding Dusty	0.50 0.50	Limitations Frequent flooding	0.90
Galt taxadjunct clay loam, frequently flooded-----	40	Limitations Saturation from 12 to 24" depth Frequent flooding	0.73 0.50	Limitations Saturation from 12 to 24" depth Frequent flooding	0.73 0.50	Limitations Depth to pan 20 to < 40" Frequent flooding Saturation from 12 to 24" depth	0.99 0.90 0.73
143su:							
Marcum clay loam-----	45	No limitations		No limitations		No limitations	
Gridley clay loam-----	40	No limitations		No limitations		Limitations Bedrock depth 20 to 40"	0.03
149yu:							
Flanly sandy loam-----	80	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10" >3% coverage)	1.00	Limitations Slopes 8 to 15% Bedrock depth 20 to 40" Fragments >3" 5 to 30%	0.63 0.16 0.03

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
150: Columbia stratified sand to fine sandy loam	85	Limitations Surface sand fractions > 90% by wt. Frequent flooding	1.00 0.50	Limitations Surface sand fractions > 90% by wt. Frequent flooding	1.00 0.50	Limitations Frequent flooding Loamy coarse sand surface	0.90 0.50
150su: Olashes sandy loam-----	85	No limitations		No limitations		No limitations	
151yu: Flanly sandy loam-----	80	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage	1.00 1.00	Limitations Slopes > 15% Bedrock depth 20 to 40" Fragments >3" 5 to 30%	1.00 0.16 0.03
152: Gianella fine sandy loam, frequently flooded-----	85	Limitations Frequent flooding	0.50	Limitations Frequent flooding	0.50	Limitations Frequent flooding	0.90
153: Gianella sandy loam, frequently flooded-----	85	Limitations Frequent flooding	0.50	Limitations Frequent flooding	0.50	Limitations Frequent flooding	0.90
154: Gianella silt loam, frequently flooded-----	85	Limitations Frequent flooding Dusty	0.50 0.50	Limitations Frequent flooding Dusty	0.50 0.50	Limitations Frequent flooding	0.90
158: Gianella fine sandy loam, occasionally flooded-----	85	Limitations Surface sand fractions 70- 90% by wt.	0.01	Limitations Surface sand fractions 70- 90% by wt.	0.01	Limitations Occasional flooding	0.80

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
160: Gianella loam, occasionally flooded---	85	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Occasional flooding	0.80
161: Gianella fine sandy loam, rarely flooded---	90	Limitations Surface sand fractions 70- 90% by wt.	0.01	Limitations Surface sand fractions 70- 90% by wt.	0.01	No limitations	
162: Gianella loam, rarely flooded-----	90	Limitations Dusty	0.50	Limitations Dusty	0.50	No limitations	
163yu: Holillipah loamy sand---	85	Limitations Frequent flooding Surface sand fractions 70- 90% by wt.	0.50 0.36	Limitations Frequent flooding Surface sand fractions 70- 90% by wt.	0.50 0.36	Limitations Frequent flooding AWC 2-4" to 40"	0.90 0.39
165yu: Holland loam-----	40	Limitations Dusty Slopes 15 - 25%	0.50 0.02	Limitations Dusty	0.50	Limitations Slopes > 15%	1.00
Hoda loam-----	25	Limitations Dusty Slopes 15 - 25%	0.50 0.02	Limitations Dusty	0.50	Limitations Slopes > 15%	1.00
Hotaw loam-----	20	Limitations Dusty Slopes 15 - 25%	0.50 0.02	Limitations Dusty	0.50	Limitations Slopes > 15% Bedrock depth 20 to 40"	1.00 0.16
173yu: Hotaw loam-----	45	Limitations Dusty Slopes 15 - 25%	0.50 0.32	Limitations Dusty	0.50	Limitations Slopes > 15% Bedrock depth 20 to 40"	1.00 0.16

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
173yu: Chawanakee gravelly sandy loam-----	20	Limitations K factor >.35 and slopes > 8% Slopes 15 - 25%	1.00 0.32	No limitations		Limitations Bedrock depth < 20" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00
Holland loam-----	15	Limitations Dusty Slopes 15 - 25%	0.50 0.32	Limitations Dusty	0.50	Limitations Slopes > 15%	1.00
175: Farwell clay loam, rarely flooded-----	85	No limitations		No limitations		No limitations	
176: Farwell loam, occasionally flooded---	85	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Occasional flooding	0.80
176yu: Jocal loam-----	80	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Slopes 8 to 15%	0.63
177: Farwell silt loam, occasionally flooded---	85	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Occasional flooding	0.80
178: Arbuckle gravelly loam--	87	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Fragments (gravel size) 25- 50%	0.01
179: Moda taxadjunct loam---	65	Limitations Saturation < 12" depth Ponding (any duration) Dusty	1.00 1.00 0.50	Limitations Saturation < 12" depth Ponding (any duration) Dusty	1.00 1.00 0.50	Limitations Ponding (any duration) Saturation < 12" depth Depth to pan 20 to < 40"	1.00 1.00 0.97
Arbuckle gravelly loam--	20	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Fragments (gravel size) 25- 50%	0.01

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
180: Dodgeland silty clay loam, occasionally flooded-----	85	Limitations Saturation < 12" depth Ponding (any duration)	1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration)	1.00 1.00	Limitations Ponding (any duration) Saturation < 12" depth Occasional flooding	1.00 1.00 0.80
181: Dodgeland silty clay loam, frequently flooded-----	80	Limitations Saturation < 12" depth Ponding (any duration) Frequent flooding	1.00 1.00 0.50	Limitations Saturation < 12" depth Ponding (any duration) Frequent flooding	1.00 1.00 0.50	Limitations Ponding (any duration) Saturation < 12" depth Frequent flooding	1.00 1.00 0.90
188yu: Mariposa taxadjunct gravelly loam-----	80	Limitations Slopes 15 - 25% Dusty	0.92 0.50	Limitations Dusty	0.50	Limitations Slopes > 15% Bedrock depth 20 to 40" AWC 2-4" to 40"	1.00 0.95 0.70
189: Esquon silt loam, overwash-----	90	Limitations Ponding (any duration) Dusty	1.00 0.50	Limitations Ponding (any duration) Dusty	1.00 0.50	Limitations Ponding (any duration)	1.00
189yu: Mariposa taxadjunct gravelly loam-----	80	Limitations Slopes > 25% Dusty	1.00 0.50	Limitations Slopes > 40% Dusty	1.00 0.50	Limitations Slopes > 15% Bedrock depth 20 to 40" AWC 2-4" to 40"	1.00 0.95 0.70
196yu: Mildred cobbly loam----	80	Limitations Slopes > 25% K factor >.35 and slopes > 8% Dusty	1.00 1.00 0.50	Limitations Slopes > 40% Dusty	1.00 0.50	Limitations Slopes > 15% Bedrock depth 20 to 40" Fragments >3" 5 to 30%	1.00 0.95 0.92

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
200: Parrott silt loam, occasionally flooded---	85	Limitations Ponding (any duration) Dusty	1.00 0.50	Limitations Ponding (any duration) Dusty	1.00 0.50	Limitations Ponding (any duration) Occasional flooding	1.00 0.80
201: Parrott silt loam, frequently flooded----	85	Limitations Ponding (any duration) Frequent flooding Dusty	1.00 0.50 0.50	Limitations Ponding (any duration) Frequent flooding Dusty	1.00 0.50 0.50	Limitations Ponding (any duration) Frequent flooding	1.00 0.90
203: Kusalslough silty clay loam, occasionally flooded-----	85	Limitations Ponding (any duration)	1.00	Limitations Ponding (any duration)	1.00	Limitations Ponding (any duration) Occasional flooding	1.00 0.80
205: Parrott silt loam, frequently flooded----	50	Limitations Ponding (any duration) Frequent flooding Dusty	1.00 0.50 0.50	Limitations Ponding (any duration) Frequent flooding Dusty	1.00 0.50 0.50	Limitations Ponding (any duration) Frequent flooding	1.00 0.90
Vermet silt loam, frequently flooded----	35	Limitations Saturation < 12" depth Ponding (any duration) Frequent flooding	1.00 1.00 0.50	Limitations Saturation < 12" depth Ponding (any duration) Frequent flooding	1.00 1.00 0.50	Limitations Ponding (any duration) Saturation < 12" depth Frequent flooding	1.00 1.00 0.90
206: Islandbar sandy loam----	60	No limitations		No limitations		Limitations AWC 2-4" to 40" Slopes 8 to 15%	0.01 0.01
Chawanakee gravelly sandy loam-----	30	No limitations		No limitations		Limitations Bedrock depth < 20" AWC < 2" to 40" Slopes 8 to 15%	1.00 1.00 0.01

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
207:							
Islandbar sandy loam----	60	Limitations K factor >.35 and slopes > 8% Slopes 15 - 25%	1.00 0.82	No limitations		Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.01
Chawanakee gravelly sandy loam-----	30	Limitations K factor >.35 and slopes > 8% Slopes > 25%	1.00 1.00	No limitations		Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
208:							
Islandbar sandy loam----	60	Limitations Slopes > 25% K factor >.35 and slopes > 8%	1.00 1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.01
Chawanakee gravelly sandy loam-----	30	Limitations Slopes > 25% K factor >.35 and slopes > 8%	1.00 1.00	Limitations Slopes > 40%	1.00	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
209:							
Islandbar sandy loam----	60	Limitations Slopes > 25% K factor >.35 and slopes > 8%	1.00 1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.01
Chawanakee gravelly sandy loam-----	30	Limitations Slopes > 25% K factor >.35 and slopes > 8%	1.00 1.00	Limitations Slopes > 40%	1.00	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
210:							
Featherfalls sandy loam	50	No limitations		No limitations		Limitations Slopes 8 to 15%	0.01
Islandbar sandy loam----	35	No limitations		No limitations		Limitations AWC 2-4" to 40" Slopes 8 to 15%	0.01 0.01

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
211: Featherfalls sandy loam	55	Limitations K factor >.35 and slopes > 8% Slopes > 25%	1.00 1.00	Limitations Slopes 25 to 40%	0.08	Limitations Slopes > 15%	1.00
Islandbar sandy loam----	35	Limitations K factor >.35 and slopes > 8% Slopes 15 - 25%	1.00 0.82	No limitations		Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.01
212: Featherfalls sandy loam	55	Limitations Slopes > 25% K factor >.35 and slopes > 8%	1.00 1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15%	1.00
Islandbar sandy loam----	35	Limitations Slopes > 25% K factor >.35 and slopes > 8%	1.00 1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.01
213: Featherfalls sandy loam	45	Limitations Slopes > 25% K factor >.35 and slopes > 8%	1.00 1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15%	1.00
Islandbar sandy loam----	35	Limitations Slopes > 25% K factor >.35 and slopes > 8%	1.00 1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.01
214: Crystalhill gravelly coarse sandy loam-----	35	No limitations		No limitations		Limitations AWC 2-4" to 40" Slopes 8 to 15%	0.27 0.16
Oregongulch gravelly sandy loam-----	20	No limitations		No limitations		Limitations AWC < 2" to 40" Bedrock depth 20 to 40" Slopes 8 to 15%	1.00 0.90 0.16

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
214:							
Craigsaddle coarse sandy loam-----	20	No limitations		No limitations		No limitations	
Rock outcrop, trondhjemite-----	10	Not rated		Not rated		Not rated	
215:							
Crystalhill gravelly coarse sandy loam-----	35	Limitations Slopes 15 - 25%	0.82	No limitations		Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.27
Oregongulch gravelly sandy loam-----	20	Limitations Slopes 15 - 25%	0.82	No limitations		Limitations Slopes > 15% AWC < 2" to 40" Bedrock depth 20 to 40"	1.00 1.00 0.90
Craigsaddle coarse sandy loam-----	20	Limitations K factor >.35 and slopes > 8% Slopes 15 - 25%	1.00 0.82	No limitations		Limitations Slopes > 15%	1.00
Rock outcrop, trondhjemite-----	10	Not rated		Not rated		Not rated	
216:							
Crystalhill gravelly coarse sandy loam-----	35	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.27
Oregongulch gravelly sandy loam-----	20	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15% AWC < 2" to 40" Bedrock depth 20 to 40"	1.00 1.00 0.90

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
216: Craigsaddle coarse sandy loam-----	20	Limitations Slopes > 25% K factor >.35 and slopes > 8%	1.00 1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15%	1.00
Rock outcrop, trondhjemite-----	10	Not rated		Not rated		Not rated	
217: Crystalhill gravelly coarse sandy loam-----	35	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.27
Oregongulch gravelly sandy loam-----	20	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15% AWC < 2" to 40" Bedrock depth 20 to 40"	1.00 1.00 0.90
Craigsaddle coarse sandy loam-----	20	Limitations Slopes > 25% K factor >.35 and slopes > 8%	1.00 1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15%	1.00
Rock outcrop, trondhjemite-----	10	Not rated		Not rated		Not rated	
218: Rock outcrop, quartz diomite-----	60	Not rated		Not rated		Not rated	
Lithic Xerorthents gravelly sandy loam----	20	Limitations K factor >.35 and slopes > 8% Slopes > 25% Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage	1.00 1.00	Limitations Bedrock depth < 20" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
218: Chawanakee gravelly sandy loam-----	15	Limitations K factor >.35 and slopes > 8% Slopes > 25%	1.00 1.00	Limitations Slopes 25 to 40%	0.22	Limitations Bedrock depth < 20" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00
219: Rock outcrop, quartz diorite-----	60	Not rated		Not rated		Not rated	
Lithic Xerorthents gravelly sandy loam----	20	Limitations Slopes > 25% K factor >.35 and slopes > 8% Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage	1.00 1.00	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Chawanakee gravelly sandy loam-----	15	Limitations Slopes > 25% K factor >.35 and slopes > 8%	1.00 1.00	Limitations Slopes > 40%	1.00	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
220: Esquon clay, frequently flooded-----	60	Limitations Ponding (any duration) Surface clay >= 40% Frequent flooding	1.00 1.00 0.50	Limitations Ponding (any duration) Surface clay >= 40% Frequent flooding	1.00 1.00 0.50	Limitations Ponding (any duration) Clay in surface >= 40% Frequent flooding	1.00 1.00 0.90
Clear Lake silty clay loam, overwash-----	30	Limitations Saturation < 12" depth Ponding (any duration) Frequent flooding	1.00 1.00 0.50	Limitations Saturation < 12" depth Ponding (any duration) Frequent flooding	1.00 1.00 0.50	Limitations Ponding (any duration) Saturation < 12" depth Frequent flooding	1.00 1.00 0.90
221yu: Sites loam-----	85	Limitations Dusty	0.50	Limitations Dusty	0.50	No limitations	
222yu: Sites loam-----	85	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Slopes 8 to 15%	0.63

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
225yu: Sites gravelly loam, bedrock substratum-----	80	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Fragments (gravel size) 25- 50%	0.25
226yu: Sites gravelly loam, bedrock substratum-----	80	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Slopes 8 to 15% Fragments (gravel size) 25- 50%	0.63 0.25
227yu: Sites gravelly loam, bedrock substratum-----	80	Limitations Slopes 15 - 25% Dusty	0.92 0.50	Limitations Dusty	0.50	Limitations Slopes > 15% Fragments (gravel size) 25- 50%	1.00 0.25
242yu: Surnuf loam-----	80	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations AWC < 2" to 40" Slopes 8 to 15%	0.99 0.63
243yu: Surnuf loam-----	80	Limitations Slopes 15 - 25% Dusty	0.92 0.50	Limitations Dusty	0.50	Limitations Slopes > 15% AWC < 2" to 40"	1.00 0.99
244yu: Surnuf loam-----	80	Limitations Slopes > 25% Dusty	1.00 0.50	Limitations Slopes > 40% Dusty	1.00 0.50	Limitations Slopes > 15% AWC < 2" to 40"	1.00 0.99
245: Surnuf loam-----	80	Limitations Slopes > 25% Dusty	1.00 0.50	Limitations Slopes > 40% Dusty	1.00 0.50	Limitations Slopes > 15% AWC < 2" to 40"	1.00 0.99

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
248yu: Trainer loam-----	85	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Occasional flooding	0.80
250: Llanoseco, occasionally flooded-----	90	Limitations Ponding (any duration)	1.00	Limitations Ponding (any duration)	1.00	Limitations Ponding (any duration) Occasional flooding	1.00 0.80
252: Whitecabin silty clay, occasionally flooded---	60	Limitations Ponding (any duration) Surface clay >= 40%	1.00 1.00	Limitations Ponding (any duration) Surface clay >= 40%	1.00 1.00	Limitations Ponding (any duration) Clay in surface >= 40% Occasional flooding	1.00 1.00 0.80
Ordferry silty clay, occasionally flooded---	25	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 12" depth Clay in surface >= 40%	1.00 1.00 1.00
252yu: Woodleaf gravelly loam--	80	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Fragments >3" 5 to 30% Bedrock depth 20 to 40" Slopes 8 to 15%	0.68 0.65 0.04
253yu: Woodleaf gravelly loam--	80	Limitations Slopes 15 - 25% Dusty	0.92 0.50	Limitations Dusty	0.50	Limitations Slopes > 15% Fragments >3" 5 to 30% Bedrock depth 20 to 40"	1.00 0.68 0.65
255: Whitecabin silty clay loam, occasionally flooded-----	60	Limitations Ponding (any duration)	1.00	Limitations Ponding (any duration)	1.00	Limitations Ponding (any duration) Occasional flooding	1.00 0.80

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
255: Ordferry silty clay, occasionally flooded---	30	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 12" depth Clay in surface >= 40%	1.00 1.00 1.00
256: Whitecabin silt loam, occasionally flooded---	85	Limitations Ponding (any duration) Dusty	1.00 0.50	Limitations Ponding (any duration) Dusty	1.00 0.50	Limitations Ponding (any duration) Occasional flooding	1.00 0.80
257: Llanoseco, frequently flooded-----	90	Limitations Ponding (any duration) Frequent flooding	1.00 0.50	Limitations Ponding (any duration) Frequent flooding	1.00 0.50	Limitations Ponding (any duration) Frequent flooding	1.00 0.90
258: Codora, occasionally flooded-----	85	Limitations Ponding (any duration)	1.00	Limitations Ponding (any duration)	1.00	Limitations Ponding (any duration) Occasional flooding	1.00 0.80
260: Ordferry silty clay, occasionally flooded---	90	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 12" depth Clay in surface >= 40%	1.00 1.00 1.00
280: Columbia taxadjunct stratified very fine sandy loam-----	80	Limitations Saturation < 12" depth Frequent flooding	1.00 0.50	Limitations Saturation < 12" depth Frequent flooding	1.00 0.50	Limitations Saturation < 12" depth Frequent flooding	1.00 0.90
290: Perkins gravelly loam---	90	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Fragments (gravel size) 25- 50%	0.68

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
300: Redsluff gravelly loam--	80	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Fragments (gravel size) 25-50%	0.68
301: Wafap gravelly loam-----	70	Limitations Saturation from 12 to 24" depth Dusty	0.78 0.50	Limitations Saturation from 12 to 24" depth Dusty	0.78 0.50	Limitations AWC 2-4" to 40" Saturation from 12 to 24" depth Fragments >3" 5 to 30%	0.91 0.78 0.32
Hamslough clay-----	15	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 12" depth Clay in surface >= 40%	1.00 1.00 1.00
302: Redtough loam-----	50	Limitations Saturation < 12" depth Dusty	1.00 0.50	Limitations Saturation < 12" depth Dusty	1.00 0.50	Limitations Depth to pan < 20" Saturation < 12" depth AWC < 2" to 40"	1.00 1.00 1.00
Redswale cobbly loam----	35	Limitations Saturation < 12" depth Ponding (any duration) Dusty	1.00 1.00 0.50	Limitations Saturation < 12" depth Ponding (any duration) Dusty	1.00 1.00 0.50	Limitations Ponding (any duration) Depth to pan < 20" Saturation < 12" depth	1.00 1.00 1.00
303: Munjar gravelly loam----	60	Limitations Dusty Saturation from 12 to 24" depth	0.50 0.18	Limitations Dusty Saturation from 12 to 24" depth	0.50 0.18	Limitations AWC 2-4" to 40" Depth to pan 20 to < 40" Saturation from 12 to 24" depth	0.49 0.35 0.18
Tuscan taxadjunct gravelly clay loam-----	20	Limitations Saturation < 12" depth	1.00	Limitations Saturation < 12" depth	1.00	Limitations Saturation < 12" depth Depth to pan 20 to < 40" AWC 2-4" to 40"	1.00 0.54 0.03

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
303: Galt clay-----	10	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 12" depth Clay in surface >= 40%	1.00 1.00 1.00
304: Redtough loam-----	80	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Depth to pan < 20" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00
305: Redtough gravelly loam--	45	Limitations Saturation < 12" depth Dusty	1.00 0.50	Limitations Saturation < 12" depth Dusty	1.00 0.50	Limitations Depth to pan < 20" Saturation < 12" depth AWC 2-4" to 40"	1.00 1.00 0.98
Redswale loam-----	25	Limitations Saturation < 12" depth Ponding (any duration) Dusty	1.00 1.00 0.50	Limitations Saturation < 12" depth Ponding (any duration) Dusty	1.00 1.00 0.50	Limitations Ponding (any duration) Depth to pan < 20" Saturation < 12" depth	1.00 1.00 1.00
Anita, gravelly duripan	20	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Ponding (any duration) Depth to pan < 20" Saturation < 12" depth	1.00 1.00 1.00
306: Duric Xerarents, fill---	50	Limitations Saturation < 12" depth Ponding (any duration) Dusty	1.00 1.00 0.50	Limitations Saturation < 12" depth Ponding (any duration) Dusty	1.00 1.00 0.50	Limitations Ponding (any duration) Saturation < 12" depth	1.00 1.00
Duric Xerarents, cut----	40	Limitations Saturation < 12" depth Ponding (any duration)	1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration)	1.00 1.00	Limitations Ponding (any duration) Depth to pan < 20" Saturation < 12" depth	1.00 1.00 1.00
307: Duric Xerarents clay loam, leveled-----	70	Limitations Saturation < 12" depth Ponding (any duration)	1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration)	1.00 1.00	Limitations Ponding (any duration) Depth to pan < 20" Saturation < 12" depth	1.00 1.00 1.00

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
310: Kimball loam-----	85	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations AWC 2-4" to 40"	0.64
317: Thompsonflat loam-----	75	Limitations Dusty	0.50	Limitations Dusty	0.50	No limitations	
318: Thompsonflat fine sandy loam-----	50	No limitations		No limitations		Limitations AWC 2-4" to 40"	0.07
Oroville gravelly fine sandy loam-----	40	Limitations Ponding (any duration) Saturation from 12 to 24" depth	1.00 0.98	Limitations Ponding (any duration) Saturation from 12 to 24" depth	1.00 0.98	Limitations Ponding (any duration) Saturation from 12 to 24" depth Depth to pan 20 to < 40"	1.00 0.98 0.95
320: Vistarobles sandy loam--	50	Limitations Saturation < 12" depth Ponding (any duration)	1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration)	1.00 1.00	Limitations Ponding (any duration) Depth to pan < 20" Saturation < 12" depth	1.00 1.00 1.00
Redding loam-----	40	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Depth to pan 20 to < 40"	0.10
321: Durixeralfs, fine-loamy, gravelly fine sandy loam-----	50	Limitations Saturation from 12 to 24" depth	0.18	Limitations Saturation from 12 to 24" depth	0.18	Limitations Depth to pan 20 to < 40" Fragments (gravel size) 25- 50% AWC 2-4" to 40"	0.71 0.68 0.38
Durixeralfs, loamy- skeletal, gravelly fine sandy loam-----	20	Limitations Saturation < 12" depth Ponding (any duration)	1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration)	1.00 1.00	Limitations Ponding (any duration) Depth to pan < 20" Saturation < 12" depth	1.00 1.00 1.00

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
321: Typic Petraquepts silty clay-----	15	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Ponding (any duration) Depth to pan < 20" Saturation < 12" depth	1.00 1.00 1.00
330: Wilsoncreek loam, occasionally flooded---	60	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Occasional flooding	0.80
Trainer loam, occasionally flooded---	25	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Occasional flooding	0.80
331: Thompsonflat loam-----	85	Limitations Slopes 15 - 25% Dusty	0.50 0.50	Limitations Dusty	0.50	Limitations Slopes > 15%	1.00
335: Galt clay loam-----	85	Limitations Saturation < 12" depth Ponding (any duration)	1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration)	1.00 1.00	Limitations Ponding (any duration) Saturation < 12" depth Depth to pan 20 to < 40"	1.00 1.00 0.46
336: Galt clay-----	90	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 12" depth Clay in surface >= 40%	1.00 1.00 1.00
337: Galt clay loam-----	85	Limitations Saturation < 12" depth Ponding (any duration)	1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration)	1.00 1.00	Limitations Ponding (any duration) Saturation < 12" depth Depth to pan 20 to < 40"	1.00 1.00 0.46
338: Oxyaquic Xerofluvents silt loam-----	90	Limitations Ponding (any duration) Dusty	1.00 0.50	Limitations Ponding (any duration) Dusty	1.00 0.50	Limitations Ponding (any duration)	1.00

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
339: Oxyaquic Xerofluvents sandy loam, frequently flooded-----	90	Limitations Ponding (any duration) Frequent flooding	1.00 0.50	Limitations Ponding (any duration) Frequent flooding	1.00 0.50	Limitations Ponding (any duration) Frequent flooding	1.00 0.90
340: Rock outcrop, Lovejoy basalt-----	35	Not rated		Not rated		Not rated	
Thermalrocks very gravelly loam-----	25	No limitations		No limitations		Limitations Bedrock depth < 20" AWC < 2" to 40" Fragments >3" 5 to 30%	1.00 1.00 0.92
Campbellhills gravelly loam-----	20	Limitations Saturation < 12" depth Dusty	1.00 0.50	Limitations Saturation < 12" depth Dusty	1.00 0.50	Limitations Saturation < 12" depth Fragments >3" 5 to 30% AWC 2-4" to 40"	1.00 0.32 0.01
341: Elsey loam-----	25	Limitations Saturation from 12 to 24" depth	0.78	Limitations Saturation from 12 to 24" depth	0.78	Limitations Saturation from 12 to 24" depth Bedrock depth 20 to 40"	0.78 0.01
Beatsonhollow gravelly loam-----	25	Limitations Saturation < 12" depth Ponding (any duration) Dusty	1.00 1.00 0.50	Limitations Saturation < 12" depth Ponding (any duration) Dusty	1.00 1.00 0.50	Limitations Bedrock depth < 20" Ponding (any duration) Saturation < 12" depth	1.00 1.00 1.00
Campbellhills gravelly loam-----	20	Limitations Saturation < 12" depth Dusty	1.00 0.50	Limitations Saturation < 12" depth Dusty	1.00 0.50	Limitations Saturation < 12" depth Fragments >3" 5 to 30% AWC 2-4" to 40"	1.00 0.32 0.01
Rock outcrop, Lovejoy basalt-----	20	Not rated		Not rated		Not rated	

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
342: Thermalrocks very gravelly loam-----	40	Limitations Slopes 15 - 25%	0.50	No limitations		Limitations Bedrock depth < 20" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00
Beatsonhollow taxadjunct fine sandy loam-----	35	Limitations Saturation < 12" depth	1.00	Limitations Saturation < 12" depth	1.00	Limitations Bedrock depth < 20" Saturation < 12" depth AWC 2-4" to 40"	1.00 1.00 0.91
Rock outcrop, Lovejoy basalt-----	15	Not rated		Not rated		Not rated	
343: Coalcanyon very cobbly loam-----	50	Limitations Fragments >10" .1 to 3% Dusty Fragments >3" 25 to 75%	0.76 0.50 0.32	Limitations Surface fragments (>10") .1-3% coverage Dusty Surface fragments (>3") 25- 75%	0.76 0.50 0.32	Limitations Fragments > 3" > 30% AWC 2-4" to 40" Slopes 8 to 15%	1.00 0.35 0.16
Coonhollow gravelly loam-----	35	Limitations Fragments >10" >3% Dusty	1.00 0.50	Limitations Surface fragments (>10") >3% coverage Dusty	1.00 0.50	Limitations AWC 2-4" to 40" Fragments >3" 5 to 30% Slopes 8 to 15%	0.57 0.32 0.16
344: Coalcanyon very cobbly loam-----	45	Limitations Slopes 15 - 25% Fragments >10" .1 to 3% Dusty	0.82 0.76 0.50	Limitations Surface fragments (>10") .1-3% coverage Dusty Surface fragments (>3") 25- 75%	0.76 0.50 0.32	Limitations Slopes > 15% Fragments > 3" > 30% AWC 2-4" to 40"	1.00 1.00 0.35

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
344: Coonhollow gravelly loam-----	30	Limitations Fragments >10" >3% Slopes 15 - 25% Dusty	1.00 0.82 0.50	Limitations Surface fragments (>10") >3% coverage Dusty	1.00 0.50	Limitations Slopes > 15% AWC 2-4" to 40" Fragments >3" 5 to 30%	1.00 0.57 0.32
Rock outcrop, Lovejoy basalt-----	15	Not rated		Not rated		Not rated	
346: Cherotable loam-----	50	Limitations Dusty	0.50	Limitations Dusty	0.50	No limitations	
Elsey loam-----	35	Limitations Saturation from 12 to 24" depth	0.78	Limitations Saturation from 12 to 24" depth	0.78	Limitations Saturation from 12 to 24" depth Bedrock depth 20 to 40"	0.78 0.01
347: Haplic Palexeralfs loam	90	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Occasional flooding AWC 2-4" to 40"	0.80 0.05
353: Cherokeespring gravelly silt loam-----	80	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Slopes 8 to 15% Fragments (gravel size) 25-50%	0.63 0.01
355: Coalcanyon very cobbly loam-----	55	Limitations Slopes 15 - 25% Fragments >10" .1 to 3% Dusty	0.82 0.76 0.50	Limitations Surface fragments (>10") .1-3% coverage Dusty Surface fragments (>3") 25-75%	0.76 0.50 0.32	Limitations Slopes > 15% Fragments > 3" > 30% AWC 2-4" to 40"	1.00 1.00 0.35
Talus-----	35	Not rated		Not rated		Not rated	

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
356: Coalcanyon very cobbly loam-----	45	Limitations Slopes > 25% Fragments >10" .1 to 3% Dusty	1.00 0.76 0.50	Limitations Slopes > 40% Surface fragments (>10") .1-3% coverage Dusty	1.00 0.76 0.50	Limitations Slopes > 15% Fragments > 3" > 30% AWC 2-4" to 40"	1.00 1.00 0.35
Rock outcrop, basalt cliffs-----	20	Not rated		Not rated		Not rated	
Talus-----	20	Not rated		Not rated		Not rated	
Coonhollow gravelly loam-----	10	Limitations Slopes > 25% Fragments >10" >3% Dusty	1.00 1.00 0.50	Limitations Slopes > 40% Surface fragments (>10") >3% coverage Dusty	1.00 1.00 0.50	Limitations Slopes > 15% AWC 2-4" to 40" Fragments >3" 5 to 30%	1.00 0.57 0.32
360: Typic Xerofluvents, coarse-loamy-----	45	Limitations Surface sand fractions 70- 90% by wt.	0.76	Limitations Surface sand fractions 70- 90% by wt.	0.76	Limitations AWC 2-4" to 40" Fragments (gravel size) 25- 50%	0.15 0.08
Typic Xerofluvents, sandy-skeletal-----	40	Limitations Surface sand fractions 70- 90% by wt.	0.82	Limitations Surface sand fractions 70- 90% by wt.	0.82	Limitations AWC < 2" to 40" Fragments (gravel size) 25- 50% Loamy coarse sand surface	1.00 0.92 0.50
361: Typic Xerofluvents, sandy-skeletal-----	85	Limitations Surface sand fractions 70- 90% by wt.	0.82	Limitations Surface sand fractions 70- 90% by wt.	0.82	Limitations AWC < 2" to 40" Fragments (gravel size) 25- 50% Loamy coarse sand surface	1.00 0.92 0.50

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
362: Ultic Haploxeralfs, sandstone, low elevation, very deep---	60	No limitations		No limitations		No limitations	
Ultic Haploxeralfs, sandstone, low elevation, deep-----	25	No limitations		No limitations		No limitations	
363: Ultic Haploxeralfs, sandstone, low elevation, very deep---	60	No limitations		No limitations		No limitations	
Ultic Haploxeralfs, sandstone, low elevation, deep-----	30	No limitations		No limitations		Limitations Slopes 8 to 15%	0.63
364: Ultic Haploxeralfs, sandstone, low elevation, deep-----	50	Limitations Slopes 15 - 25%	0.18	No limitations		Limitations Slopes > 15%	1.00
Ultic Haploxeralfs, sandstone, low elevation, very deep---	40	Limitations K factor >.35 and slopes > 8% Slopes 15 - 25%	1.00 0.82	No limitations		Limitations Slopes > 15%	1.00
365: Palexerults gravelly loam-----	80	Limitations Slopes 15 - 25% Dusty	0.50 0.50	Limitations Dusty	0.50	Limitations Slopes > 15% Fragments >3" 5 to 30%	1.00 0.08
366: Palexerults gravelly loam-----	80	Limitations Slopes > 25% Dusty	1.00 0.50	Limitations Slopes > 40% Dusty	1.00 0.50	Limitations Slopes > 15% Fragments >3" 5 to 30%	1.00 0.08

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
370: Palexerults gravelly loam-----	80	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Fragments >3" 5 to 30%	0.08
375: Wickscorner loam-----	80	Limitations Dusty	0.50	Limitations Dusty	0.50	No limitations	
376: Flagcanyon gravelly loam-----	50	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations AWC 2-4" to 40" Depth to pan 20 to < 40" Fragments >3" 5 to 30%	0.73 0.46 0.32
Wickscorner loam-----	35	Limitations Dusty	0.50	Limitations Dusty	0.50	No limitations	
377: Flagcanyon taxadjunct fine sandy loam-----	55	Limitations Ponding (any duration) Saturation from 12 to 24" depth	1.00 0.73	Limitations Ponding (any duration) Saturation from 12 to 24" depth	1.00 0.73	Limitations Ponding (any duration) Saturation from 12 to 24" depth Depth to pan 20 to < 40"	1.00 0.73 0.35
Durixeralfs, clayey- skeletal, loam-----	20	Limitations Saturation < 12" depth Ponding (any duration) Dusty	1.00 1.00 0.50	Limitations Saturation < 12" depth Ponding (any duration) Dusty	1.00 1.00 0.50	Limitations Ponding (any duration) Depth to pan < 20" Saturation < 12" depth	1.00 1.00 1.00
Duraquerts gravelly clay-----	15	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 12" depth Clay in surface >= 40%	1.00 1.00 1.00

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
400: Subaco taxadjunct clay--	85	Limitations Ponding (any duration) Surface clay >= 40% Saturation from 12 to 24" depth	1.00 1.00 0.14	Limitations Ponding (any duration) Surface clay >= 40% Saturation from 12 to 24" depth	1.00 1.00 0.14	Limitations Clay in surface >= 40% Ponding (any duration) Saturation from 12 to 24" depth	1.00 1.00 0.14
415: Ignord fine sandy loam--	90	No limitations		No limitations		No limitations	
416: Calcic Haploxerolls sandy loam-----	90	No limitations		No limitations		Limitations Surface EC 6 to 8 mmhos/cm	0.50
418: Almendra loam-----	85	Limitations Dusty	0.50	Limitations Dusty	0.50	No limitations	
419: Conejo fine sandy loam, overwash-----	85	No limitations		No limitations		No limitations	
420: Conejo clay loam-----	85	No limitations		No limitations		No limitations	
425: Vina fine sandy loam---	85	Limitations Surface sand fractions 70-90% by wt.	0.01	Limitations Surface sand fractions 70-90% by wt.	0.01	No limitations	
426: Vina loam-----	85	Limitations Dusty	0.50	Limitations Dusty	0.50	No limitations	
439: Oxyaquic Xerofluvents clay-----	85	Limitations Ponding (any duration) Surface clay >= 40% Frequent flooding	1.00 1.00 0.50	Limitations Ponding (any duration) Surface clay >= 40% Frequent flooding	1.00 1.00 0.50	Limitations Ponding (any duration) Clay in surface >= 40% Frequent flooding	1.00 1.00 0.90

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
440: Oxyaquic Xerofluvents silt loam, frequently flooded-----	80	Limitations Ponding (any duration) Frequent flooding Dusty	1.00 0.50 0.50	Limitations Ponding (any duration) Frequent flooding Dusty	1.00 0.50 0.50	Limitations Ponding (any duration) Frequent flooding	1.00 0.90
441: Oxyaquic Xerofluvents very fine sandy loam---	90	Limitations Ponding (any duration) Dusty	1.00 0.50	Limitations Ponding (any duration) Dusty	1.00 0.50	Limitations Ponding (any duration)	1.00
442: Durixerolls clay loam---	55	Limitations Ponding (any duration) Saturation from 12 to 24" depth	1.00 0.86	Limitations Ponding (any duration) Saturation from 12 to 24" depth	1.00 0.86	Limitations Ponding (any duration) Saturation from 12 to 24" depth Depth to pan 20 to < 40"	1.00 0.86 0.20
Haploxerolls clay loam--	30	No limitations		No limitations		No limitations	
443: Durixerolls loam-----	60	Limitations Saturation from 12 to 24" depth Dusty	0.86 0.50	Limitations Saturation from 12 to 24" depth Dusty	0.86 0.50	Limitations Saturation from 12 to 24" depth Depth to pan 20 to < 40"	0.86 0.79
Haploxerolls loam-----	25	Limitations Dusty	0.50	Limitations Dusty	0.50	No limitations	
445: Chico loam-----	85	Limitations Dusty	0.50	Limitations Dusty	0.50	No limitations	
447: Charger fine sandy loam	80	No limitations		No limitations		No limitations	
448: Haploxerolls clay loam--	75	No limitations		No limitations		No limitations	

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
449: Haploxerolls loam-----	75	Limitations Dusty	0.50	Limitations Dusty	0.50	No limitations	
500: Lofgren clay-----	45	Limitations Ponding (any duration) Surface clay >= 40% Saturation from 12 to 24" depth	1.00 1.00 0.18	Limitations Ponding (any duration) Surface clay >= 40% Saturation from 12 to 24" depth	1.00 1.00 0.18	Limitations Clay in surface >= 40% Ponding (any duration) Saturation from 12 to 24" depth	1.00 1.00 0.18
Blavo clay-----	40	Limitations Ponding (any duration) Surface clay >= 40% Saturation from 12 to 24" depth	1.00 1.00 0.18	Limitations Ponding (any duration) Surface clay >= 40% Saturation from 12 to 24" depth	1.00 1.00 0.18	Limitations Clay in surface >= 40% Ponding (any duration) Saturation from 12 to 24" depth	1.00 1.00 0.18
501: Lofgren clay, occasionally flooded---	45	Limitations Ponding (any duration) Surface clay >= 40% Saturation from 12 to 24" depth	1.00 1.00 0.18	Limitations Ponding (any duration) Surface clay >= 40% Saturation from 12 to 24" depth	1.00 1.00 0.18	Limitations Clay in surface >= 40% Ponding (any duration) Occasional flooding	1.00 1.00 0.80
Blavo clay, occasionally flooded---	40	Limitations Ponding (any duration) Surface clay >= 40% Saturation from 12 to 24" depth	1.00 1.00 0.18	Limitations Ponding (any duration) Surface clay >= 40% Saturation from 12 to 24" depth	1.00 1.00 0.18	Limitations Clay in surface >= 40% Ponding (any duration) Occasional flooding	1.00 1.00 0.80
502: Blavo silt loam, overwash, occasionally flooded-----	80	Limitations Ponding (any duration) Dusty Saturation from 12 to 24" depth	1.00 0.50 0.18	Limitations Ponding (any duration) Dusty Saturation from 12 to 24" depth	1.00 0.50 0.18	Limitations Ponding (any duration) Occasional flooding Saturation from 12 to 24" depth	1.00 0.80 0.18

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
519: Edjobe silty clay-----	85	Limitations Ponding (any duration) Surface clay >= 40%	1.00 1.00	Limitations Ponding (any duration) Surface clay >= 40%	1.00 1.00	Limitations Ponding (any duration) Clay in surface >= 40%	1.00 1.00
520: Esquon clay-----	60	Limitations Ponding (any duration) Surface clay >= 40%	1.00 1.00	Limitations Ponding (any duration) Surface clay >= 40%	1.00 1.00	Limitations Ponding (any duration) Clay in surface >= 40%	1.00 1.00
Neerdobe clay-----	30	Limitations Ponding (any duration) Surface clay >= 40% Saturation from 12 to 24" depth	1.00 1.00 0.18	Limitations Ponding (any duration) Surface clay >= 40% Saturation from 12 to 24" depth	1.00 1.00 0.18	Limitations Ponding (any duration) Clay in surface >= 40% Saturation from 12 to 24" depth	1.00 1.00 0.18
521: Neerdobe silt loam, overwash-----	85	Limitations Ponding (any duration) Dusty	1.00 0.50	Limitations Ponding (any duration) Dusty	1.00 0.50	Limitations Ponding (any duration)	1.00
522: Clear Lake silty clay loam, overwash-----	80	Limitations Saturation < 12" depth Ponding (any duration) Frequent flooding	1.00 1.00 0.50	Limitations Saturation < 12" depth Ponding (any duration) Frequent flooding	1.00 1.00 0.50	Limitations Ponding (any duration) Saturation < 12" depth Frequent flooding	1.00 1.00 0.90
523: Esquon silty clay loam, overwash-----	80	Limitations Saturation < 12" depth Ponding (any duration) Frequent flooding	1.00 1.00 0.50	Limitations Saturation < 12" depth Ponding (any duration) Frequent flooding	1.00 1.00 0.50	Limitations Ponding (any duration) Saturation < 12" depth Frequent flooding	1.00 1.00 0.90
525: Govstanford loam-----	85	Limitations Dusty	0.50	Limitations Dusty	0.50	No limitations	

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
526: Govstanford loam, occasionally flooded---	85	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Occasional flooding	0.80
528: Neerdobe clay loam-----	90	Limitations Ponding (any duration) Saturation from 12 to 24" depth	1.00 0.94	Limitations Ponding (any duration) Saturation from 12 to 24" depth	1.00 0.94	Limitations Ponding (any duration) Saturation from 12 to 24" depth Depth to pan 20 to < 40"	1.00 0.94 0.86
550: Dunstone loam, dry-----	60	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Bedrock depth < 20" AWC 2-4" to 40"	1.00 0.68
Loafercreek silt loam, dry-----	20	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Bedrock depth 20 to 40" Slopes 8 to 15%	0.54 0.01
551: Dunstone loam, dry-----	35	Limitations Slopes 15 - 25% Dusty	0.82 0.50	Limitations Dusty	0.50	Limitations Bedrock depth < 20" Slopes > 15% AWC 2-4" to 40"	1.00 1.00 0.68
Lomarica loam-----	15	Limitations Slopes > 25% Dusty	1.00 0.50	Limitations Dusty	0.50	Limitations Slopes > 15% AWC 2-4" to 40" Bedrock depth 20 to 40"	1.00 0.37 0.29
Argonaut taxadjunct loam	15	Limitations Slopes 15 - 25% Dusty	0.82 0.50	Limitations Dusty	0.50	Limitations Slopes > 15% Bedrock depth 20 to 40"	1.00 0.46
552: Dunstone gravelly loam--	45	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Bedrock depth < 20" AWC < 2" to 40" Fragments (gravel size) 25- 50%	1.00 1.00 0.08

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
552: Loafercreek gravelly loam-----	40	Limitations Surface fragments <3" >65% Fragments >10" .1 to 3%	1.00 0.76	Limitations Surface fragments <3" >65% Surface fragments (>10") .1-3% coverage	1.00 0.76	Limitations Fragments (gravel size) >50% Bedrock depth 20 to 40" Slopes 8 to 15%	1.00 0.35 0.01
553: Dunstone gravelly loam--	45	Limitations Slopes 15 - 25% Dusty	0.82 0.50	Limitations Dusty	0.50	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Loafercreek gravelly loam-----	40	Limitations Surface fragments <3" >65% Fragments >10" .1 to 3% Slopes 15 - 25%	1.00 0.76 0.18	Limitations Surface fragments <3" >65% Surface fragments (>10") .1-3% coverage	1.00 0.76	Limitations Slopes > 15% Fragments (gravel size) >50% Bedrock depth 20 to 40"	1.00 1.00 0.35
554: Dunstone gravelly loam--	45	Limitations Slopes > 25% Dusty	1.00 0.50	Limitations Slopes > 40% Dusty	1.00 0.50	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Loafercreek gravelly loam-----	40	Limitations Slopes > 25% Surface fragments <3" >65% Fragments >10" .1 to 3%	1.00 1.00 0.76	Limitations Surface fragments <3" >65% Slopes > 40% Surface fragments (>10") .1-3% coverage	1.00 1.00 0.76	Limitations Slopes > 15% Fragments (gravel size) >50% Bedrock depth 20 to 40"	1.00 1.00 0.35
555: Dunstone gravelly loam--	45	Limitations Slopes > 25% Dusty	1.00 0.50	Limitations Slopes > 40% Dusty	1.00 0.50	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
555: Loafercreek gravelly loam-----	40	Limitations Slopes > 25% Surface fragments <3" >65% Fragments >10" .1 to 3%	1.00 1.00 0.76	Limitations Slopes > 40% Surface fragments <3" >65% Surface fragments (>10") .1-3% coverage	1.00 1.00 0.76	Limitations Slopes > 15% Fragments (gravel size) >50% Bedrock depth 20 to 40"	1.00 1.00 0.35
556: Mounthope loam-----	50	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes 8 to 15%	0.01
Hartsmill gravelly loam	40	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations AWC 2-4" to 40" Slopes 8 to 15%	0.12 0.01
557: Mounthope loam-----	50	Limitations Fragments >10" >3% Slopes 15 - 25%	1.00 0.82	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15%	1.00
Hartsmill gravelly loam	40	Limitations Fragments >10" >3% Slopes 15 - 25%	1.00 0.82	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.12
558: Hartsmill gravelly loam	55	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage	1.00 1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.12
Mounthope loam-----	30	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage	1.00 1.00	Limitations Slopes > 15%	1.00
559: Hartsmill gravelly loam	55	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage	1.00 1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.12

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
559: Mounthope loam-----	30	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage	1.00 1.00	Limitations Slopes > 15%	1.00
560: Hartsmill gravelly loam	50	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage	1.00 1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.12
Mounthope loam-----	30	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage	1.00 1.00	Limitations Slopes > 15%	1.00
561: Bigridge loam-----	50	No limitations		No limitations		Limitations AWC 2-4" to 40" Slopes 8 to 15%	0.02 0.01
Minniecreek loam-----	35	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Bedrock depth 20 to 40" Slopes 8 to 15%	0.29 0.01
562: Bigridge loam-----	50	Limitations Slopes 15 - 25%	0.82	No limitations		Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.02
Minniecreek loam-----	35	Limitations Slopes 15 - 25% Dusty	0.82 0.50	Limitations Dusty	0.50	Limitations Slopes > 15% Bedrock depth 20 to 40"	1.00 0.29
563: Bigridge loam-----	50	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.02
Minniecreek loam-----	35	Limitations Slopes > 25% Dusty	1.00 0.50	Limitations Slopes > 40% Dusty	1.00 0.50	Limitations Slopes > 15% Bedrock depth 20 to 40"	1.00 0.29

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
564:							
Bigridge loam-----	50	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.02
Minniecreek loam-----	35	Limitations Slopes > 25% Dusty	1.00 0.50	Limitations Slopes > 40% Dusty	1.00 0.50	Limitations Slopes > 15% Bedrock depth 20 to 40"	1.00 0.29
565:							
Dunstone loam, dry-----	35	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Bedrock depth < 20" AWC 2-4" to 40"	1.00 0.68
Argonaut taxadjunct loam	30	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Bedrock depth 20 to 40" Slopes 8 to 15%	0.46 0.01
Sunnyslope loam-----	20	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Bedrock depth < 20" AWC < 2" to 40"	1.00 1.00
566:							
Dunstone loam, dry-----	45	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Bedrock depth < 20" AWC 2-4" to 40"	1.00 0.68
Loafercreek silt loam, dry-----	20	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Bedrock depth 20 to 40" Slopes 8 to 15%	0.54 0.01
Katskillhill loam-----	15	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Slopes 8 to 15%	0.01
567:							
Dunstone loam, dry-----	40	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Bedrock depth < 20" AWC 2-4" to 40"	1.00 0.68

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
567: Loafercreek silt loam, dry-----	25	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Bedrock depth 20 to 40" Slopes 8 to 15%	0.54 0.01
Argonaut taxadjunct loam	20	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Bedrock depth 20 to 40" Slopes 8 to 15%	0.46 0.01
577: Parkshill coarse sandy loam-----	40	No limitations		No limitations		Limitations Slopes 8 to 15%	0.01
Flanly loam-----	25	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Bedrock depth 20 to 40" AWC 2-4" to 40" Slopes 8 to 15%	0.95 0.14 0.01
Hurleton gravelly sandy loam-----	20	No limitations		No limitations		Limitations AWC < 2" to 40" Bedrock depth 20 to 40" Fragments (gravel size) 25- 50%	1.00 0.84 0.08
578: Flanly loam-----	45	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Bedrock depth 20 to 40" AWC 2-4" to 40" Slopes 8 to 15%	0.95 0.14 0.01
Swedesflat cobbly fine sandy loam-----	35	No limitations		No limitations		Limitations Bedrock depth < 20" AWC < 2" to 40" Fragments >3" 5 to 30%	1.00 1.00 0.92
580: Surnuf taxadjunct loam--	40	No limitations		No limitations		Limitations Slopes 8 to 15%	0.01

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
580: Griffgulch very gravelly silt loam-----	25	Limitations Fragments >10" .1 to 3%	0.19	Limitations Surface fragments (>10") .1-3% coverage	0.19	Limitations AWC 2-4" to 40" Slopes 8 to 15%	0.40 0.01
Rock outcrop, metavolcanic-----	20	Not rated		Not rated		Not rated	
581: Surnuf taxadjunct loam--	65	Limitations Slopes > 25%	1.00	Limitations Slopes 25 to 40%	0.01	Limitations Slopes > 15%	1.00
Griffgulch very gravelly silt loam-----	20	Limitations Slopes > 25% Fragments >10" .1 to 3%	1.00 0.19	Limitations Surface fragments (>10") .1-3% coverage	0.19	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.40
582: Surnuf taxadjunct loam--	50	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15%	1.00
Griffgulch very gravelly silt loam-----	35	Limitations Slopes > 25% Fragments >10" .1 to 3%	1.00 0.19	Limitations Slopes > 40% Surface fragments (>10") .1-3% coverage	1.00 0.19	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.40
583: Surnuf taxadjunct loam--	50	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15%	1.00
Griffgulch very gravelly silt loam-----	35	Limitations Slopes > 25% Fragments >10" .1 to 3%	1.00 0.19	Limitations Slopes > 40% Surface fragments (>10") .1-3% coverage	1.00 0.19	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.40
584: Flanly loam-----	35	Limitations Slopes 15 - 25% Dusty	0.98 0.50	Limitations Dusty	0.50	Limitations Slopes > 15% Bedrock depth 20 to 40" AWC 2-4" to 40"	1.00 0.95 0.14

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
584: Swedesflat cobbly fine sandy loam-----	30	Limitations Slopes 15 - 25%	0.02	No limitations		Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Rackerby very gravelly sandy loam-----	25	Limitations Slopes 15 - 25%	0.68	No limitations		Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
585: Flanly loam-----	45	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Bedrock depth 20 to 40" AWC 2-4" to 40" Slopes 8 to 15%	0.95 0.14 0.01
Sommeyflat loam-----	35	Limitations Dusty	0.50	Limitations Dusty	0.50	No limitations	
586: Sommeyflat loam-----	45	Limitations Dusty Slopes 15 - 25%	0.50 0.18	Limitations Dusty	0.50	Limitations Slopes > 15%	1.00
Mounthope loam-----	40	Limitations Fragments >10" >3% Slopes 15 - 25%	1.00 0.82	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15%	1.00
587: Sommeyflat loam-----	35	Limitations Slopes > 25% Dusty	1.00 0.50	Limitations Slopes 25 to 40% Dusty	0.78 0.50	Limitations Slopes > 15%	1.00
Mounthope loam-----	30	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage	1.00 1.00	Limitations Slopes > 15%	1.00

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
587: Hurleton gravelly sandy loam-----	25	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15% AWC < 2" to 40" Bedrock depth 20 to 40"	1.00 1.00 0.84
588: Ultic Haploxeralfs, thermic, high terrace--	95	Limitations Dusty Saturation from 12 to 24" depth	0.50 0.18	Limitations Dusty Saturation from 12 to 24" depth	0.50 0.18	Limitations AWC 2-4" to 40" Saturation from 12 to 24" depth	0.67 0.18
589: Ultic Haploxeralfs, thermic, high terrace--	95	Limitations Slopes > 25% Dusty Saturation from 12 to 24" depth	1.00 0.50 0.18	Limitations Dusty Slopes 25 to 40% Saturation from 12 to 24" depth	0.50 0.22 0.18	Limitations Slopes > 15% AWC 2-4" to 40" Saturation from 12 to 24" depth	1.00 0.67 0.18
590: Vistarobles sandy loam--	30	Limitations Saturation < 12" depth Ponding (any duration)	1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration)	1.00 1.00	Limitations Ponding (any duration) Depth to pan < 20" Saturation < 12" depth	1.00 1.00 1.00
Redding loam-----	25	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Depth to pan 20 to < 40"	0.10
Argonaut taxadjunct loam	20	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Bedrock depth 20 to 40"	0.46
Haploxererts gravelly silty clay-----	15	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 12" depth Clay in surface >= 40%	1.00 1.00 1.00

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
603: Oroville gravelly fine sandy loam-----	30	Limitations Ponding (any duration) Saturation from 12 to 24" depth	1.00 0.98	Limitations Ponding (any duration) Saturation from 12 to 24" depth	1.00 0.98	Limitations Ponding (any duration) Saturation from 12 to 24" depth Depth to pan 20 to < 40"	1.00 0.98 0.95
Thermalito sandy loam---	25	Limitations Saturation from 12 to 24" depth	0.92	Limitations Saturation from 12 to 24" depth	0.92	Limitations Saturation from 12 to 24" depth Depth to pan 20 to < 40" AWC 2-4" to 40"	0.92 0.35 0.05
Fernandez sandy loam----	15	No limitations		No limitations		No limitations	
Thompsonflat fine sandy loam-----	15	No limitations		No limitations		Limitations AWC 2-4" to 40"	0.07
605: Duric Xerarents fine sandy loam, leveled----	75	Limitations Saturation < 12" depth Ponding (any duration)	1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration)	1.00 1.00	Limitations Ponding (any duration) Depth to pan < 20" Saturation < 12" depth	1.00 1.00 1.00
Oroville gravelly fine sandy loam-----	20	Limitations Ponding (any duration) Saturation from 12 to 24" depth	1.00 0.98	Limitations Ponding (any duration) Saturation from 12 to 24" depth	1.00 0.98	Limitations Ponding (any duration) Saturation from 12 to 24" depth Depth to pan 20 to < 40"	1.00 0.98 0.95
606: Redtough loam-----	45	Limitations Saturation < 12" depth Dusty	1.00 0.50	Limitations Saturation < 12" depth Dusty	1.00 0.50	Limitations Depth to pan < 20" Saturation < 12" depth AWC < 2" to 40"	1.00 1.00 1.00

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
606:							
Fallager loam-----	30	Limitations		Limitations		Limitations	
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (any duration)	1.00
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Depth to pan < 20"	1.00
		Dusty	0.50	Dusty	0.50	Saturation < 12" depth	1.00
Anita, gravelly duripan	15	Limitations		Limitations		Limitations	
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (any duration)	1.00
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Depth to pan < 20"	1.00
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Saturation < 12" depth	1.00
609:							
Anita, gravelly duripan	50	Limitations		Limitations		Limitations	
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (any duration)	1.00
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Depth to pan < 20"	1.00
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Saturation < 12" depth	1.00
Tuscan taxadjunct gravelly clay loam----	40	Limitations		Limitations		Limitations	
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Saturation < 12" depth	1.00
						Depth to pan 20 to < 40"	0.54
						AWC 2-4" to 40"	0.03
614:							
Doemill gravelly loam---	50	Limitations		Limitations		Limitations	
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Bedrock depth < 20"	1.00
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	Saturation < 12" depth	1.00
		Dusty	0.50	>3% coverage		AWC < 2" to 40"	0.99
				Dusty	0.50		
Jokerst very cobbly loam	40	Limitations		Limitations		Limitations	
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Bedrock depth < 20"	1.00
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	Saturation < 12" depth	1.00
				>3% coverage			
615:							
Doemill gravelly loam---	50	Limitations		Limitations		Limitations	
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Bedrock depth < 20"	1.00
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	Saturation < 12" depth	1.00
		Dusty	0.50	>3% coverage		AWC < 2" to 40"	0.99
				Dusty	0.50		

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
615: Jokerst very cobbly loam	40	Limitations Saturation < 12" depth Ponding (any duration) Fragments >10" >3%	1.00 1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration) Surface fragments (>10") >3% coverage	1.00 1.00 1.00	Limitations Bedrock depth < 20" Ponding (any duration) Saturation < 12" depth	1.00 1.00 1.00
616: Jokerst very cobbly loam	35	Limitations Saturation < 12" depth Fragments >10" >3% Dusty	1.00 1.00 0.50	Limitations Saturation < 12" depth Surface fragments (>10") >3% coverage Dusty	1.00 1.00 0.50	Limitations Bedrock depth < 20" Saturation < 12" depth AWC < 2" to 40"	1.00 1.00 1.00
Doemill gravelly loam---	35	Limitations Fragments >10" >3% Saturation < 12" depth Dusty	1.00 0.99 0.50	Limitations Surface fragments (>10") >3% coverage Saturation < 12" depth Dusty	1.00 0.99 0.50	Limitations Bedrock depth < 20" AWC < 2" to 40" Saturation < 12" depth	1.00 0.99 0.99
Typic Haploxeraalfs gravelly loam-----	15	Limitations Fragments >10" >3% Dusty	1.00 0.50	Limitations Surface fragments (>10") >3% coverage Dusty	1.00 0.50	Limitations Slopes 8 to 15% Fragments (gravel size) 25- 50%	0.84 0.68
617: Doemill gravelly loam---	35	Limitations Fragments >10" >3% Saturation from 12 to 24" depth Dusty	1.00 0.94 0.50	Limitations Surface fragments (>10") >3% coverage Saturation from 12 to 24" depth Dusty	1.00 0.94 0.50	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 0.99
Jokerst very cobbly loam	30	Limitations Saturation < 12" depth Fragments >10" >3% Dusty	1.00 1.00 0.50	Limitations Saturation < 12" depth Surface fragments (>10") >3% coverage Dusty	1.00 1.00 0.50	Limitations Bedrock depth < 20" Slopes > 15% Saturation < 12" depth	1.00 1.00 1.00

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
617: Typic Haploxeralfs gravelly loam-----	20	Limitations Slopes > 25% Fragments >10" >3% Dusty	1.00 1.00 0.50	Limitations Surface fragments (>10") >3% coverage Dusty	1.00 1.00 0.50	Limitations Slopes > 15% Fragments (gravel size) 25-50%	1.00 0.68
619: Carhart taxadjunct clay	90	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Clay in surface >= 40% Bedrock depth < 20" Ponding (any duration)	1.00 1.00 1.00
620: Doemill gravelly loam---	40	Limitations Saturation < 12" depth Fragments >10" >3% Dusty	1.00 1.00 0.50	Limitations Saturation < 12" depth Surface fragments (>10") >3% coverage Dusty	1.00 1.00 0.50	Limitations Bedrock depth < 20" Saturation < 12" depth AWC < 2" to 40"	1.00 1.00 0.99
Jokerst very cobbly loam	25	Limitations Saturation < 12" depth Ponding (any duration) Fragments >10" >3%	1.00 1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration) Surface fragments (>10") >3% coverage	1.00 1.00 1.00	Limitations Bedrock depth < 20" Ponding (any duration) Saturation < 12" depth	1.00 1.00 1.00
Ultic Haploxeralfs, thermic, gravelly loam	20	Limitations Fragments >10" >3% Dusty	1.00 0.50	Limitations Surface fragments (>10") >3% coverage Dusty	1.00 0.50	Limitations Fragments >3" 5 to 30% AWC 2-4" to 40" Bedrock depth 20 to 40"	0.68 0.49 0.35
621: Doemill gravelly loam---	30	Limitations Fragments >10" >3% Saturation < 12" depth Dusty	1.00 0.99 0.50	Limitations Surface fragments (>10") >3% coverage Saturation < 12" depth Dusty	1.00 0.99 0.50	Limitations Bedrock depth < 20" AWC < 2" to 40" Saturation < 12" depth	1.00 0.99 0.99
Jokerst very cobbly loam	30	Limitations Saturation < 12" depth Fragments >10" >3% Dusty	1.00 1.00 0.50	Limitations Saturation < 12" depth Surface fragments (>10") >3% coverage Dusty	1.00 1.00 0.50	Limitations Bedrock depth < 20" Saturation < 12" depth AWC < 2" to 40"	1.00 1.00 1.00

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
621: Ultic Haploxeralfs, thermic, gravelly loam	20	Limitations Fragments >10" >3% Dusty	1.00 0.50	Limitations Surface fragments (>10") >3% coverage Dusty	1.00 0.50	Limitations Fragments >3" 5 to 30% AWC 2-4" to 40" Slopes 8 to 15%	0.68 0.49 0.37
622: Xerorthents, shallow----	40	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Surface fragments (>10") >3% coverage Slopes 25 to 40%	1.00 0.08	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Typic Haploxeralfs gravelly loam-----	30	Limitations Slopes > 25% Fragments >10" >3% Dusty	1.00 1.00 0.50	Limitations Surface fragments (>10") >3% coverage Dusty	1.00 0.50	Limitations Slopes > 15% Fragments (gravel size) 25- 50%	1.00 0.68
Rock outcrop, mudflow- breccia cliffs-----	15	Not rated		Not rated		Not rated	
623: Xerorthents, shallow----	40	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage	1.00 1.00	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Typic Haploxeralfs gravelly loam-----	25	Limitations Slopes > 25% Fragments >10" >3% Dusty	1.00 1.00 0.50	Limitations Slopes > 40% Surface fragments (>10") >3% coverage Dusty	1.00 1.00 0.50	Limitations Slopes > 15% Fragments (gravel size) 25- 50%	1.00 0.68
Rock outcrop, mudflow- breccia cliffs-----	20	Not rated		Not rated		Not rated	
624: Ultic Haploxeralfs, mesic, gravelly loam---	60	Limitations Fragments >10" .1 to 3%	0.19	Limitations Surface fragments (>10") .1-3% coverage	0.19	Limitations AWC 2-4" to 40"	0.04

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
624: Rockstripe very gravelly loam-----	25	Limitations Fragments >10" >3% Dusty	1.00 0.50	Limitations Surface fragments (>10") >3% coverage Dusty	1.00 0.50	Limitations Bedrock depth < 20" AWC < 2" to 40" Fragments >3" 5 to 30%	1.00 1.00 0.681
625: Ultic Haploxeralfs, mesic, gravelly loam---	50	Limitations Fragments >10" .1 to 3% Slopes 15 - 25%	0.19 0.08	Limitations Surface fragments (>10") .1-3% coverage	0.19	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.04
Rockstripe very gravelly loam-----	35	Limitations Fragments >10" >3% Dusty Slopes 15 - 25%	1.00 0.50 0.18	Limitations Surface fragments (>10") >3% coverage Dusty	1.00 0.50	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
626: Ultic Haploxeralfs gravelly loam-----	40	Limitations Slopes > 25% Fragments >10" .1 to 3% Dusty	1.00 0.76 0.50	Limitations Slopes > 40% Surface fragments (>10") .1-3% coverage Dusty	1.00 0.76 0.50	Limitations Slopes > 15% Fragments (gravel size) 25-50%	1.00 0.08
Rockstripe very gravelly loam-----	35	Limitations Slopes > 25% Fragments >10" >3% Dusty	1.00 1.00 0.50	Limitations Slopes > 40% Surface fragments (>10") >3% coverage Dusty	1.00 1.00 0.50	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Rock outcrop, mudflow-breccia cliffs-----	15	Not rated		Not rated		Not rated	
627: Ultic Haploxeralfs gravelly loam-----	40	Limitations Slopes > 25% Fragments >10" .1 to 3% Dusty	1.00 0.76 0.50	Limitations Slopes > 40% Surface fragments (>10") .1-3% coverage Dusty	1.00 0.76 0.50	Limitations Slopes > 15% Fragments (gravel size) 25-50%	1.00 0.08

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
627: Rockstripe very gravelly loam-----	35	Limitations Slopes > 25% Fragments >10" >3% Dusty	1.00 1.00 0.50	Limitations Slopes > 40% Surface fragments (>10") >3% coverage Dusty	1.00 1.00 0.50	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Rock outcrop, mudflow-breccia cliffs-----	15	Not rated		Not rated		Not rated	
628: Rockstripe very gravelly loam-----	40	Limitations Slopes > 25% Fragments >10" >3% Dusty	1.00 1.00 0.50	Limitations Slopes > 40% Surface fragments (>10") >3% coverage Dusty	1.00 1.00 0.50	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Ultic Haploxeralfs gravelly loam-----	35	Limitations Slopes > 25% Fragments >10" .1 to 3% Dusty	1.00 0.76 0.50	Limitations Slopes > 40% Surface fragments (>10") .1-3% coverage Dusty	1.00 0.76 0.50	Limitations Slopes > 15% Fragments (gravel size) 25-50%	1.00 0.08
Rock outcrop, mudflow-breccia cliffs-----	20	Not rated		Not rated		Not rated	
629: Slideland gravelly loam	80	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Slopes 8 to 15% Fragments (gravel size) 25-50%	0.37 0.01
630: Slideland gravelly loam	80	Limitations Slopes 15 - 25% Dusty	0.50 0.50	Limitations Dusty	0.50	Limitations Slopes > 15% Fragments (gravel size) 25-50%	1.00 0.01

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
631: Slideland gravelly loam	80	Limitations Slopes > 25% Dusty	1.00 0.50	Limitations Slopes > 40% Dusty	1.00 0.50	Limitations Slopes > 15% Fragments (gravel size) 25-50%	1.00 0.01
632: Ultic Haploxeralfs, conglomerate, very deep	50	No limitations		No limitations		Limitations Slopes 8 to 15%	0.84
Ultic Haploxeralfs, conglomerate, moderately deep-----	40	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations AWC < 2" to 40" Bedrock depth 20 to 40"	1.00 0.84
633: Ultic Haploxeralfs, conglomerate, very deep	60	Limitations Slopes 15 - 25%	0.50	No limitations		Limitations Slopes > 15%	1.00
Ultic Haploxeralfs, conglomerate, moderately deep-----	30	Limitations Fragments >10" >3% Slopes 15 - 25%	1.00 0.50	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15% AWC < 2" to 40" Bedrock depth 20 to 40"	1.00 1.00 0.84
634: Ultic Haploxeralfs, conglomerate, very deep	60	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15%	1.00
Ultic Haploxeralfs, conglomerate, moderately deep-----	30	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage	1.00 1.00	Limitations Slopes > 15% AWC < 2" to 40" Bedrock depth 20 to 40"	1.00 1.00 0.84

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
635: Ultic Haploxeralfs, conglomerate, very deep	50	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15%	1.00
Ultic Haploxeralfs, conglomerate, moderately deep-----	40	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage	1.00 1.00	Limitations Slopes > 15% AWC < 2" to 40" Bedrock depth 20 to 40"	1.00 1.00 0.84
636: Ultic Haploxeralfs, conglomerate, moderately deep-----	50	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage	1.00 1.00	Limitations Slopes > 15% AWC < 2" to 40" Bedrock depth 20 to 40"	1.00 1.00 0.84
Ultic Haploxeralfs, conglomerate, very deep	40	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15%	1.00
637: Ultic Haploxeralfs, sandstone-----	80	No limitations		No limitations		Limitations Slopes 8 to 15%	0.01
638: Ultic Haploxeralfs, sandstone-----	80	Limitations Slopes 15 - 25%	0.82	No limitations		Limitations Slopes > 15%	1.00
639: Ultic Haploxeralfs, sandstone-----	75	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15%	1.00
640: Ultic Haploxeralfs, sandstone-----	75	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15%	1.00

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
641: Ultic Haploxeralfs, sandstone-----	75	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15%	1.00
642: Chinacamp gravelly loam	70	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	No limitations	
643: Chinacamp gravelly loam	70	Limitations Fragments >10" >3% Slopes 15 - 25%	1.00 0.50	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15%	1.00
644: Chinacamp gravelly loam	70	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage	1.00 1.00	Limitations Slopes > 15%	1.00
645: Chinacamp gravelly loam	70	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage	1.00 1.00	Limitations Slopes > 15%	1.00
646: Coalcanyon taxadjunct very gravelly loam-----	80	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Fragments >3" 5 to 30%	0.92
647: Coalcanyon taxadjunct very gravelly loam-----	75	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Slopes > 15% Fragments >3" 5 to 30%	1.00 0.92
648: Coalcanyon taxadjunct very gravelly loam-----	80	Limitations Slopes > 25% Dusty	1.00 0.50	Limitations Slopes > 40% Dusty	1.00 0.50	Limitations Slopes > 15% Fragments >3" 5 to 30%	1.00 0.92

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
649: Coalcanyon taxadjunct very gravelly loam-----	75	Limitations Slopes > 25% Dusty	1.00 0.50	Limitations Slopes > 40% Dusty	1.00 0.50	Limitations Slopes > 15% Fragments >3" 5 to 30%	1.00 0.92
650: Schott very gravelly loam-----	65	Limitations Very dusty Fragments >10" >3%	1.00 1.00	Limitations Very dusty Surface fragments (>10") >3% coverage	1.00 1.00	Limitations AWC 2-4" to 40"	0.49
651: Schott very gravelly loam-----	65	Limitations Very dusty Slopes > 25% Fragments >10" >3%	1.00 1.00 1.00	Limitations Very dusty Surface fragments (>10") >3% coverage Slopes 25 to 40%	1.00 1.00 0.04	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.49
652: Schott very gravelly loam-----	65	Limitations Slopes > 25% Very dusty Fragments >10" >3%	1.00 1.00 1.00	Limitations Very dusty Slopes > 40% Surface fragments (>10") >3% coverage	1.00 1.00 1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.49
Rock outcrop, mudflow breccia-----	20	Not rated		Not rated		Not rated	
654: Coridge bouldery loam---	70	Limitations Fragments >10" >3% Dusty Saturation from 12 to 24" depth	1.00 0.50 0.22	Limitations Surface fragments (>10") >3% coverage Dusty Saturation from 12 to 24" depth	1.00 0.50 0.22	Limitations Bedrock depth 20 to 40" AWC 2-4" to 40" Fragments >3" 5 to 30%	0.90 0.43 0.32
Rock outcrop, Cohasset basalt-----	20	Not rated		Not rated		Not rated	

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
655: Coridge bouldery loam---	70	Limitations Fragments >10" >3% Dusty	1.00 0.50	Limitations Surface fragments (>10") >3% coverage Dusty	1.00 0.50	Limitations Bedrock depth 20 to 40" AWC 2-4" to 40" Fragments >3" 5 to 30%	0.90 0.43 0.32
Rock outcrop, Cohasset basalt-----	20	Not rated		Not rated		Not rated	
656: Rock outcrop, basalt cliffs-----	40	Not rated		Not rated		Not rated	
Coalcanyon taxadjunct very gravelly loam----	40	Limitations Slopes > 25% Dusty	1.00 0.50	Limitations Dusty Slopes 25 to 40%	0.50 0.22	Limitations Slopes > 15% Fragments >3" 5 to 30%	1.00 0.92
657: Bonneyridge sandy loam--	35	No limitations		No limitations		Limitations AWC 2-4" to 40"	0.02
Chawanakee gravelly sandy loam-----	30	No limitations		No limitations		Limitations Bedrock depth < 20" AWC < 2" to 40"	1.00 1.00
Rock outcrop, quartz diorite-----	20	Not rated		Not rated		Not rated	
658: Bonneyridge sandy loam--	35	Limitations K factor >.35 and slopes > 8% Slopes 15 - 25%	1.00 0.50	No limitations		Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.02
Chawanakee gravelly sandy loam-----	30	Limitations K factor >.35 and slopes > 8% Slopes 15 - 25%	1.00 0.50	No limitations		Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
658: Rock outcrop, quartz diorite-----	25	Not rated		Not rated		Not rated	
659: Bonneyridge sandy loam--	35	Limitations Slopes > 25% K factor >.35 and slopes > 8%	1.00 1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.02
Chawanakee gravelly sandy loam-----	30	Limitations Slopes > 25% K factor >.35 and slopes > 8%	1.00 1.00	Limitations Slopes > 40%	1.00	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Rock outcrop, quartz diorite-----	25	Not rated		Not rated		Not rated	
660: Bonneyridge sandy loam--	30	Limitations Slopes > 25% K factor >.35 and slopes > 8%	1.00 1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.02
Chawanakee gravelly sandy loam-----	30	Limitations Slopes > 25% K factor >.35 and slopes > 8%	1.00 1.00	Limitations Slopes > 40%	1.00	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Rock outcrop, quartz diorite-----	30	Not rated		Not rated		Not rated	
661: Millerridge gravelly sandy clay loam-----	45	No limitations		No limitations		Limitations Bedrock depth 20 to 40" Fragments >3" 5 to 30%	0.77 0.68

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
661: Boxrobber cobbly sandy clay loam-----	40	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Bedrock depth < 20" AWC < 2" to 40" Fragments >3" 5 to 30%	1.00 1.00 0.92
662: Millerridge gravelly sandy clay loam-----	45	No limitations		No limitations		Limitations Slopes > 15% Bedrock depth 20 to 40" Fragments >3" 5 to 30%	1.00 0.77 0.68
Boxrobber cobbly sandy clay loam-----	40	Limitations Fragments >10" >3% Slopes > 25%	1.00 1.00	Limitations Surface fragments (>10") >3% coverage Slopes 25 to 40%	1.00 0.14	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
663: Millerridge gravelly sandy clay loam-----	45	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15% Bedrock depth 20 to 40" Fragments >3" 5 to 30%	1.00 0.77 0.68
Boxrobber cobbly sandy clay loam-----	40	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Surface fragments (>10") >3% coverage Slopes > 40%	1.00 1.00	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
664: Millerridge gravelly sandy clay loam-----	45	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15% Bedrock depth 20 to 40" Fragments >3" 5 to 30%	1.00 0.77 0.68

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
664: Boxrober cobbly sandy clay loam-----	40	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage	1.00 1.00	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
665: Surnuf gravelly loam----	40	No limitations		No limitations		Limitations Slopes 8 to 15%	0.01
Bigridge loam-----	40	No limitations		No limitations		Limitations AWC 2-4" to 40" Slopes 8 to 15%	0.02 0.01
666: Surnuf gravelly loam----	40	Limitations Slopes 15 - 25%	0.82	No limitations		Limitations Slopes > 15%	1.00
Bigridge loam-----	40	Limitations Slopes 15 - 25%	0.82	No limitations		Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.02
667: Surnuf gravelly loam----	40	Limitations Slopes > 25%	1.00	Limitations Slopes 25 to 40%	0.92	Limitations Slopes > 15%	1.00
Bigridge loam-----	40	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.02
668: Surnuf gravelly loam----	40	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15%	1.00
Bigridge loam-----	40	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.02

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
669:							
Oroshore gravelly loam--	35	Limitations Dusty Fragments >10" .1 to 3%	0.50 0.19	Limitations Dusty Surface fragments (>10") .1-3% coverage	0.50 0.19	Limitations Bedrock depth 20 to 40" Fragments (gravel size) 25-50% Slopes 8 to 15%	0.16 0.08 0.01
Mounthope loam-----	25	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes 8 to 15%	0.01
Dunstone gravelly loam--	20	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Bedrock depth < 20" AWC < 2" to 40" Fragments (gravel size) 25-50%	1.00 1.00 0.08
670:							
Oroshore gravelly loam--	35	Limitations Slopes 15 - 25% Dusty Fragments >10" .1 to 3%	0.50 0.50 0.19	Limitations Dusty Surface fragments (>10") .1-3% coverage	0.50 0.19	Limitations Slopes > 15% Bedrock depth 20 to 40" Fragments (gravel size) 25-50%	1.00 0.16 0.08
Mounthope loam-----	25	Limitations Fragments >10" >3% Slopes 15 - 25%	1.00 0.50	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15%	1.00
Dunstone gravelly loam--	20	Limitations Slopes 15 - 25% Dusty	0.50 0.50	Limitations Dusty	0.50	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
671:							
Oroshore gravelly loam--	35	Limitations Slopes > 25% Dusty Fragments >10" .1 to 3%	1.00 0.50 0.19	Limitations Slopes > 40% Dusty Surface fragments (>10") .1-3% coverage	1.00 0.50 0.19	Limitations Slopes > 15% Bedrock depth 20 to 40" Fragments (gravel size) 25-50%	1.00 0.16 0.08

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
671:							
Mounthope loam-----	25	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage	1.00 1.00	Limitations Slopes > 15%	1.00
Dunstone gravelly loam--	20	Limitations Slopes > 25% Dusty	1.00 0.50	Limitations Slopes > 40% Dusty	1.00 0.50	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
672:							
Oroshore gravelly loam--	30	Limitations Slopes > 25% Dusty Fragments >10" .1 to 3%	1.00 0.50 0.19	Limitations Slopes > 40% Dusty Surface fragments (>10") .1-3% coverage	1.00 0.50 0.19	Limitations Slopes > 15% Bedrock depth 20 to 40" Fragments (gravel size) 25-50%	1.00 0.16 0.08
Mounthope loam-----	25	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage	1.00 1.00	Limitations Slopes > 15%	1.00
Dunstone gravelly loam--	25	Limitations Slopes > 25% Dusty	1.00 0.50	Limitations Slopes > 40% Dusty	1.00 0.50	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
674:							
Chawanakee gravelly sandy loam-----	30	Limitations Slopes > 25% K factor >.35 and slopes > 8%	1.00 1.00	Limitations Slopes > 40%	1.00	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Bonneyridge sandy loam--	30	Limitations Slopes > 25% K factor >.35 and slopes > 8%	1.00 1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.02
Rock outcrop, quartz diorite-----	30	Not rated		Not rated		Not rated	

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
675: Clearhayes sandy clay loam-----	70	Limitations Saturation from 12 to 24" depth	0.32	Limitations Saturation from 12 to 24" depth	0.32	Limitations Occasional flooding AWC 2-4" to 40" Saturation from 12 to 24" depth	0.80 0.62 0.32
Hamslough clay-----	15	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 12" depth Clay in surface >= 40%	1.00 1.00 1.00
676: Carhart clay-----	50	Limitations Ponding (any duration) Surface clay >= 40% Saturation from 12 to 24" depth	1.00 1.00 0.78	Limitations Ponding (any duration) Surface clay >= 40% Saturation from 12 to 24" depth	1.00 1.00 0.78	Limitations Ponding (any duration) Clay in surface >= 40% Saturation from 12 to 24" depth	1.00 1.00 0.78
Anita taxadjunct clay---	40	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Bedrock depth < 20" Ponding (any duration) Saturation < 12" depth	1.00 1.00 1.00
677: Tuscan gravelly loam----	40	Limitations Saturation < 12" depth Dusty	1.00 0.50	Limitations Saturation < 12" depth Dusty	1.00 0.50	Limitations Depth to pan < 20" Saturation < 12" depth AWC < 2" to 40"	1.00 1.00 1.00
Fallager loam-----	25	Limitations Saturation < 12" depth Ponding (any duration) Dusty	1.00 1.00 0.50	Limitations Saturation < 12" depth Ponding (any duration) Dusty	1.00 1.00 0.50	Limitations Ponding (any duration) Depth to pan < 20" Saturation < 12" depth	1.00 1.00 1.00
Anita, gravelly duripan	15	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration) Surface clay >= 40%	1.00 1.00 1.00	Limitations Ponding (any duration) Depth to pan < 20" Saturation < 12" depth	1.00 1.00 1.00

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
679:							
Lucksev loam-----	40	Limitations		Limitations		Limitations	
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Bedrock depth < 20"	1.00
		Dusty	0.50	Dusty	0.50	Saturation < 12" depth	1.00
						AWC 2-4" to 40"	0.91
Butteside gravelly loam	35	Limitations		Limitations		Limitations	
		Dusty	0.50	Dusty	0.50	Bedrock depth 20 to 40"	0.71
						Fragments (gravel size) 25-50%	0.01
Carhart clay-----	15	Limitations		Limitations		Limitations	
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Clay in surface >= 40%	1.00
		Saturation from 12 to 24" depth	0.78	Saturation from 12 to 24" depth	0.78	Saturation from 12 to 24" depth	0.78
						Bedrock depth 20 to 40"	0.46
680:							
Lucksev loam-----	45	Limitations		Limitations		Limitations	
		Slopes > 25%	1.00	Slopes 25 to 40%	0.78	Bedrock depth < 20"	1.00
		Dusty	0.50	Dusty	0.50	Slopes > 15%	1.00
						AWC 2-4" to 40"	0.91
Butteside gravelly loam	40	Limitations		Limitations		Limitations	
		Slopes > 25%	1.00	Surface fragments (>10")	0.76	Slopes > 15%	1.00
		Fragments >10" .1 to 3%	0.76	.1-3% coverage		Bedrock depth 20 to 40"	0.71
		Dusty	0.50	Dusty	0.50	Fragments (gravel size) 25-50%	0.01
683:							
Typic Haploxeralfs, magnesian, low elevation	50	Limitations		Limitations		Limitations	
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	Fragments (gravel size) 25-50%	0.99
		Dusty	0.50	>3% coverage		AWC 2-4" to 40"	0.58
				Dusty	0.50	Bedrock depth 20 to 40"	0.46
Earlal very gravelly loam-----	20	Limitations		Limitations		Limitations	
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	Bedrock depth < 20"	1.00
		Dusty	0.50	>3% coverage		AWC < 2" to 40"	1.00
				Dusty	0.50	Fragments >3" 5 to 30%	0.32

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
683: Rock outcrop, serpentinite-----	15	Not rated		Not rated		Not rated	
684: Typic Haploxeralfs, magnesian, low elevation	50	Limitations Fragments >10" >3% Slopes 15 - 25% Dusty	1.00 0.82 0.50	Limitations Surface fragments (>10") >3% coverage Dusty	1.00 0.50	Limitations Slopes > 15% Fragments (gravel size) 25- 50% AWC 2-4" to 40"	1.00 0.99 0.58
Earlal very gravelly loam-----	20	Limitations Fragments >10" >3% Slopes 15 - 25% Dusty	1.00 0.50 0.50	Limitations Surface fragments (>10") >3% coverage Dusty	1.00 0.50	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Rock outcrop, serpentinite-----	15	Not rated		Not rated		Not rated	
685: Bosquejo taxadjunct, gravelly substratum----	70	Limitations Ponding (any duration) Surface clay >= 40%	1.00 1.00	Limitations Ponding (any duration) Surface clay >= 40%	1.00 1.00	Limitations Ponding (any duration) Clay in surface >= 40%	1.00 1.00
686: Redsluff taxadjunct clay loam-----	70	No limitations		No limitations		No limitations	
687: Xerorthents, shallow----	45	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Bedrock depth < 20" AWC < 2" to 40" Fragments (gravel size) 25- 50%	1.00 1.00 0.08
Typic Haploxeralfs gravelly loam-----	40	Limitations Fragments >10" >3% Dusty	1.00 0.50	Limitations Surface fragments (>10") >3% coverage Dusty	1.00 0.50	Limitations Fragments (gravel size) 25- 50% Slopes 8 to 15%	0.68 0.63

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
700:							
Retsongulch very gravelly sandy loam----	40	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage	1.00 1.00	Limitations Slopes > 15% AWC < 2" to 40" Bedrock depth 20 to 40"	1.00 1.00 0.46
Flumewall gravelly sandy loam-----	25	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage	1.00 1.00	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
701:							
Powellton gravelly loam	40	Limitations Slopes > 25% Very dusty	1.00 1.00	Limitations Slopes > 40% Very dusty	1.00 1.00	Limitations Slopes > 15%	1.00
Obstruction gravelly sandy loam-----	30	Limitations Slopes > 25% Organic surface layer >= 4" thick Very dusty	1.00 1.00 1.00	Limitations Slopes > 40% Organic surface layer >= 4" thick Very dusty	1.00 1.00 1.00	Limitations Slopes > 15% Organic surface layer >= 4" thick	1.00 1.00
702:							
Cerpone gravelly loam---	50	No limitations		No limitations		Limitations Slopes 8 to 15%	0.37
Typic Haploxeralfs, magnesian, very gravelly loam-----	20	Limitations Fragments >10" >3% Dusty	1.00 0.50	Limitations Surface fragments (>10") >3% coverage Dusty	1.00 0.50	Limitations Fragments (gravel size) 25-50% Fragments >3" 5 to 30% Slopes 8 to 15%	0.55 0.32 0.16
Earlal very gravelly loam-----	15	Limitations Fragments >10" >3% Dusty	1.00 0.50	Limitations Surface fragments (>10") >3% coverage Dusty	1.00 0.50	Limitations Bedrock depth < 20" AWC < 2" to 40" Fragments >3" 5 to 30%	1.00 1.00 0.32

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
703:							
Cerpone gravelly loam---	30	Limitations Slopes 15 - 25%	0.82	No limitations		Limitations Slopes > 15%	1.00
Typic Haploxeralfs, magnesian, very gravelly loam-----	30	Limitations Slopes > 25% Fragments >10" >3% Dusty	1.00 1.00 0.50	Limitations Surface fragments (>10") >3% coverage Dusty	1.00 1.00 0.50	Limitations Slopes > 15% Fragments (gravel size) 25-50% Fragments >3" 5 to 30%	1.00 0.55 0.32
Earlal very gravelly loam-----	15	Limitations Fragments >10" >3% Slopes > 25% Dusty	1.00 1.00 0.50	Limitations Surface fragments (>10") >3% coverage Dusty	1.00 1.00 0.50	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1 1.00 1.00
Rock outcrop, serpentinite-----	15	Not rated		Not rated		Not rated	
704:							
Typic Haploxeralfs, magnesian, very gravelly loam-----	40	Limitations Slopes > 25% Fragments >10" >3% Dusty	1.00 1.00 0.50	Limitations Slopes > 40% Surface fragments (>10") >3% coverage Dusty	1.00 1.00 0.50	Limitations Slopes > 15% Fragments (gravel size) 25-50% Fragments >3" 5 to 30%	1.00 0.55 0.32
Earlal very gravelly loam-----	20	Limitations Slopes > 25% Fragments >10" >3% Dusty	1.00 1.00 0.50	Limitations Surface fragments (>10") >3% coverage Slopes > 40% Dusty	1.00 1.00 1.00 0.50	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Cerpone gravelly loam---	15	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15%	1.00

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
704: Rock outcrop, serpentinite-----	15	Not rated		Not rated		Not rated	
705: Typic Haploxeralfs, magnesian, very gravelly loam-----	35	Limitations Slopes > 25% Fragments >10" >3% Dusty	1.00 1.00 0.50	Limitations Slopes > 40% Surface fragments (>10") >3% coverage Dusty	1.00 1.00 0.50	Limitations Slopes > 15% Fragments (gravel size) 25-50% Fragments >3" 5 to 30%	1.00 0.55 0.32
Earlal very gravelly loam-----	25	Limitations Slopes > 25% Fragments >10" >3% Dusty	1.00 1.00 0.50	Limitations Slopes > 40% Surface fragments (>10") >3% coverage Dusty	1.00 1.00 0.50	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Cerpone gravelly loam---	15	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15%	1.00
Rock outcrop, serpentinite-----	15	Not rated		Not rated		Not rated	
711: Dixmine very gravelly loam-----	45	No limitations		No limitations		Limitations Slopes 8 to 15%	0.01
Toadtown loam-----	40	Limitations Very dusty	1.00	Limitations Very dusty	1.00	Limitations Slopes 8 to 15%	0.01
712: Dixmine very gravelly loam-----	50	Limitations Slopes 15 - 25%	0.82	No limitations		Limitations Slopes > 15%	1.00

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
712: Toadtown loam-----	40	Limitations Very dusty Slopes 15 - 25%	1.00 0.82	Limitations Very dusty	1.00	Limitations Slopes > 15%	1.00
713: Dixmine very gravelly loam-----	50	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15%	1.00
Toadtown loam-----	35	Limitations Slopes > 25% Very dusty	1.00 1.00	Limitations Very dusty Slopes > 40%	1.00 1.00	Limitations Slopes > 15%	1.00
714: Dixmine very gravelly loam-----	50	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15%	1.00
Toadtown loam-----	35	Limitations Slopes > 25% Very dusty	1.00 1.00	Limitations Slopes > 40% Very dusty	1.00 1.00	Limitations Slopes > 15%	1.00
715: Logtrain gravelly loam--	40	Limitations Slopes > 25% Fragments >10" .1 to 3%	1.00 0.19	Limitations Slopes > 40% Surface fragments (>10") .1-3% coverage	1.00 0.19	Limitations Slopes > 15%	1.00
Bottlehill very gravelly loam-----	30	Limitations Slopes > 25% Fragments >10" .1 to 3%	1.00 0.76	Limitations Slopes > 40% Surface fragments (>10") .1-3% coverage	1.00 0.76	Limitations Slopes > 15% AWC < 2" to 40" Bedrock depth 20 to 40"	1.00 0.99 0.29
Walkermine very gravelly loam-----	20	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage	1.00 1.00	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
716: Griffgulch very gravelly silt loam-----	40	Limitations Fragments >10" .1 to 3%	0.19	Limitations Surface fragments (>10") .1-3% coverage	0.19	Limitations AWC 2-4" to 40"	0.40
Surnuf gravelly loam----	40	No limitations		No limitations		Limitations Slopes 8 to 15%	0.01
717: Griffgulch very gravelly silt loam-----	40	Limitations Slopes 15 - 25% Fragments >10" .1 to 3%	0.82 0.19	Limitations Surface fragments (>10") .1-3% coverage	0.19	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.40
Surnuf gravelly loam----	40	Limitations Slopes 15 - 25%	0.82	No limitations		Limitations Slopes > 15%	1.00
718: Griffgulch very gravelly silt loam-----	35	Limitations Slopes > 25% Fragments >10" .1 to 3%	1.00 0.19	Limitations Slopes > 40% Surface fragments (>10") .1-3% coverage	1.00 0.19	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.40
Surnuf gravelly loam----	35	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15%	1.00
Spine taxadjunct very cobble loam-----	15	Limitations Slopes > 25% Fragments >10" >3% Dusty	1.00 1.00 0.50	Limitations Slopes > 40% Surface fragments (>10") >3% coverage Dusty	1.00 1.00 0.50	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
719: Griffgulch very gravelly silt loam-----	35	Limitations Slopes > 25% Fragments >10" .1 to 3%	1.00 0.19	Limitations Slopes > 40% Surface fragments (>10") .1-3% coverage	1.00 0.19	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.40

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
719: Surnuf gravelly loam----	30	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15%	1.00
Spine taxadjunct very cobble loam-----	20	Limitations Slopes > 25% Fragments >10" >3% Dusty	1.00 1.00 0.50	Limitations Slopes > 40% Surface fragments (>10") >3% coverage Dusty	1.00 1.00 0.50	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
720: Dystrocherepts extremely gravelly loam-----	40	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage	1.00 1.00	Limitations Slopes > 15% AWC 2-4" to 40" Bedrock depth 20 to 40"	1.00 0.95 0.01
Haploxeralfs very gravelly loam-----	30	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage	1.00 1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.98
Rock outcrop, metavolcanic-----	15	Not rated		Not rated		Not rated	
721: Haploxerands, granitic till, medial sandy loam	70	Limitations Very dusty Fragments >10" >3%	1.00 1.00	Limitations Very dusty Surface fragments (>10") >3% coverage	1.00 1.00	Limitations Slopes 8 to 15% AWC 2-4" to 40"	0.96 0.59
722: Haploxerands, granitic till, medial sandy loam	70	Limitations Very dusty Fragments >10" >3% Slopes 15 - 25%	1.00 1.00 0.50	Limitations Very dusty Surface fragments (>10") >3% coverage	1.00 1.00 0.50	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.59

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
723: Haploxerands, granitic till, medial sandy loam	70	Limitations Slopes > 25% Very dusty Fragments >10" >3%	1.00 1.00 1.00	Limitations Very dusty Surface fragments (>10") >3% coverage Slopes > 40%	1.00 1.00 1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.59
724: Haploxerands, volcanic till, cobbly medial sandy loam-----	75	Limitations Very dusty Fragments >10" >3%	1.00 1.00	Limitations Very dusty Surface fragments (>10") >3% coverage	1.00 1.00	Limitations Slopes 8 to 15% AWC 2-4" to 40"	0.16 0.16
725: Haploxerands, volcanic till, cobbly medial sandy loam-----	75	Limitations Very dusty Fragments >10" >3% Slopes 15 - 25%	1.00 1.00 0.50	Limitations Very dusty Surface fragments (>10") >3% coverage	1.00 1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.16
726: Haploxerands, volcanic till, cobbly medial sandy loam-----	75	Limitations Slopes > 25% Very dusty Fragments >10" >3%	1.00 1.00 1.00	Limitations Very dusty Surface fragments (>10") >3% coverage Slopes > 40%	1.00 1.00 1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.16
727: Bonneyridge sandy loam--	85	No limitations		No limitations		Limitations AWC 2-4" to 40"	0.02
728: Bonneyridge sandy loam--	85	Limitations K factor >.35 and slopes > 8% Slopes 15 - 25%	1.00 0.82	No limitations		Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.02

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
729: Bonneyridge sandy loam--	85	Limitations Slopes > 25% K factor >.35 and slopes > 8%	1.00 1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.02
730: Tusccoll gravelly loam--	60	Limitations Slopes > 25% Very dusty Fragments >10" .1 to 3%	1.00 1.00 0.76	Limitations Very dusty Slopes > 40% Surface fragments (>10") .1-3% coverage	1.00 1.00 0.76	Limitations Slopes > 15%	1.00
Schott very gravelly loam-----	25	Limitations Slopes > 25% Very dusty Fragments >10" >3%	1.00 1.00 1.00	Limitations Very dusty Slopes > 40% Surface fragments (>10") >3% coverage	1.00 1.00 1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.49
731: Tusccoll gravelly loam--	50	Limitations Slopes > 25% Very dusty Fragments >10" .1 to 3%	1.00 1.00 0.76	Limitations Slopes > 40% Very dusty Surface fragments (>10") .1-3% coverage	1.00 1.00 0.76	Limitations Slopes > 15%	1.00
Schott very gravelly loam-----	35	Limitations Slopes > 25% Very dusty Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 40% Very dusty Surface fragments (>10") >3% coverage	1.00 1.00 1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.49
732: Bonpile taxadjunct, duripan substratum-----	90	Limitations Very dusty Fragments >10" >3%	1.00 1.00	Limitations Very dusty Surface fragments (>10") >3% coverage	1.00 1.00	Limitations AWC < 2" to 40"	0.99

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
733: Haploxeralfs, terrace, gravelly loam-----	75	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Fragments (gravel size) 25-50% AWC 2-4" to 40" Fragments >3" 5 to 30%	0.38 0.11 0.08
734: Haploxerands medial sandy loam-----	55	Limitations Very dusty	1.00	Limitations Very dusty	1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.25
Aquic Xerofluvents peaty very fine sandy loam-----	35	Limitations Saturation < 12" depth Frequent flooding Dusty	1.00 0.50 0.50	Limitations Saturation < 12" depth Frequent flooding Dusty	1.00 0.50 0.50	Limitations Saturation < 12" depth Frequent flooding	1.00 0.90
735: Fluvaquents, loamy-----	80	Limitations Saturation < 12" depth	1.00	Limitations Saturation < 12" depth	1.00	Limitations Saturation < 12" depth	1.00
801: Obstruction gravelly sandy loam-----	70	Limitations Organic surface layer >= 4" thick Very dusty	1.00 1.00	Limitations Organic surface layer >= 4" thick Very dusty	1.00 1.00	Limitations Organic surface layer >= 4" thick Slopes 8 to 15%	1.00 0.16
802: Obskel very gravelly sandy loam-----	40	Limitations Very dusty Slopes > 25%	1.00 1.00	Limitations Very dusty	1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.15
Obstruction gravelly sandy loam-----	40	Limitations Organic surface layer >= 4" thick Very dusty Slopes 15 - 25%	1.00 1.00 0.82	Limitations Organic surface layer >= 4" thick Very dusty	1.00 1.00	Limitations Slopes > 15% Organic surface layer >= 4" thick	1.00 1.00

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
803:							
Obskel very gravelly sandy loam-----	40	Limitations Slopes > 25% Very dusty	1.00 1.00	Limitations Very dusty Slopes > 40%	1.00 1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.15
Obstruction gravelly sandy loam-----	40	Limitations Slopes > 25% Organic surface layer >= 4" thick Very dusty	1.00 1.00 1.00	Limitations Organic surface layer >= 4" thick Very dusty Slopes > 40%	1.00 1.00 1.00	Limitations Slopes > 15% Organic surface layer >= 4" thick	1.00 1.00
804:							
Obskel very gravelly sandy loam-----	35	Limitations Slopes > 25% Very dusty	1.00 1.00	Limitations Slopes > 40% Very dusty	1.00 1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.15
Obstruction gravelly sandy loam-----	25	Limitations Slopes > 25% Organic surface layer >= 4" thick Very dusty	1.00 1.00 1.00	Limitations Slopes > 40% Organic surface layer >= 4" thick Very dusty	1.00 1.00 1.00	Limitations Slopes > 15% Organic surface layer >= 4" thick	1.00 1.00
Retsongulch very gravelly sandy loam----	20	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage	1.00 1.00	Limitations Slopes > 15% AWC < 2" to 40" Bedrock depth 20 to 40"	1.00 1.00 0.46
805:							
Bottlehill very gravelly loam-----	50	Limitations Fragments >10" .1 to 3%	0.76	Limitations Surface fragments (>10") .1-3% coverage	0.76	Limitations AWC < 2" to 40" Bedrock depth 20 to 40"	0.99 0.29
Walkermine very gravelly loam-----	20	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Bedrock depth < 20" AWC < 2" to 40" Slopes 8 to 15%	1.00 1.00 0.84

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
805: Logtrain gravelly loam--	20	Limitations Fragments >10" .1 to 3%	0.19	Limitations Surface fragments (>10") .1-3% coverage	0.19	No limitations	
806: Bottlehill very gravelly loam-----	50	Limitations Slopes 15 - 25% Fragments >10" .1 to 3%	0.82 0.76	Limitations Surface fragments (>10") .1-3% coverage	0.76	Limitations Slopes > 15% AWC < 2" to 40" Bedrock depth 20 to 40"	1.00 0.99 0.29
Walkermine very gravelly loam-----	20	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Surface fragments (>10") >3% coverage Slopes 25 to 40%	1.00 0.08	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Logtrain gravelly loam--	20	Limitations Slopes > 25% Fragments >10" .1 to 3%	1.00 0.19	Limitations Surface fragments (>10") .1-3% coverage	0.19	Limitations Slopes > 15%	1.00
807: Bottlehill very gravelly loam-----	35	Limitations Slopes > 25% Fragments >10" .1 to 3%	1.00 0.76	Limitations Slopes > 40% Surface fragments (>10") .1-3% coverage	1.00 0.76	Limitations Slopes > 15% AWC < 2" to 40" Bedrock depth 20 to 40"	1.00 0.99 0.29
Logtrain gravelly loam--	30	Limitations Slopes > 25% Fragments >10" .1 to 3%	1.00 0.19	Limitations Slopes > 40% Surface fragments (>10") .1-3% coverage	1.00 0.19	Limitations Slopes > 15%	1.00
Walkermine very gravelly loam-----	25	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage	1.00 1.00	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
808:							
Bottlehill very gravelly loam-----	45	Limitations		Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Fragments >10" .1 to 3%	0.76	Surface fragments (>10") .1-3% coverage	0.76	AWC < 2" to 40" Bedrock depth 20 to 40"	0.99 0.29
Walkermine very gravelly loam-----	20	Limitations		Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Bedrock depth < 20"	1.00
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Slopes > 15% AWC < 2" to 40"	1.00 1.00
Logtrain gravelly loam--	20	Limitations		Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Fragments >10" .1 to 3%	0.19	Surface fragments (>10") .1-3% coverage	0.19		
809:							
Walkermine very gravelly loam-----	45	Limitations		Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Bedrock depth < 20"	1.00
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Slopes > 15% AWC < 2" to 40"	1.00 1.00
Bottlehill very gravelly loam-----	15	Limitations		Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Fragments >10" .1 to 3%	0.76	Surface fragments (>10") .1-3% coverage	0.76	AWC < 2" to 40" Bedrock depth 20 to 40"	0.99 0.29
Logtrain gravelly loam--	15	Limitations		Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Fragments >10" .1 to 3%	0.19	Surface fragments (>10") .1-3% coverage	0.19		
Rock outcrop, metavolcanic-----	15	Not rated		Not rated		Not rated	
810:							
Dixmine very gravelly loam-----	35	Limitations		Limitations		Limitations	
		Slopes > 25%	1.00	Slopes 25 to 40%	0.86	Slopes > 15%	1.00

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
810: Mac gravelly loam-----	25	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15% Bedrock depth 20 to 40"	1.00 0.03
Spine very gravelly loam-----	25	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
811: Powellton gravelly loam	50	Limitations Very dusty	1.00	Limitations Very dusty	1.00	Limitations Slopes > 15%	1.00
Toadtown loam-----	40	Limitations Very dusty	1.00	Limitations Very dusty	1.00	No limitations	
812: Powellton gravelly loam	50	Limitations Very dusty Slopes 15 - 25%	1.00 0.82	Limitations Very dusty	1.00	Limitations Slopes > 15%	1.00
Toadtown loam-----	40	Limitations Very dusty Slopes 15 - 25%	1.00 0.82	Limitations Very dusty	1.00	Limitations Slopes > 15%	1.00
813: Powellton gravelly loam	50	Limitations Slopes > 25% Very dusty	1.00 1.00	Limitations Very dusty Slopes > 40%	1.00 1.00	Limitations Slopes > 15%	1.00
Toadtown loam-----	40	Limitations Slopes > 25% Very dusty	1.00 1.00	Limitations Very dusty Slopes > 40%	1.00 1.00	Limitations Slopes > 15%	1.00
814: Mountyana gravelly loam	80	Limitations Very dusty	1.00	Limitations Very dusty	1.00	Limitations Slopes 8 to 15%	0.16

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
815: Mountyana gravelly loam	80	Limitations Very dusty Slopes 15 - 25%	1.00 0.82	Limitations Very dusty	1.00	Limitations Slopes > 15%	1.00
817: Lydon very gravelly medial coarse sandy loam-----	80	Limitations Very dusty	1.00	Limitations Very dusty	1.00	Limitations AWC < 2" to 40" Bedrock depth 20 to 40"	1.00 0.12
818: Lydon very gravelly medial coarse sandy loam-----	75	Limitations Very dusty Slopes 15 - 25%	1.00 0.82	Limitations Very dusty	1.00	Limitations Slopes > 15% AWC < 2" to 40" Bedrock depth 20 to 40"	1.00 1.00 0.12
819: Lydon very gravelly medial coarse sandy loam-----	65	Limitations Slopes > 25% Very dusty	1.00 1.00	Limitations Very dusty Slopes > 40%	1.00 1.00	Limitations Slopes > 15% AWC < 2" to 40" Bedrock depth 20 to 40"	1.00 1.00 0.12
Rock outcrop, mudflow breccia-----	20	Not rated		Not rated		Not rated	
820: Lydon very gravelly medial coarse sandy loam-----	60	Limitations Slopes > 25% Very dusty	1.00 1.00	Limitations Slopes > 40% Very dusty	1.00 1.00	Limitations Slopes > 15% AWC < 2" to 40" Bedrock depth 20 to 40"	1.00 1.00 0.12
Rock outcrop, mudflow breccia-----	25	Not rated		Not rated		Not rated	

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
821: Lydon very gravelly medial coarse sandy loam-----	55	Limitations Slopes > 25% Very dusty	1.00 1.00	Limitations Slopes > 40% Very dusty	1.00 1.00	Limitations Slopes > 15% AWC < 2" to 40" Bedrock depth 20 to 40"	1.00 1.00 0.12
Rock outcrop, mudflow breccia-----	30	Not rated		Not rated		Not rated	
822: Bonepile gravelly medial loam-----	85	Limitations Very dusty Fragments >10" >3%	1.00 1.00	Limitations Very dusty Surface fragments (>10") >3% coverage	1.00 1.00	Limitations AWC 2-4" to 40"	0.08
823: Bonepile gravelly medial loam-----	85	Limitations Very dusty Fragments >10" >3% Slopes 15 - 25%	1.00 1.00 0.82	Limitations Very dusty Surface fragments (>10") >3% coverage	1.00 1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.08
824: Beecee very gravelly medial loam-----	85	Limitations Slopes > 25% Very dusty Fragments >10" >3%	1.00 1.00 1.00	Limitations Very dusty Slopes > 40% Surface fragments (>10") >3% coverage	1.00 1.00 1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.86
825: Beecee very gravelly medial loam-----	60	Limitations Slopes > 25% Very dusty Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 40% Very dusty Surface fragments (>10") >3% coverage	1.00 1.00 1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.86
Lydon very gravelly medial coarse sandy loam-----	20	Limitations Slopes > 25% Very dusty	1.00 1.00	Limitations Slopes > 40% Very dusty	1.00 1.00	Limitations Slopes > 15% AWC < 2" to 40" Bedrock depth 20 to 40"	1.00 1.00 0.12

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
826: Redbone gravelly medial sandy loam-----	80	Limitations Very dusty	1.00	Limitations Very dusty	1.00	Limitations Slopes 8 to 15% AWC 2-4" to 40"	0.16 0.13
827: Redbone gravelly medial sandy loam-----	80	Limitations Very dusty Slopes 15 - 25%	1.00 0.82	Limitations Very dusty	1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.13
829: Paradiso loam-----	80	Limitations Very dusty	1.00	Limitations Very dusty	1.00	No limitations	
830: Paradiso loam-----	75	Limitations Very dusty Slopes 15 - 25%	1.00 0.82	Limitations Very dusty	1.00	Limitations Slopes > 15%	1.00
831: Surnuf gravelly loam----	40	No limitations		No limitations		Limitations Slopes 8 to 15%	0.01
Bigridge loam-----	30	No limitations		No limitations		Limitations AWC 2-4" to 40" Slopes 8 to 15%	0.02 0.01
Spine very gravelly loam-----	15	No limitations		No limitations		Limitations Bedrock depth < 20" AWC < 2" to 40" Slopes 8 to 15%	1.00 1.00 0.04
832: Surnuf gravelly loam----	40	Limitations Slopes 15 - 25%	0.82	No limitations		Limitations Slopes > 15%	1.00
Bigridge loam-----	30	Limitations Slopes 15 - 25%	0.82	No limitations		Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.02

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
832: Spine very gravelly loam-----	15	Limitations Slopes 15 - 25%	0.50	No limitations		Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
833: Surnuf gravelly loam----	60	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15%	1.00
Bigridge loam-----	15	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.02
Spine very gravelly loam-----	15	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
834: Hietanen gravelly loam--	50	No limitations		No limitations		No limitations	
Mac gravelly loam-----	30	No limitations		No limitations		Limitations Bedrock depth 20 to 40"	0.03
835: Hietanen gravelly loam--	60	Limitations Slopes 15 - 25%	0.50	No limitations		Limitations Slopes > 15%	1.00
Mac gravelly loam-----	20	No limitations		No limitations		Limitations Slopes > 15% Bedrock depth 20 to 40"	1.00 0.03
836: Hietanen gravelly loam--	50	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15%	1.00
Mac gravelly loam-----	20	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15% Bedrock depth 20 to 40"	1.00 0.03

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
836: Spine very gravelly loam-----	15	Limitations Slopes > 25%	1.00	Limitations Slopes 25 to 40%	0.78	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
837: Hietanen gravelly loam--	35	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15%	1.00
Spine very gravelly loam-----	25	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Mac gravelly loam-----	20	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15% Bedrock depth 20 to 40"	1.00 0.03
838: Dixmine very gravelly loam-----	35	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15%	1.00
Spine very gravelly loam-----	25	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Mac gravelly loam-----	25	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15% Bedrock depth 20 to 40"	1.00 0.03
839: Chawanakee gravelly sandy loam-----	55	Limitations K factor >.35 and slopes > 8%	1.00	No limitations		Limitations Bedrock depth < 20" AWC < 2" to 40" Slopes 8 to 15%	1.00 1.00 0.16

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
839: Billscabin gravelly sandy loam-----	35	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations AWC 2-4" to 40" Slopes 8 to 15%	0.95 0.16
841: Billscabin gravelly sandy loam-----	50	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage	1.00 1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.95
Bonneyridge sandy loam--	35	Limitations Slopes > 25% K factor >.35 and slopes > 8%	1.00 1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.02
842: Billscabin gravelly sandy loam-----	60	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage	1.00 1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.95
Bonneyridge sandy loam--	25	Limitations Slopes > 25% K factor >.35 and slopes > 8%	1.00 1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.02
846: Bonneyridge sandy loam--	60	No limitations		No limitations		Limitations AWC 2-4" to 40" Slopes 8 to 15%	0.02 0.01
Lewisflat loam-----	20	Limitations Very dusty	1.00	Limitations Very dusty	1.00	Limitations Slopes 8 to 15%	0.01
847: Bonneyridge sandy loam--	60	Limitations K factor >.35 and slopes > 8% Slopes > 25%	1.00 1.00	No limitations		Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.02

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
847: Lewisflat loam-----	20	Limitations Very dusty Slopes 15 - 25%	1.00 0.82	Limitations Very dusty	1.00	Limitations Slopes > 15%	1.00
848: Bonneyridge sandy loam--	60	Limitations Slopes > 25% K factor >.35 and slopes > 8%	1.00 1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.02
Lewisflat loam-----	20	Limitations Slopes > 25% Very dusty	1.00 1.00	Limitations Very dusty Slopes > 40%	1.00 1.00	Limitations Slopes > 15%	1.00
850: Lewisflat loam-----	85	Limitations Very dusty	1.00	Limitations Very dusty	1.00	No limitations	
851: Lewisflat loam-----	80	Limitations Very dusty Slopes 15 - 25%	1.00 0.82	Limitations Very dusty	1.00	Limitations Slopes > 15%	1.00
852: Lewisflat loam-----	75	Limitations Slopes > 25% Very dusty	1.00 1.00	Limitations Very dusty Slopes > 40%	1.00 1.00	Limitations Slopes > 15%	1.00
860: Toadtown gravelly loam--	60	Limitations Organic surface layer >= 4" thick Very dusty	1.00 1.00	Limitations Organic surface layer >= 4" thick Very dusty	1.00 1.00	Limitations Organic surface layer >= 4" thick Slopes 8 to 15%	1.00 0.01
Powellton silt loam----	20	Limitations Very dusty	1.00	Limitations Very dusty	1.00	Limitations Slopes 8 to 15%	0.01

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
861: Toadtown gravelly loam--	60	Limitations Organic surface layer >= 4" thick Very dusty Slopes 15 - 25%	1.00 1.00 0.18	Limitations Organic surface layer >= 4" thick Very dusty	1.00 1.00	Limitations Slopes > 15% Organic surface layer >= 4" thick	1.00 1.00
Powellton silt loam----	20	Limitations Very dusty Slopes 15 - 25%	1.00 0.82	Limitations Very dusty	1.00	Limitations Slopes > 15%	1.00
862: Toadtown gravelly loam--	60	Limitations Slopes > 25% Organic surface layer >= 4" thick Very dusty	1.00 1.00 1.00	Limitations Organic surface layer >= 4" thick Very dusty Slopes > 40%	1.00 1.00 1.00	Limitations Slopes > 15% Organic surface layer >= 4" thick	1.00 1.00
Powellton silt loam----	20	Limitations Slopes > 25% Very dusty	1.00 1.00	Limitations Very dusty Slopes > 40%	1.00 1.00	Limitations Slopes > 15%	1.00
863: Toadtown gravelly loam--	60	Limitations Slopes > 25% Organic surface layer >= 4" thick Very dusty	1.00 1.00 1.00	Limitations Slopes > 40% Organic surface layer >= 4" thick Very dusty	1.00 1.00 1.00	Limitations Slopes > 15% Organic surface layer >= 4" thick	1.00 1.00
Powellton silt loam----	20	Limitations Slopes > 25% Very dusty	1.00 1.00	Limitations Slopes > 40% Very dusty	1.00 1.00	Limitations Slopes > 15%	1.00
880: Sites taxadjunct gravelly loam-----	50	Limitations Very dusty	1.00	Limitations Very dusty	1.00	Limitations Slopes 8 to 15%	0.01
Jocal taxadjunct gravelly loam-----	35	Limitations Very dusty	1.00	Limitations Very dusty	1.00	Limitations Slopes 8 to 15%	0.01

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
881: Sites taxadjunct gravelly loam-----	50	Limitations Very dusty Slopes 15 - 25%	1.00 0.18	Limitations Very dusty	1.00	Limitations Slopes > 15%	1.00
Jocal taxadjunct gravelly loam-----	35	Limitations Very dusty Slopes 15 - 25%	1.00 0.82	Limitations Very dusty	1.00	Limitations Slopes > 15%	1.00
882: Sites taxadjunct gravelly loam-----	50	Limitations Slopes > 25% Very dusty	1.00 1.00	Limitations Very dusty Slopes > 40%	1.00 1.00	Limitations Slopes > 15%	1.00
Jocal taxadjunct gravelly loam-----	35	Limitations Slopes > 25% Very dusty	1.00 1.00	Limitations Very dusty Slopes > 40%	1.00 1.00	Limitations Slopes > 15%	1.00
883: Sites taxadjunct gravelly loam-----	50	Limitations Slopes > 25% Very dusty	1.00 1.00	Limitations Slopes > 40% Very dusty	1.00 1.00	Limitations Slopes > 15%	1.00
Jocal taxadjunct gravelly loam-----	40	Limitations Slopes > 25% Very dusty	1.00 1.00	Limitations Slopes > 40% Very dusty	1.00 1.00	Limitations Slopes > 15%	1.00
885: Rogerville silt loam----	75	No limitations		No limitations		Limitations Slopes 8 to 15%	0.01
886: Rogerville silt loam----	80	Limitations Slopes 15 - 25%	0.82	No limitations		Limitations Slopes > 15%	1.00

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
892: Rogerville silt loam----	85	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15%	1.00
893: Rogerville silt loam----	85	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15%	1.00
902: Lava flows, Lovejoy basalt-----	50	Not rated		Not rated		Not rated	
Lumpkin gravelly medial sandy loam-----	40	Limitations Very dusty Surface fragments <3" >65% Fragments >10" .1 to 3%	1.00 1.00 0.76	Limitations Very dusty Surface fragments <3" >65% Surface fragments (>10") .1-3% coverage	1.00 1.00 0.76	Limitations Bedrock depth < 20" AWC < 2" to 40" Fragments (gravel size) >50%	1.00 1.00 1.00
903: Mudwash gravelly medial sandy loam-----	45	Limitations Very dusty	1.00	Limitations Very dusty	1.00	Limitations AWC 2-4" to 40" Slopes 8 to 15%	0.01 0.01
Timberisland very gravelly medial sandy loam-----	25	Limitations Very dusty Slopes > 25%	1.00 1.00	Limitations Very dusty Slopes 25 to 40%	1.00 0.22	Limitations AWC < 2" to 40" Slopes > 15%	1.00 1.00
Lavatop gravelly medial fine sandy loam-----	20	Limitations Very dusty	1.00	Limitations Very dusty	1.00	Limitations AWC < 2" to 40" Bedrock depth 20 to 40" Slopes 8 to 15%	1.00 0.82 0.01
904: Lava flows, Lovejoy basalt-----	60	Not rated		Not rated		Not rated	

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
904: Lavatop gravelly medial fine sandy loam-----	20	Limitations Very dusty Slopes 15 - 25%	1.00 0.82	Limitations Very dusty	1.00	Limitations Slopes > 15% AWC < 2" to 40" Bedrock depth 20 to 40"	1.00 1.00 0.82
905: Lava flows, Lovejoy basalt-----	60	Not rated		Not rated		Not rated	
Lumpkin gravelly medial sandy loam-----	30	Limitations Slopes > 25% Very dusty Surface fragments <3" >65%	1.00 1.00 1.00	Limitations Very dusty Slopes > 40% Surface fragments <3" >65%	1.00 1.00 1.00	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
906: Lava flows, Lovejoy basalt-----	60	Not rated		Not rated		Not rated	
Lumpkin gravelly medial sandy loam-----	30	Limitations Slopes > 25% Very dusty Surface fragments <3" >65%	1.00 1.00 1.00	Limitations Slopes > 40% Very dusty Surface fragments <3" >65%	1.00 1.00 1.00	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
911: Endoaquolls loam-----	75	Limitations Saturation < 12" depth	1.00	Limitations Saturation < 12" depth	1.00	Limitations Saturation < 12" depth Occasional flooding	1.00 0.80
923: Powderhouse medial sandy loam-----	45	Limitations Very dusty	1.00	Limitations Very dusty	1.00	Limitations AWC 2-4" to 40" Bedrock depth 20 to 40" Slopes 8 to 15%	0.94 0.06 0.01

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
923:							
McNair medial coarse sandy loam-----	25	Limitations Very dusty	1.00	Limitations Very dusty	1.00	Limitations AWC 2-4" to 40" Slopes 8 to 15%	0.48 0.01
Greenwell medial sandy loam-----	20	Limitations Very dusty	1.00	Limitations Very dusty	1.00	Limitations Bedrock depth 20 to 40" AWC 2-4" to 40" Slopes 8 to 15%	0.26 0.07 0.01
924:							
Powderhouse medial sandy loam-----	45	Limitations Very dusty Slopes 15 - 25%	1.00 0.82	Limitations Very dusty	1.00	Limitations Slopes > 15% AWC 2-4" to 40" Bedrock depth 20 to 40"	1.00 0.94 0.06
McNair medial coarse sandy loam-----	25	Limitations Very dusty Slopes 15 - 25%	1.00 0.82	Limitations Very dusty	1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.48
Greenwell medial sandy loam-----	20	Limitations Very dusty Slopes 15 - 25%	1.00 0.82	Limitations Very dusty	1.00	Limitations Slopes > 15% Bedrock depth 20 to 40" AWC 2-4" to 40"	1.00 0.26 0.07
925:							
Powderhouse medial sandy loam-----	45	Limitations Slopes > 25% Very dusty	1.00 1.00	Limitations Very dusty Slopes > 40%	1.00 1.00	Limitations Slopes > 15% AWC 2-4" to 40" Bedrock depth 20 to 40"	1.00 0.94 0.06
McNair medial coarse sandy loam-----	25	Limitations Slopes > 25% Very dusty	1.00 1.00	Limitations Very dusty Slopes > 40%	1.00 1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.48

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
925: Greenwell medial sandy loam-----	20	Limitations Slopes > 25% Very dusty	1.00 1.00	Limitations Very dusty Slopes > 40%	1.00 1.00	Limitations Slopes > 15% Bedrock depth 20 to 40" AWC 2-4" to 40"	1.00 0.26 0.07
930: Shakeridge gravelly medial coarse sandy loam-----	50	Limitations Very dusty	1.00	Limitations Very dusty	1.00	Limitations AWC < 2" to 40" Slopes 8 to 15%	1.00 0.01
Timberisland very gravelly medial sandy loam-----	40	Limitations Very dusty	1.00	Limitations Very dusty	1.00	Limitations AWC < 2" to 40" Slopes 8 to 15%	1.00 0.01
931: Shakeridge gravelly medial coarse sandy loam-----	40	Limitations Very dusty Slopes 15 - 25%	1.00 0.82	Limitations Very dusty	1.00	Limitations Slopes > 15% AWC < 2" to 40"	1.00 1.00
Mudwash gravelly medial sandy loam-----	25	Limitations Very dusty Slopes 15 - 25%	1.00 0.82	Limitations Very dusty	1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.01
Timberisland very gravelly medial sandy loam-----	15	Limitations Very dusty Slopes 15 - 25%	1.00 0.82	Limitations Very dusty	1.00	Limitations Slopes > 15% AWC < 2" to 40"	1.00 1.00
932: Shakeridge gravelly medial coarse sandy loam-----	50	Limitations Slopes > 25% Very dusty	1.00 1.00	Limitations Very dusty Slopes > 40%	1.00 1.00	Limitations Slopes > 15% AWC < 2" to 40"	1.00 1.00

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
932: Mudwash gravelly medial sandy loam-----	35	Limitations Slopes > 25% Very dusty	1.00 1.00	Limitations Very dusty Slopes > 40%	1.00 1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.01
933: Shakeridge gravelly medial coarse sandy loam-----	80	Limitations Slopes > 25% Very dusty	1.00 1.00	Limitations Slopes > 40% Very dusty	1.00 1.00	Limitations Slopes > 15% AWC < 2" to 40"	1.00 1.00
934: Mudwash gravelly medial sandy loam-----	80	Limitations Very dusty	1.00	Limitations Very dusty	1.00	Limitations AWC 2-4" to 40" Slopes 8 to 15%	0.01 0.01
939: Fluvaquentic Humaquepts very fine sandy loam---	85	Limitations Saturation from 12 to 24" depth	0.86	Limitations Saturation from 12 to 24" depth	0.86	Limitations Saturation from 12 to 24" depth	0.86
940: Dejonah gravelly loam---	50	Limitations Very dusty	1.00	Limitations Very dusty	1.00	Limitations Slopes 8 to 15%	0.01
Stagpoint loam-----	30	Limitations Very dusty	1.00	Limitations Very dusty	1.00	Limitations AWC 2-4" to 40" Slopes 8 to 15%	0.57 0.01
941: Dejonah gravelly loam---	50	Limitations Very dusty Slopes 15 - 25%	1.00 0.82	Limitations Very dusty	1.00	Limitations Slopes > 15%	1.00
Stagpoint loam-----	30	Limitations Very dusty Slopes 15 - 25%	1.00 0.82	Limitations Very dusty	1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.57

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
942: Stagpoint loam-----	50	Limitations Slopes > 25% Very dusty	1.00 1.00	Limitations Very dusty Slopes > 40%	1.00 1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.57
Dejonah gravelly loam---	30	Limitations Slopes > 25% Very dusty	1.00 1.00	Limitations Very dusty Slopes > 40%	1.00 1.00	Limitations Slopes > 15%	1.00
948: Stagpoint loam-----	55	Limitations Slopes > 25% Very dusty	1.00 1.00	Limitations Slopes > 40% Very dusty	1.00 1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.57
Dejonah gravelly loam---	35	Limitations Slopes > 25% Very dusty	1.00 1.00	Limitations Slopes > 40% Very dusty	1.00 1.00	Limitations Slopes > 15%	1.00
949: Rogerville taxadjunct fine sandy loam-----	80	Limitations Slopes > 25% Very dusty	1.00 1.00	Limitations Very dusty Slopes > 40%	1.00 1.00	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.04
950: Lumpkin taxadjunct very gravelly medial very fine sandy loam-----	40	Limitations Very dusty Surface fragments <3" >65%	1.00 1.00	Limitations Very dusty Surface fragments <3" >65%	1.00 1.00	Limitations Bedrock depth < 20" AWC < 2" to 40" Fragments (gravel size) >50%	1.00 1.00 1.00
Rock outcrop, olivine basalt, andesite, or mudflow-----	25	Not rated		Not rated		Not rated	
Powderhouse medial sandy loam-----	20	Limitations Very dusty	1.00	Limitations Very dusty	1.00	Limitations AWC 2-4" to 40" Bedrock depth 20 to 40" Slopes 8 to 15%	0.94 0.06 0.01

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
951: Lumpkin taxadjunct very gravelly medial very fine sandy loam-----	40	Limitations Very dusty Surface fragments <3" >65% Slopes 15 - 25%	1.00 1.00 0.82	Limitations Very dusty Surface fragments <3" >65%	1.00 1.00	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Rock outcrop, andesite--	25	Not rated		Not rated		Not rated	
Powderhouse medial sandy loam-----	20	Limitations Very dusty Slopes 15 - 25%	1.00 0.82	Limitations Very dusty	1.00	Limitations Slopes > 15% AWC 2-4" to 40" Bedrock depth 20 to 40"	1.00 0.94 0.06
960: Surnuf gravelly loam, high elevation-----	85	No limitations		No limitations		No limitations	
961: Surnuf gravelly loam, high elevation-----	85	No limitations		No limitations		Limitations Slopes 8 to 15%	0.37
962: Surnuf gravelly loam, high elevation-----	85	Limitations Slopes 15 - 25%	0.82	No limitations		Limitations Slopes > 15%	1.00
963: Surnuf gravelly loam, high elevation-----	85	Limitations Slopes > 25% Fragments >10" .1 to 3%	1.00 0.76	Limitations Slopes > 40% Surface fragments (>10") .1-3% coverage	1.00 0.76	Limitations Slopes > 15%	1.00
990: Riverwash, frequently flooded-----	100	Not rated		Not rated		Not rated	

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, and golf fairways	
		Limitations	Value	Limitations	Value	Limitations	Value
991: Xerofluvents sandy loam, frequently flooded-----	75	Limitations Frequent flooding	0.50	Limitations Frequent flooding	0.50	Limitations Frequent flooding	0.90
995: Pits, gravel-----	100	Not rated		Not rated		Not rated	
996: Dumps, excavated material-----	100	Not rated		Not rated		Not rated	
997: Pits-----	95	Not rated		Not rated		Not rated	
998: Dumps, landfill-----	100	Not rated		Not rated		Not rated	
999: Water-----	100	Not rated		Not rated		Not rated	
DAM: Dam, manmade-----	100	Not rated		Not rated		Not rated	

The interpretation for paths and trails evaluates the following soil properties at variable depths in the soil: flooding; ponding; wetness; slope; fragments less than, equal to, or more than 3 inches in size; clay and sand content in the surface layer; surface fragments more than or equal to 10 inches in size; Unified classes for a high content of organic matter (PT, OL, and OH); soil dustiness; and the hazard of water erosion.

The interpretation for off-road motorcycle trails evaluates the following soil properties at variable depths in the soil: flooding; ponding; wetness; slope; soil dustiness; fragments less than, equal to, or more than 3 inches in size; sand or clay content in the surface layer; and Unified classes for a high content of organic matter (PT, OL, and OH).

The interpretation for lawns, landscaping, and golf fairways evaluates the following soil properties at variable depths in the soil: flooding; ponding; wetness; slope; depth to bedrock; depth to a cemented pan; fragments less than, equal to, or more than 3 inches in size; Unified classes for a high content of organic matter (PT, OL, and OH); soil dustiness; sand or clay content in the surface layer; surface fragments more than or equal to 10 inches in size; pH; salinity (EC); sodium content (SAR); calcium carbonates; and sulfur content.

Table 16a.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The rating is based on the limitation with the highest value. Only the three highest value limitations are listed. There may be more limitations. Fine-earth fractions and rock fragments are reported on a weight basis. An explanation of the rating criteria and of the abbreviations used in describing the limitations is given at the end of the table)

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
100: Anita clay-----	60	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00
Galt clay-----	25	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00
104: Bosquejo clay-----	85	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation from 2.5' to 6' depth	1.00 1.00 0.87	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00
105: Busacca clay loam-----	85	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP 3-6)	1.00 1.00 0.78	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00
108: Tuscan gravelly loam----	45	Limitations Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00	Limitations Saturation < 2.5' depth Shrink-swell (LEP >6)	1.00 1.00	Limitations Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00
Igo gravelly loam-----	20	Limitations Saturation < 18" depth Shrink-swell (LEP >6)	1.00 0.99	Limitations Saturation < 2.5' depth Shrink-swell (LEP >6)	1.00 1.00	Limitations Saturation < 18" depth Shrink-swell (LEP >6)	1.00 0.99
Anita clay-----	15	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
109: Bosquejo clay loam-----	85	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation from 2.5' to 6' depth	1.00 1.00 0.87	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00
110: Bosquejo silt loam, overwash, occasionally flooded-----	90	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00
111yu: Auburn loam-----	40	Limitations Bedrock (hard) < 20" depth Slopes 8 to 15%	1.00 0.63	Limitations Bedrock (hard) < 40" depth Slopes 8 to 15%	1.00 0.63	Limitations Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00
Sobrante loam-----	40	Limitations Slopes 8 to 15% Shrink-swell (LEP 3-6) Bedrock (hard) from 20 to 40"	0.63 0.50 0.01	Limitations Bedrock (hard) < 40" depth Bedrock (soft) from 20 to 40" Slopes 8 to 15%	1.00 0.71 0.63	Limitations Slopes > 8% Shrink-swell (LEP 3-6) Bedrock (hard) from 20 to 40"	1.00 0.50 0.01
114yu: Auburn gravelly loam----	40	Limitations Bedrock (hard) < 20" depth Slopes 8 to 15%	1.00 0.63	Limitations Bedrock (hard) < 40" depth Slopes 8 to 15%	1.00 0.63	Limitations Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00
Sobrante gravelly loam--	40	Limitations Slopes 8 to 15% Shrink-swell (LEP 3-6)	0.63 0.50	Limitations Bedrock (hard) < 40" depth Slopes 8 to 15% Shrink-swell (LEP 3-6)	0.99 0.63 0.50	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.50
118: Xerorthents, tailings---	80	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare	1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
118co: Clear Lake clay, frequently flooded-----	90	Limitations Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00	Limitations Flooding >= rare Shrink-swell (LEP >6) Saturation from 2.5' to 6' depth	1.00 1.00 0.61	Limitations Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00
119: Xerorthents, tailings---	70	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare	1.00
Urban land-----	30	Not rated		Not rated		Not rated	
119yu: Auburn gravelly loam----	30	Limitations Slopes > 15% Bedrock (hard) < 20" depth	1.00 1.00	Limitations Slopes > 15% Bedrock (hard) < 40" depth	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00
Sobrante gravelly loam--	30	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 15% Bedrock (hard) < 40" depth Shrink-swell (LEP 3-6)	1.00 0.99 0.50	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.50
Rock outcrop-----	20	Not rated		Not rated		Not rated	
120: Gridley taxadjunct clay loam-----	80	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00
121: Boga loam-----	45	Limitations Ponding (any duration) Shrink-swell (LEP 3-6)	1.00 0.56	Limitations Ponding (any duration) Saturation from 2.5' to 6' depth Shrink-swell (LEP 3-6)	1.00 0.97 0.38	Limitations Ponding (any duration) Shrink-swell (LEP 3-6)	1.00 0.56

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
121: Loemstone loam-----	40	Limitations Ponding (any duration) Shrink-swell (LEP 3-6)	1.00 0.56	Limitations Ponding (any duration) Saturation from 2.5' to 6' depth Shrink-swell (LEP 3-6)	1.00 0.97 0.56	Limitations Ponding (any duration) Shrink-swell (LEP 3-6)	1.00 0.56
121su: Columbia fine sandy loam, frequently flooded-----	80	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare Saturation from 2.5' to 6' depth	1.00 0.61	Limitations Flooding >= rare	1.00
125: Gridley taxadjunct loam	65	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00
Calcic Haploxerolls sandy loam-----	20	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare Saturation < 2.5' depth	1.00 0.99	Limitations Flooding >= rare	1.00
126: Liveoak sandy loam-----	85	No limitations		Limitations Saturation < 2.5' depth	0.99	No limitations	
127: Gridley taxadjunct loam	85	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00
130: Eastbiggs loam-----	80	Limitations Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00	Limitations Saturation < 2.5' depth Shrink-swell (LEP >6) Pan (thin) from 20-40"	1.00 1.00 0.71	Limitations Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
133:							
Eastbiggs loam-----	50	Limitations		Limitations		Limitations	
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation < 18" depth	1.00
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00
				Pan (thin) from 20-40"	0.71		
Galt clay loam-----	40	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation < 18" depth	1.00
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00
136:							
Duric Xerarents, cut----	35	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation < 18" depth	1.00
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00
Duric Xerarents, fill---	30	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
				Saturation from 2.5' to 6' depth	0.90		
Eastbiggs fine sandy loam, leveled-----	25	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation < 18" depth	1.00
		Shrink-swell (LEP 3-6)	0.06	Pan (thin) from 20-40"	0.46	Shrink-swell (LEP 3-6)	0.06
138su:							
Liveoak sandy clay loam	85	No limitations		Limitations		No limitations	
				Saturation < 2.5' depth	0.99		
139su:							
Liveoak taxadjunct loam, frequently flooded-----	45	Limitations		Limitations		Limitations	
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >= rare	1.00
				Saturation from 2.5' to 6' depth	0.47		

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
139su: Galt taxadjunct clay loam, frequently flooded-----	40	Limitations Flooding >= rare Saturation < 18" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Flooding >= rare Saturation < 2.5' depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Flooding >= rare Saturation < 18" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50
143su: Marcum clay loam-----	45	Limitations Shrink-swell (LEP 3-6)	0.50	Limitations Shrink-swell (LEP >6)	1.00	Limitations Shrink-swell (LEP 3-6)	0.50
Gridley clay loam-----	40	Limitations Shrink-swell (LEP >6)	1.00	Limitations Shrink-swell (LEP >6) Bedrock (soft) from 20 to 40"	1.00 0.03	Limitations Shrink-swell (LEP >6)	1.00
149yu: Flanly sandy loam-----	80	Limitations Slopes 8 to 15% Shrink-swell (LEP 3-6)	0.63 0.50	Limitations Slopes 8 to 15% Shrink-swell (LEP 3-6) Bedrock (soft) from 20 to 40"	0.63 0.50 0.15	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.50
150: Columbia stratified sand to fine sandy loam-----	85	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare Saturation from 2.5' to 6' depth	1.00 0.87	Limitations Flooding >= rare	1.00
150su: Olashes sandy loam-----	85	Limitations Shrink-swell (LEP 3-6)	0.50	Limitations Shrink-swell (LEP 3-6)	0.50	Limitations Shrink-swell (LEP 3-6)	0.50
151yu: Flanly sandy loam-----	80	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Bedrock (soft) from 20 to 40"	1.00 0.50 0.15	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.50

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
152: Gianella fine sandy loam, frequently flooded-----	85	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare	1.00
153: Gianella sandy loam, frequently flooded----	85	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare	1.00
154: Gianella silt loam, frequently flooded----	85	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare	1.00
158: Gianella fine sandy loam, occasionally flooded-----	85	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare	1.00
160: Gianella loam, occasionally flooded---	85	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare	1.00
161: Gianella fine sandy loam, rarely flooded---	90	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare	1.00
162: Gianella loam, rarely flooded-----	90	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare	1.00
163yu: Holillipah loamy sand---	85	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare	1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
165yu:							
Holland loam-----	40	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
Hoda loam-----							
	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
Hotaw loam-----							
	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
				Bedrock (soft) from 20 to 40"	0.15		
173yu:							
Hotaw loam-----	45	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
				Bedrock (soft) from 20 to 40"	0.15		
Chawanakee gravelly sandy loam-----							
	20	Limitations		Limitations		Limitations	
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
Holland loam-----							
	15	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
175:							
Farwell clay loam, rarely flooded-----	85	Limitations		Limitations		Limitations	
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >= rare	1.00
		Shrink-swell (LEP 3-6)	0.06	Shrink-swell (LEP 3-6)	0.92	Shrink-swell (LEP 3-6)	0.06
176:							
Farwell loam, occasionally flooded---	85	Limitations		Limitations		Limitations	
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >= rare	1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
176yu: Jocal loam-----	80	Limitations Slopes 8 to 15% Shrink-swell (LEP 3-6)	0.63 0.50	Limitations Slopes 8 to 15% Shrink-swell (LEP 3-6)	0.63 0.50	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.50
177: Farwell silt loam, occasionally flooded---	85	Limitations Flooding >= rare Shrink-swell (LEP 3-6)	1.00 0.68	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare Shrink-swell (LEP 3-6)	1.00 0.68
178: Arbuckle gravelly loam--	87	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare	1.00
179: Moda taxadjunct loam----	65	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00
Arbuckle gravelly loam--	20	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare	1.00
180: Dodgeland silty clay loam, occasionally flooded-----	85	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00
181: Dodgeland silty clay loam, frequently flooded-----	80	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
188yu: Mariposa taxadjunct gravelly loam-----	80	Limitations Slopes > 15% Bedrock (hard) from 20 to 40"	1.00 0.95	Limitations Slopes > 15% Bedrock (hard) < 40" depth	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) from 20 to 40"	1.00 0.95
189: Esquon silt loam, overwash-----	90	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00
189yu: Mariposa taxadjunct gravelly loam-----	80	Limitations Slopes > 15% Bedrock (hard) from 20 to 40"	1.00 0.95	Limitations Slopes > 15% Bedrock (hard) < 40" depth	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) from 20 to 40"	1.00 0.95
196yu: Mildred cobbly loam----	80	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 15% Shrink-swell (LEP >6) Bedrock (soft) from 20 to 40"	1.00 1.00 0.95	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 1.00
200: Parrott silt loam, occasionally flooded---	85	Limitations Ponding (any duration) Flooding >= rare	1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation from 2.5' to 6' depth	1.00 1.00 0.16	Limitations Ponding (any duration) Flooding >= rare	1.00 1.00
201: Parrott silt loam, frequently flooded----	85	Limitations Ponding (any duration) Flooding >= rare	1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation from 2.5' to 6' depth	1.00 1.00 0.16	Limitations Ponding (any duration) Flooding >= rare	1.00 1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
203: Kusalslough silty clay loam, occasionally flooded-----	85	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 0.99	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 0.99
205: Parrott silt loam, frequently flooded-----	50	Limitations Ponding (any duration) Flooding >= rare	1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation from 2.5' to 6' depth	1.00 1.00 0.16	Limitations Ponding (any duration) Flooding >= rare	1.00 1.00
Vermet silt loam, frequently flooded-----	35	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00
206: Islandbar sandy loam----	60	Limitations Slopes 8 to 15%	0.01	Limitations Slopes 8 to 15%	0.01	Limitations Slopes > 8%	0.98
Chawanakee gravelly sandy loam-----	30	Limitations Bedrock (soft) < 20" depth Slopes 8 to 15%	1.00 0.01	Limitations Bedrock (soft) < 20" depth Slopes 8 to 15%	1.00 0.01	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 0.98
207: Islandbar sandy loam----	60	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Chawanakee gravelly sandy loam-----	30	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00
208: Islandbar sandy loam----	60	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
208: Chawanakee gravelly sandy loam-----	30	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00
209: Islandbar sandy loam----	60	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Chawanakee gravelly sandy loam-----	30	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00
210: Featherfalls sandy loam	50	Limitations Shrink-swell (LEP 3-6) Slopes 8 to 15%	0.32 0.01	Limitations Shrink-swell (LEP 3-6) Slopes 8 to 15%	0.92 0.01	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	0.98 0.32
Islandbar sandy loam----	35	Limitations Slopes 8 to 15%	0.01	Limitations Slopes 8 to 15%	0.01	Limitations Slopes > 8%	0.98
211: Featherfalls sandy loam	55	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.32	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.92	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.32
Islandbar sandy loam----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
212: Featherfalls sandy loam	55	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.32	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.92	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.32
Islandbar sandy loam----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
213: Featherfalls sandy loam	45	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.32	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.92	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.32

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
213: Islandbar sandy loam----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
214: Crystalhill gravelly coarse sandy loam-----	35	Limitations Slopes 8 to 15%	0.16	Limitations Slopes 8 to 15%	0.16	Limitations Slopes > 8%	1.00
Oregongulch gravelly sandy loam-----	20	Limitations Slopes 8 to 15%	0.16	Limitations Bedrock (soft) from 20 to 40" Slopes 8 to 15%	0.90 0.16	Limitations Slopes > 8%	1.00
Craigsaddle coarse sandy loam-----	20	No limitations		No limitations		Limitations Slopes 4 to 8%	0.74
Rock outcrop, trondhemite-----	10	Not rated		Not rated		Not rated	
215: Crystalhill gravelly coarse sandy loam-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Oregongulch gravelly sandy loam-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Bedrock (soft) from 20 to 40"	1.00 0.90	Limitations Slopes > 8%	1.00
Craigsaddle coarse sandy loam-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Rock outcrop, trondhemite-----	10	Not rated		Not rated		Not rated	

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
216:							
Crystalhill gravelly coarse sandy loam-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Oregongulch gravelly sandy loam-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Bedrock (soft) from 20 to 40"	1.00 0.90	Limitations Slopes > 8%	1.00
Craigsaddle coarse sandy loam-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Rock outcrop, trondhemite-----	10	Not rated		Not rated		Not rated	
217:							
Crystalhill gravelly coarse sandy loam-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Oregongulch gravelly sandy loam-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Bedrock (soft) from 20 to 40"	1.00 0.90	Limitations Slopes > 8%	1.00
Craigsaddle coarse sandy loam-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Rock outcrop, trondhemite-----	10	Not rated		Not rated		Not rated	
218:							
Rock outcrop, quartz diorite-----	60	Not rated		Not rated		Not rated	

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
218:							
Lithic Xerorthents gravelly sandy loam----	20	Limitations Bedrock (hard) < 20" depth Slopes > 15%	1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00
Chawanakee gravelly sandy loam-----	15	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00
219:							
Rock outcrop, quartz diorite-----	60	Not rated		Not rated		Not rated	
Lithic Xerorthents, gravelly sandy loam----	20	Limitations Slopes > 15% Bedrock (hard) < 20" depth	1.00 1.00	Limitations Slopes > 15% Bedrock (hard) < 40" depth	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00
Chawanakee gravelly sandy loam-----	15	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00
220:							
Esquon clay, frequently flooded-----	60	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00
Clear Lake silty clay loam, overwash-----	30	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00
221yu:							
Sites loam-----	85	Limitations Shrink-swell (LEP 3-6)	0.50	Limitations Shrink-swell (LEP 3-6)	0.50	Limitations Slopes 4 to 8% Shrink-swell (LEP 3-6)	0.50 0.50

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
222yu: Sites loam-----	85	Limitations Slopes 8 to 15% Shrink-swell (LEP 3-6)	0.63 0.50	Limitations Slopes 8 to 15% Shrink-swell (LEP 3-6)	0.63 0.50	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.50
225yu: Sites gravelly loam, bedrock substratum----	80	Limitations Shrink-swell (LEP 3-6)	0.50	Limitations Shrink-swell (LEP 3-6)	0.50	Limitations Slopes 4 to 8% Shrink-swell (LEP 3-6)	0.50 0.50
226yu: Sites gravelly loam, bedrock substratum----	80	Limitations Slopes 8 to 15% Shrink-swell (LEP 3-6)	0.63 0.50	Limitations Slopes 8 to 15% Shrink-swell (LEP 3-6)	0.63 0.50	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.50
227yu: Sites gravelly loam, bedrock substratum----	80	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.50
242yu: Surnuf loam-----	80	Limitations Slopes 8 to 15%	0.63	Limitations Slopes 8 to 15%	0.63	Limitations Slopes > 8%	1.00
243yu: Surnuf loam-----	80	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
244yu: Surnuf loam-----	80	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
245: Surnuf loam-----	80	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
248yu: Trainer loam-----	85	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare Saturation from 2.5' to 6' depth	1.00 0.61	Limitations Flooding >= rare	1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
250: Llanoseco, occasionally flooded-----	90	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00
252: Whitecabin silty clay, occasionally flooded---	60	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00
Ordferry silty clay, occasionally flooded---	25	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00
252yu: Woodleaf gravelly loam--	80	Limitations Bedrock (hard) from 20 to 40" Shrink-swell (LEP 3-6) Slopes 8 to 15%	0.64 0.50 0.04	Limitations Bedrock (hard) < 40" depth Shrink-swell (LEP 3-6) Slopes 8 to 15%	1.00 0.50 0.04	Limitations Slopes > 8% Bedrock (hard) from 20 to 40" Shrink-swell (LEP 3-6)	1.00 0.64 0.50
253yu: Woodleaf gravelly loam--	80	Limitations Slopes > 15% Bedrock (hard) from 20 to 40" Shrink-swell (LEP 3-6)	1.00 0.64 0.50	Limitations Slopes > 15% Bedrock (hard) < 40" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 8% Bedrock (hard) from 20 to 40" Shrink-swell (LEP 3-6)	1.00 0.64 0.50
255: Whitecabin silty clay loam, occasionally flooded-----	60	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
255: Ordferry silty clay, occasionally flooded---	30	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00
256: Whitecabin silt loam, occasionally flooded---	85	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00
257: Llanoseco, frequently flooded-----	90	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00
258: Codora, occasionally flooded-----	85	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation from 2.5' to 6' depth	1.00 1.00 0.92	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00
260: Ordferry silty clay, occasionally flooded---	90	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00
280: Columbia taxadjunct stratified very fine sandy loam-----	80	Limitations Flooding >= rare Saturation < 18" depth	1.00 1.00	Limitations Flooding >= rare Saturation < 2.5' depth	1.00 1.00	Limitations Flooding >= rare Saturation < 18" depth	1.00 1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
290: Perkins gravelly loam---	90	No limitations		Limitations Saturation from 2.5' to 6' depth	0.05	No limitations	
300: Redsluff gravelly loam--	80	Limitations Flooding >= rare Shrink-swell (LEP 3-6)	1.00 0.01	Limitations Flooding >= rare Saturation from 2.5' to 6' depth	1.00 0.97	Limitations Flooding >= rare Shrink-swell (LEP 3-6)	1.00 0.01
301: Wafap gravelly loam----	70	Limitations Flooding >= rare Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Flooding >= rare Saturation < 2.5' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Flooding >= rare Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00
Hamslough clay-----	15	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00
302: Redtough loam-----	50	Limitations Saturation < 18" depth Shrink-swell (LEP 3-6)	1.00 0.01	Limitations Saturation < 2.5' depth	1.00	Limitations Saturation < 18" depth Shrink-swell (LEP 3-6)	1.00 0.01
Redswale cobbly loam---	35	Limitations Ponding (any duration) Saturation < 18" depth Fragments (>3") 25 to 50%	1.00 1.00 0.50	Limitations Ponding (any duration) Saturation < 2.5' depth Fragments (>3") 25 to 50%	1.00 1.00 0.50	Limitations Ponding (any duration) Saturation < 18" depth Fragments (>3") 25 to 50%	1.00 1.00 0.50
303: Munjar gravelly loam---	60	Limitations Shrink-swell (LEP >6) Saturation from 18 to 30" depth Fragments (>3") 25 to 50%	1.00 0.88 0.01	Limitations Saturation < 2.5' depth Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Shrink-swell (LEP >6) Saturation from 18 to 30" depth Fragments (>3") 25 to 50%	1.00 0.88 0.01
Tuscan taxadjunct gravelly clay loam----	20	Limitations Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00	Limitations Saturation < 2.5' depth Shrink-swell (LEP >6)	1.00 1.00	Limitations Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
303: Galt clay-----	10	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00
304: Redtough loam-----	80	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.01	Limitations Slopes > 15%	1.00	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.01
305: Redtough gravelly loam--	45	Limitations Saturation < 18" depth	1.00	Limitations Saturation < 2.5' depth	1.00	Limitations Saturation < 18" depth	1.00
Redswale loam-----	25	Limitations Ponding (any duration) Saturation < 18" depth	1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth	1.00 1.00	Limitations Ponding (any duration) Saturation < 18" depth	1.00 1.00
Anita, gravelly duripan	20	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Pan (thin) < 20" depth Ponding (any duration) Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00
306: Duric Xerarents, fill---	50	Limitations Ponding (any duration) Saturation < 18" depth	1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth	1.00 1.00	Limitations Ponding (any duration) Saturation < 18" depth	1.00 1.00
Duric Xerarents, cut----	40	Limitations Ponding (any duration) Saturation < 18" depth	1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth	1.00 1.00	Limitations Ponding (any duration) Saturation < 18" depth	1.00 1.00
307: Duric Xerarents clay loam, leveled-----	70	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00
310: Kimball loam-----	85	No limitations		No limitations		No limitations	

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
317: Thompsonflat loam-----	75	Limitations Shrink-swell (LEP 3-6)	0.06	Limitations Shrink-swell (LEP 3-6) Saturation from 2.5' to 6' depth	0.32 0.16	Limitations Slopes 4 to 8% Shrink-swell (LEP 3-6)	0.26 0.06
318: Thompsonflat fine sandy loam-----	50	No limitations		Limitations Saturation from 2.5' to 6' depth	0.16	Limitations Slopes 4 to 8%	0.26
Oroville gravelly fine sandy loam-----	40	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00
320: Vistarobles sandy loam--	50	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Pan (thin) < 20" depth Ponding (any duration) Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00
Redding loam-----	40	Limitations Saturation from 18 to 30" depth	0.39	Limitations Saturation < 2.5' depth	1.00	Limitations Saturation from 18 to 30" depth	0.39
321: Durixeralfs, fine-loamy, gravelly fine sandy loam-----	50	Limitations Saturation from 18 to 30" depth	0.88	Limitations Saturation < 2.5' depth Pan (thin) from 20-40"	1.00 0.71	Limitations Saturation from 18 to 30" depth	0.88
Durixeralfs, loamy-skeletal, gravelly fine sandy loam-----	20	Limitations Ponding (any duration) Saturation < 18" depth Thin pan <= 20"	1.00 1.00 1.00	Limitations Pan (thin) < 20" depth Ponding (any duration) Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 18" depth Thin pan <= 20"	1.00 1.00 1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
321: Typic Petraquepts silty clay-----	15	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Pan (thin) < 20" depth Ponding (any duration) Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00
330: Wilsoncreek loam, occasionally flooded---	60	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare Saturation from 2.5' to 6' depth	1.00 0.53	Limitations Flooding >= rare	1.00
Trainer loam, occasionally flooded---	25	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare Saturation from 2.5' to 6' depth	1.00 0.95	Limitations Flooding >= rare	1.00
331: Thompsonflat loam-----	85	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.06	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Saturation from 2.5' to 6' depth	1.00 0.32 0.16	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.06
335: Galt clay loam-----	85	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00
336: Galt clay-----	90	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00
337: Galt clay loam-----	85	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
338: Oxyaquic Xerofluvents silt loam-----	90	Limitations Ponding (any duration) Flooding >= rare	1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation from 2.5' to 6' depth	1.00 1.00 0.87	Limitations Ponding (any duration) Flooding >= rare	1.00 1.00
339: Oxyaquic Xerofluvents sandy loam, frequently flooded-----	90	Limitations Ponding (any duration) Flooding >= rare	1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation from 2.5' to 6' depth	1.00 1.00 0.87	Limitations Ponding (any duration) Flooding >= rare	1.00 1.00
340: Rock outcrop, Lovejoy basalt-----	35	Not rated		Not rated		Not rated	
Thermalrocks very gravelly loam-----	25	Limitations Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 0.01	Limitations Bedrock (hard) < 40" depth Fragments (>3") 25 to 50%	1.00 0.01	Limitations Bedrock (hard) < 20" depth Slopes 4 to 8% Fragments (>3") 25 to 50%	1.00 0.26 0.01
Campbellhills gravelly loam-----	20	Limitations Saturation < 18" depth Shrink-swell (LEP 3-6)	1.00 0.82	Limitations Saturation < 2.5' depth Shrink-swell (LEP 3-6) Bedrock (hard) from 40 to 60"	1.00 0.82 0.42	Limitations Saturation < 18" depth Shrink-swell (LEP 3-6) Slopes 4 to 8%	1.00 0.82 0.26
341: Elseys loam-----	25	Limitations Saturation < 18" depth Fragments (>3") 25 to 50% Bedrock (hard) from 20 to 40"	1.00 0.10 0.01	Limitations Saturation < 2.5' depth Bedrock (hard) < 40" depth Fragments (>3") 25 to 50%	1.00 1.00 0.10	Limitations Saturation < 18" depth Fragments (>3") 25 to 50% Bedrock (hard) from 20 to 40"	1.00 0.10 0.01

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
341: Beatsonhollow gravelly loam-----	25	Limitations Ponding (any duration) Saturation < 18" depth Bedrock (hard) < 20" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Bedrock (hard) < 40" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 18" depth Bedrock (hard) < 20" depth	1.00 1.00 1.00
Campbellhills gravelly loam-----	20	Limitations Saturation < 18" depth Shrink-swell (LEP 3-6)	1.00 0.82	Limitations Saturation < 2.5' depth Shrink-swell (LEP 3-6) Bedrock (hard) from 40 to 60"	1.00 0.82 0.42	Limitations Saturation < 18" depth Shrink-swell (LEP 3-6)	1.00 0.82
Rock outcrop, Lovejoy basalt-----	20	Not rated		Not rated		Not rated	
342: Thermalrocks very gravelly loam-----	40	Limitations Bedrock (hard) < 20" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Bedrock (hard) < 40" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Slopes > 8% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01
Beatsonhollow taxadjunct fine sandy loam-----	35	Limitations Saturation < 18" depth Bedrock (hard) < 20" depth	1.00 1.00	Limitations Saturation < 2.5' depth Bedrock (hard) < 40" depth	1.00 1.00	Limitations Saturation < 18" depth Bedrock (hard) < 20" depth	1.00 1.00
Rock outcrop, Lovejoy basalt-----	15	Not rated		Not rated		Not rated	
343: Coalcanyon very cobbly loam-----	50	Limitations Fragments (>3") >50% Slopes 8 to 15%	0.99 0.16	Limitations Fragments (>3") >50% Shrink-swell (LEP 3-6) Slopes 8 to 15%	0.99 0.18 0.16	Limitations Slopes > 8% Fragments (>3") >50%	1.00 0.99

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
343: Coonhollow gravelly loam-----	35	Limitations Fragments (>3") >50% Slopes 8 to 15%	1.00 0.16	Limitations Fragments (>3") >50% Shrink-swell (LEP 3-6) Slopes 8 to 15%	1.00 0.18 0.16	Limitations Slopes > 8% Fragments (>3") >50%	1.00 1.00
344: Coalcanyon very cobbly loam-----	45	Limitations Slopes > 15% Fragments (>3") >50%	1.00 0.99	Limitations Slopes > 15% Fragments (>3") >50% Shrink-swell (LEP 3-6)	1.00 0.99 0.18	Limitations Slopes > 8% Fragments (>3") >50%	1.00 0.99
Coonhollow gravelly loam-----	30	Limitations Slopes > 15% Fragments (>3") >50%	1.00 1.00	Limitations Slopes > 15% Fragments (>3") >50% Shrink-swell (LEP 3-6)	1.00 1.00 0.18	Limitations Slopes > 8% Fragments (>3") >50%	1.00 1.00
Rock outcrop, Lovejoy basalt-----	15	Not rated		Not rated		Not rated	
346: Cherotable loam-----	50	Limitations Shrink-swell (LEP >6)	1.00	Limitations Shrink-swell (LEP >6) Bedrock (hard) from 40 to 60" Saturation from 2.5' to 6' depth	1.00 0.84 0.83	Limitations Shrink-swell (LEP >6) Slopes 4 to 8%	1.00 0.26
Elsey loam-----	35	Limitations Saturation < 18" depth Fragments (>3") 25 to 50% Bedrock (hard) from 20 to 40"	1.00 0.10 0.01	Limitations Saturation < 2.5' depth Bedrock (hard) < 40" depth Fragments (>3") 25 to 50%	1.00 1.00 0.10	Limitations Saturation < 18" depth Slopes 4 to 8% Fragments (>3") 25 to 50%	1.00 0.26 0.10
347: Haplic Palexeralfs loam	90	Limitations Flooding >= rare Shrink-swell (LEP 3-6)	1.00 0.32	Limitations Flooding >= rare Shrink-swell (LEP >6)	1.00 0.99	Limitations Flooding >= rare Shrink-swell (LEP 3-6) Slopes 4 to 8%	1.00 0.32 0.26

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
353: Cherokeespring gravelly silt loam-----	80	Limitations Shrink-swell (LEP 3-6) Slopes 8 to 15%	0.68 0.63	Limitations Shrink-swell (LEP >6) Slopes 8 to 15%	1.00 0.63	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.68
355: Coalcanyon very cobbly loam-----	55	Limitations Slopes > 15% Fragments (>3") >50%	1.00 0.99	Limitations Slopes > 15% Fragments (>3") >50% Shrink-swell (LEP 3-6)	1.00 0.99 0.18	Limitations Slopes > 8% Fragments (>3") >50%	1.00 0.99
Talus-----	35	Not rated		Not rated		Not rated	
356: Coalcanyon very cobbly loam-----	45	Limitations Slopes > 15% Fragments (>3") >50%	1.00 0.99	Limitations Slopes > 15% Fragments (>3") >50% Shrink-swell (LEP 3-6)	1.00 0.99 0.18	Limitations Slopes > 8% Fragments (>3") >50%	1.00 0.99
Rock outcrop, basalt cliffs-----	20	Not rated		Not rated		Not rated	
Talus-----	20	Not rated		Not rated		Not rated	
Coonhollow gravelly loam-----	10	Limitations Slopes > 15% Fragments (>3") >50%	1.00 1.00	Limitations Slopes > 15% Fragments (>3") >50% Shrink-swell (LEP 3-6)	1.00 1.00 0.18	Limitations Slopes > 8% Fragments (>3") >50%	1.00 1.00
360: Typic Xerofluvents, coarse-loamy-----	45	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare Saturation from 2.5' to 6' depth	1.00 0.87	Limitations Flooding >= rare	1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
360: Typic Xerofluvents, sandy-skeletal-----	40	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare Saturation from 2.5' to 6' depth	1.00 0.87	Limitations Flooding >= rare	1.00
361: Typic Xerofluvents, sandy-skeletal-----	85	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare Saturation from 2.5' to 6' depth	1.00 0.87	Limitations Flooding >= rare	1.00
362: Ultic Haploxeralfs, sandstone, low elevation, very deep---	60	Limitations Shrink-swell (LEP 3-6)	0.22	No limitations		Limitations Shrink-swell (LEP 3-6)	0.22
Ultic Haploxeralfs, sandstone, low elevation, deep-----	25	No limitations		No limitations		No limitations	
363: Ultic Haploxeralfs, sandstone, low elevation, very deep---	60	Limitations Shrink-swell (LEP 3-6)	0.22	No limitations		Limitations Slopes 4 to 8% Shrink-swell (LEP 3-6)	0.26 0.22
Ultic Haploxeralfs, sandstone, low elevation, deep-----	30	Limitations Slopes 8 to 15%	0.63	Limitations Slopes 8 to 15%	0.63	Limitations Slopes > 8%	1.00
364: Ultic Haploxeralfs, sandstone, low elevation, deep-----	50	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
364: Ultic Haploxeralfs, sandstone, low elevation, very deep---	40	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.22	Limitations Slopes > 15%	1.00	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.22
365: Palexerults gravelly loam-----	80	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 1.00
366: Palexerults gravelly loam-----	80	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 1.00
370: Palexerults gravelly loam-----	80	Limitations Shrink-swell (LEP >6)	1.00	Limitations Shrink-swell (LEP >6)	1.00	Limitations Shrink-swell (LEP >6) Slopes 4 to 8%	1.00 0.74
375: Wickscorner loam-----	80	Limitations Shrink-swell (LEP >6)	1.00	Limitations Shrink-swell (LEP >6) Saturation from 2.5' to 6' depth	1.00 0.16	Limitations Shrink-swell (LEP >6) Slopes 4 to 8%	1.00 0.26
376: Flagcanyon gravelly loam-----	50	Limitations Shrink-swell (LEP 3-6) Saturation from 18 to 30" depth	0.32 0.28	Limitations Saturation < 2.5' depth Pan (thin) from 20-40" Shrink-swell (LEP 3-6)	1.00 0.46 0.32	Limitations Shrink-swell (LEP 3-6) Saturation from 18 to 30" depth Slopes 4 to 8%	0.32 0.28 0.02
Wickscorner loam-----	35	Limitations Shrink-swell (LEP >6)	1.00	Limitations Shrink-swell (LEP >6) Saturation from 2.5' to 6' depth	1.00 0.16	Limitations Shrink-swell (LEP >6)	1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
377: Flagcanyon taxadjunct fine sandy loam-----	55	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00
Durixeralfs, clayey- skeletal, loam-----	20	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00
Duraquerts gravelly clay-----	15	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00
400: Subaco taxadjunct clay--	85	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00
415: Ignord fine sandy loam--	90	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare	1.00
416: Calcic Haploxerolls sandy loam-----	90	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare Saturation < 2.5' depth	1.00 0.99	Limitations Flooding >= rare	1.00
418: Almendra loam-----	85	Limitations Shrink-swell (LEP 3-6)	0.01	No limitations		Limitations Shrink-swell (LEP 3-6)	0.01

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
419: Conejo fine sandy loam, overwash-----	85	Limitations Shrink-swell (LEP 3-6)	0.78	Limitations Shrink-swell (LEP 3-6)	0.78	Limitations Shrink-swell (LEP 3-6)	0.78
420: Conejo clay loam-----	85	Limitations Shrink-swell (LEP 3-6)	0.50	No limitations		Limitations Shrink-swell (LEP 3-6)	0.50
425: Vina fine sandy loam----	85	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare	1.00
426: Vina loam-----	85	No limitations		No limitations		No limitations	
439: Oxyaquic Xerofluvents clay-----	85	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00
440: Oxyaquic Xerofluvents silt loam, frequently flooded-----	80	Limitations Ponding (any duration) Flooding >= rare	1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 2.5' depth	1.00 1.00 0.99	Limitations Ponding (any duration) Flooding >= rare	1.00 1.00
441: Oxyaquic Xerofluvents very fine sandy loam---	90	Limitations Ponding (any duration) Flooding >= rare	1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 2.5' depth	1.00 1.00 0.99	Limitations Ponding (any duration) Flooding >= rare	1.00 1.00
442: Durixerolls clay loam---	55	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
442: Haploxerolls clay loam--	30	Limitations Flooding >= rare Shrink-swell (LEP 3-6)	1.00 0.01	Limitations Flooding >= rare Saturation < 2.5' depth	1.00 0.99	Limitations Flooding >= rare Shrink-swell (LEP 3-6)	1.00 0.01
443: Durixerolls loam-----	60	Limitations Flooding >= rare Saturation < 18" depth	1.00 1.00	Limitations Flooding >= rare Saturation < 2.5' depth	1.00 1.00	Limitations Flooding >= rare Saturation < 18" depth	1.00 1.00
Haploxerolls loam-----	25	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare Saturation < 2.5' depth	1.00 0.99	Limitations Flooding >= rare	1.00
445: Chico loam-----	85	Limitations Shrink-swell (LEP 3-6)	0.18	Limitations Shrink-swell (LEP 3-6)	0.01	Limitations Shrink-swell (LEP 3-6)	0.18
447: Charger fine sandy loam	80	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare Saturation from 2.5' to 6' depth	1.00 0.87	Limitations Flooding >= rare	1.00
448: Haploxerolls clay loam--	75	Limitations Flooding >= rare Shrink-swell (LEP 3-6)	1.00 0.82	Limitations Flooding >= rare Saturation from 2.5' to 6' depth	1.00 0.16	Limitations Flooding >= rare Shrink-swell (LEP 3-6)	1.00 0.82
449: Haploxerolls loam-----	75	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare Saturation from 2.5' to 6' depth	1.00 0.16	Limitations Flooding >= rare	1.00
500: Lofgren clay-----	45	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
500: Blavo clay-----	40	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00
501: Lofgren clay, occasionally flooded---	45	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00
Blavo clay, occasionally flooded---	40	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00
502: Blavo silt loam, overwash, occasionally flooded-----	80	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00
519: Edjobe silty clay-----	85	Limitations Ponding (any duration) Shrink-swell (LEP >6)	1.00 1.00	Limitations Ponding (any duration) Shrink-swell (LEP >6) Saturation < 2.5' depth	1.00 1.00 0.99	Limitations Ponding (any duration) Shrink-swell (LEP >6)	1.00 1.00
520: Esquon clay-----	60	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00
Neerdobe clay-----	30	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
521: Neerdobe silt loam, overwash-----	85	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00
522: Clear Lake silty clay loam, overwash-----	80	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00
523: Esquon silty clay loam, overwash-----	80	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00
525: Govstanford loam-----	85	Limitations Saturation from 18 to 30" depth	0.24	Limitations Saturation < 2.5' depth	1.00	Limitations Saturation from 18 to 30" depth	0.24
526: Govstanford loam, occasionally flooded---	85	Limitations Flooding >= rare Saturation from 18 to 30" depth	1.00 0.24	Limitations Flooding >= rare Saturation < 2.5' depth	1.00 1.00	Limitations Flooding >= rare Saturation from 18 to 30" depth	1.00 0.24
528: Neerdobe clay loam-----	90	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00
550: Dunstone loam, dry-----	60	Limitations Bedrock (soft) < 20" depth	1.00	Limitations Bedrock (soft) < 20" depth	1.00	Limitations Bedrock (soft) < 20" depth Slopes 4 to 8%	1.00 0.50

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
550: Loafercreek silt loam, dry-----	20	Limitations Slopes 8 to 15%	0.01	Limitations Bedrock (soft) from 20 to 40" Slopes 8 to 15%	0.54 0.01	Limitations Slopes > 8%	0.98
551: Dunstone loam, dry-----	35	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00
Lomarica loam-----	15	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 15% Shrink-swell (LEP >6) Bedrock (soft) from 20 to 40"	1.00 1.00 0.29	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 1.00
Argonaut taxadjunct loam-----	15	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 15% Shrink-swell (LEP >6) Bedrock (soft) from 20 to 40"	1.00 1.00 0.46	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 1.00
552: Dunstone gravelly loam--	45	Limitations Bedrock (soft) < 20" depth Bedrock (hard) from 20 to 40" Slopes 8 to 15%	1.00 0.03 0.01	Limitations Bedrock (hard) < 40" depth Bedrock (soft) < 20" depth Slopes 8 to 15%	1.00 1.00 0.01	Limitations Bedrock (soft) < 20" depth Slopes > 8% Bedrock (hard) from 20 to 40"	1.00 0.98 0.03
Loafercreek gravelly loam-----	40	Limitations Slopes 8 to 15%	0.01	Limitations Bedrock (hard) from 40 to 60" Bedrock (soft) from 20 to 40" Slopes 8 to 15%	0.96 0.35 0.01	Limitations Slopes > 8%	0.98

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
553: Dunstone gravelly loam--	45	Limitations Bedrock (soft) < 20" depth Slopes > 15% Bedrock (hard) from 20 to 40"	1.00 1.00 0.03	Limitations Slopes > 15% Bedrock (hard) < 40" depth Bedrock (soft) < 20" depth	1.00 1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8% Bedrock (hard) from 20 to 40"	1.00 1.00 0.03
Loafercreek gravelly loam-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Bedrock (hard) from 40 to 60" Bedrock (soft) from 20 to 40"	1.00 0.96 0.35	Limitations Slopes > 8%	1.00
554: Dunstone gravelly loam--	45	Limitations Bedrock (soft) < 20" depth Slopes > 15% Bedrock (hard) from 20 to 40"	1.00 1.00 0.03	Limitations Slopes > 15% Bedrock (hard) < 40" depth Bedrock (soft) < 20" depth	1.00 1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8% Bedrock (hard) from 20 to 40"	1.00 1.00 0.03
Loafercreek gravelly loam-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Bedrock (hard) from 40 to 60" Bedrock (soft) from 20 to 40"	1.00 0.96 0.35	Limitations Slopes > 8%	1.00
555: Dunstone gravelly loam--	45	Limitations Bedrock (soft) < 20" depth Slopes > 15% Bedrock (hard) from 20 to 40"	1.00 1.00 0.03	Limitations Slopes > 15% Bedrock (hard) < 40" depth Bedrock (soft) < 20" depth	1.00 1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8% Bedrock (hard) from 20 to 40"	1.00 1.00 0.03
Loafercreek gravelly loam-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Bedrock (hard) from 40 to 60" Bedrock (soft) from 20 to 40"	1.00 0.96 0.35	Limitations Slopes > 8%	1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
556:							
Mounthope loam-----	50	Limitations		Limitations		Limitations	
		Shrink-swell (LEP 3-6)	0.06	Shrink-swell (LEP 3-6)	0.06	Slopes > 8%	0.98
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Shrink-swell (LEP 3-6)	0.06
Hartsmill gravelly loam	40	Limitations		Limitations		Limitations	
		Shrink-swell (LEP 3-6)	0.78	Shrink-swell (LEP >6)	1.00	Slopes > 8%	0.98
		Fragments (>3") 25 to 50%	0.02	Fragments (>3") 25 to 50%	0.02	Shrink-swell (LEP 3-6)	0.78
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Fragments (>3") 25 to 50%	0.02
557:							
Mounthope loam-----	50	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.06	Shrink-swell (LEP 3-6)	0.06	Shrink-swell (LEP 3-6)	0.06
Hartsmill gravelly loam	40	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.78	Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP 3-6)	0.78
		Fragments (>3") 25 to 50%	0.02	Fragments (>3") 25 to 50%	0.02	Fragments (>3") 25 to 50%	0.02
558:							
Hartsmill gravelly loam	55	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.78	Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP 3-6)	0.78
		Fragments (>3") 25 to 50%	0.02	Fragments (>3") 25 to 50%	0.02	Fragments (>3") 25 to 50%	0.02
Mounthope loam-----	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.06	Shrink-swell (LEP 3-6)	0.06	Shrink-swell (LEP 3-6)	0.06
559:							
Hartsmill gravelly loam	55	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.78	Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP 3-6)	0.78
		Fragments (>3") 25 to 50%	0.02	Fragments (>3") 25 to 50%	0.02	Fragments (>3") 25 to 50%	0.02
Mounthope loam-----	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.06	Shrink-swell (LEP 3-6)	0.06	Shrink-swell (LEP 3-6)	0.06

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
560: Hartsmill gravelly loam	50	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.78 0.02	Limitations Slopes > 15% Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 1.00 0.02	Limitations Slopes > 8% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.78 0.02
Mounthope loam-----	30	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.06	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.06	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.06
561: Bigridge loam-----	50	Limitations Slopes 8 to 15%	0.01	Limitations Slopes 8 to 15%	0.01	Limitations Slopes > 8%	0.98
Minniecreek loam-----	35	Limitations Shrink-swell (LEP 3-6) Slopes 8 to 15%	0.50 0.01	Limitations Shrink-swell (LEP 3-6) Bedrock (soft) from 20 to 40" Slopes 8 to 15%	0.50 0.29 0.01	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	0.98 0.50
562: Bigridge loam-----	50	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Minniecreek loam-----	35	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Bedrock (soft) from 20 to 40"	1.00 0.50 0.29	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.50
563: Bigridge loam-----	50	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Minniecreek loam-----	35	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Bedrock (soft) from 20 to 40"	1.00 0.50 0.29	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.50

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
564: Bigridge loam-----	50	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Minniecreek loam-----	35	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Bedrock (soft) from 20 to 40"	1.00 0.50 0.29	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.50
565: Dunstone loam, dry-----	35	Limitations Bedrock (soft) < 20" depth	1.00	Limitations Bedrock (soft) < 20" depth	1.00	Limitations Bedrock (soft) < 20" depth Slopes 4 to 8%	1.00 0.50
Argonaut taxadjunct loam-----	30	Limitations Shrink-swell (LEP >6) Slopes 8 to 15%	1.00 0.01	Limitations Shrink-swell (LEP >6) Bedrock (soft) from 20 to 40" Slopes 8 to 15%	1.00 0.46 0.01	Limitations Shrink-swell (LEP >6) Slopes > 8%	1.00 0.98
Sunnyslope loam-----	20	Limitations Bedrock (soft) < 20" depth	1.00	Limitations Bedrock (soft) < 20" depth	1.00	Limitations Bedrock (soft) < 20" depth Slopes 4 to 8%	1.00 0.74
566: Dunstone loam, dry-----	45	Limitations Bedrock (soft) < 20" depth	1.00	Limitations Bedrock (soft) < 20" depth	1.00	Limitations Bedrock (soft) < 20" depth Slopes 4 to 8%	1.00 0.50
Loafercreek silt loam, dry-----	20	Limitations Slopes 8 to 15%	0.01	Limitations Bedrock (soft) from 20 to 40" Slopes 8 to 15%	0.54 0.01	Limitations Slopes > 8%	0.98
Katskillhill loam-----	15	Limitations Shrink-swell (LEP >6) Slopes 8 to 15%	1.00 0.01	Limitations Shrink-swell (LEP >6) Bedrock (hard) from 40 to 60" Slopes 8 to 15%	1.00 0.96 0.01	Limitations Shrink-swell (LEP >6) Slopes > 8%	1.00 0.98

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
567: Dunstone loam, dry-----	40	Limitations Bedrock (soft) < 20" depth	1.00	Limitations Bedrock (soft) < 20" depth	1.00	Limitations Bedrock (soft) < 20" depth Slopes 4 to 8%	1.00 0.50
Loafercreek silt loam, dry-----	25	Limitations Slopes 8 to 15%	0.01	Limitations Bedrock (soft) from 20 to 40" Slopes 8 to 15%	0.54 0.01	Limitations Slopes > 8%	0.98
Argonaut taxadjunct loam-----	20	Limitations Shrink-swell (LEP >6) Slopes 8 to 15%	1.00 0.01	Limitations Shrink-swell (LEP >6) Bedrock (soft) from 20 to 40" Slopes 8 to 15%	1.00 0.46 0.01	Limitations Shrink-swell (LEP >6) Slopes > 8%	1.00 0.98
577: Parkshill coarse sandy loam-----	40	Limitations Slopes 8 to 15%	0.01	Limitations Slopes 8 to 15%	0.01	Limitations Slopes > 8%	0.98
Flanly loam-----	25	Limitations Slopes 8 to 15%	0.01	Limitations Bedrock (soft) from 20 to 40" Slopes 8 to 15%	0.95 0.01	Limitations Slopes > 8%	0.98
Hurleton gravelly sandy loam-----	20	Limitations Bedrock (hard) from 20 to 40" Slopes 8 to 15%	0.84 0.04	Limitations Bedrock (hard) < 40" depth Slopes 8 to 15%	1.00 0.04	Limitations Slopes > 8% Bedrock (hard) from 20 to 40"	1.00 0.84
578: Flanly loam-----	45	Limitations Slopes 8 to 15%	0.01	Limitations Bedrock (soft) from 20 to 40" Slopes 8 to 15%	0.95 0.01	Limitations Slopes > 8%	0.98
Swedesflat cobbly fine sandy loam-----	35	Limitations Bedrock (soft) < 20" depth Slopes 8 to 15%	1.00 0.16	Limitations Bedrock (soft) < 20" depth Slopes 8 to 15%	1.00 0.16	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
580:							
Surnuf taxadjunct loam--	40	Limitations Shrink-swell (LEP >6) Slopes 8 to 15%	1.00 0.01	Limitations Shrink-swell (LEP >6) Slopes 8 to 15%	1.00 0.01	Limitations Shrink-swell (LEP >6) Slopes > 8%	1.00 0.98
Griffgulch very gravelly silt loam----	25	Limitations Shrink-swell (LEP >6) Fragments (>3") 25 to 50% Slopes 8 to 15%	0.99 0.94 0.01	Limitations Shrink-swell (LEP >6) Fragments (>3") 25 to 50% Bedrock (hard) from 40 to 60"	1.00 0.94 0.01	Limitations Shrink-swell (LEP >6) Slopes > 8% Fragments (>3") 25 to 50%	0.99 0.98 0.94
Rock outcrop, metavolcanic-----	20	Not rated		Not rated		Not rated	
581:							
Surnuf taxadjunct loam--	65	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 1.00
Griffgulch very gravelly silt loam----	20	Limitations Slopes > 15% Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 0.99 0.94	Limitations Slopes > 15% Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 1.00 0.94	Limitations Slopes > 8% Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 0.99 0.94
582:							
Surnuf taxadjunct loam--	50	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 1.00
Griffgulch very gravelly silt loam----	35	Limitations Slopes > 15% Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 0.99 0.94	Limitations Slopes > 15% Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 1.00 0.94	Limitations Slopes > 8% Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 0.99 0.94
583:							
Surnuf taxadjunct loam--	50	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
583: Griffgulch very gravelly silt loam-----	35	Limitations Slopes > 15% Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 0.99 0.94	Limitations Slopes > 15% Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 1.00 0.94	Limitations Slopes > 8% Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 0.99 0.94
584: Flanly loam-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Bedrock (soft) from 20 to 40"	1.00 0.95	Limitations Slopes > 8%	1.00
Swedesflat cobbly fine sandy loam-----	30	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00
Rackerby very gravelly sandy loam-----	25	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00
585: Flanly loam-----	45	Limitations Slopes 8 to 15%	0.01	Limitations Bedrock (soft) from 20 to 40" Slopes 8 to 15%	0.95 0.01	Limitations Slopes > 8%	0.98
Sommeyflat loam-----	35	No limitations		No limitations		Limitations Slopes 4 to 8%	0.26
586: Sommeyflat loam-----	45	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Mounthope loam-----	40	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.06	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.06	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.06

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
587: Sommeyleft loam-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Mounthope loam-----	30	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.06	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.06	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.06
Hurleton gravelly sandy loam-----	25	Limitations Slopes > 15% Bedrock (hard) from 20 to 40"	1.00 0.84	Limitations Slopes > 15% Bedrock (hard) < 40" depth	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) from 20 to 40"	1.00 0.84
588: Ultic Haploxeralfs, thermic, high terrace--	95	Limitations Saturation from 18 to 30" depth	0.88	Limitations Saturation < 2.5' depth	1.00	Limitations Saturation from 18 to 30" depth Slopes 4 to 8%	0.88 0.74
589: Ultic Haploxeralfs, thermic, high terrace--	95	Limitations Slopes > 15% Saturation from 18 to 30" depth	1.00 0.88	Limitations Slopes > 15% Saturation < 2.5' depth	1.00 1.00	Limitations Slopes > 8% Saturation from 18 to 30" depth	1.00 0.88
590: Vistarobles sandy loam--	30	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00
Redding loam-----	25	Limitations Saturation from 18 to 30" depth	0.39	Limitations Saturation < 2.5' depth	1.00	Limitations Saturation from 18 to 30" depth	0.39
Argonaut taxadjunct loam-----	20	Limitations Shrink-swell (LEP >6)	1.00	Limitations Shrink-swell (LEP >6) Bedrock (soft) from 20 to 40"	1.00 0.46	Limitations Shrink-swell (LEP >6) Slopes 4 to 8%	1.00 0.02

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
590: Haploxererts gravelly silty clay-----	15	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00
603: Oroville gravelly fine sandy loam-----	30	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00
Thermalito sandy loam---	25	Limitations Saturation < 18" depth Shrink-swell (LEP 3-6)	1.00 0.06	Limitations Saturation < 2.5' depth Shrink-swell (LEP 3-6)	1.00 0.06	Limitations Saturation < 18" depth Shrink-swell (LEP 3-6)	1.00 0.06
Fernandez sandy loam---	15	Limitations Shrink-swell (LEP >6)	1.00	Limitations Shrink-swell (LEP >6) Saturation from 2.5' to 6' depth	1.00 0.87	Limitations Shrink-swell (LEP >6)	1.00
Thompsonflat fine sandy loam-----	15	No limitations		Limitations Saturation from 2.5' to 6' depth	0.16	Limitations Slopes 4 to 8%	0.26
605: Duric Xerarents fine sandy loam, leveled---	75	Limitations Ponding (any duration) Saturation < 18" depth Thin pan <= 20"	1.00 1.00 1.00	Limitations Pan (thin) < 20" depth Ponding (any duration) Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 18" depth Thin pan <= 20"	1.00 1.00 1.00
Oroville gravelly fine sandy loam-----	20	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
606:							
Redtough loam-----	45	Limitations Saturation < 18" depth Shrink-swell (LEP 3-6)	1.00 0.01	Limitations Saturation < 2.5' depth	1.00	Limitations Saturation < 18" depth Shrink-swell (LEP 3-6)	1.00 0.01
Fallager loam-----	30	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00
Anita, gravelly duripan	15	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Pan (thin) < 20" depth Ponding (any duration) Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00
609:							
Anita, gravelly duripan	50	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Pan (thin) < 20" depth Ponding (any duration) Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00
Tuscan taxadjunct gravelly clay loam-----	40	Limitations Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00	Limitations Saturation < 2.5' depth Shrink-swell (LEP >6)	1.00 1.00	Limitations Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00
614:							
Doemill gravelly loam---	50	Limitations Saturation < 18" depth Bedrock (hard) < 20" depth	1.00 1.00	Limitations Saturation < 2.5' depth Bedrock (hard) < 40" depth	1.00 1.00	Limitations Saturation < 18" depth Bedrock (hard) < 20" depth	1.00 1.00
Jokerst very cobbly loam	40	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00
615:							
Doemill gravelly loam---	50	Limitations Saturation < 18" depth Bedrock (hard) < 20" depth	1.00 1.00	Limitations Saturation < 2.5' depth Bedrock (hard) < 40" depth	1.00 1.00	Limitations Saturation < 18" depth Bedrock (hard) < 20" depth	1.00 1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
615: Jokerst very cobbly loam	40	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00
616: Jokerst very cobbly loam	35	Limitations Saturation < 18" depth Bedrock (hard) < 20" depth Slopes 8 to 15%	1.00 1.00 0.16	Limitations Saturation < 2.5' depth Bedrock (hard) < 40" depth Slopes 8 to 15%	1.00 1.00 0.16	Limitations Slopes > 8% Saturation < 18" depth Bedrock (hard) < 20" depth	1.00 1.00 1.00
Doemill gravelly loam---	35	Limitations Saturation < 18" depth Bedrock (hard) < 20" depth Slopes 8 to 15%	1.00 1.00 0.16	Limitations Saturation < 2.5' depth Bedrock (hard) < 40" depth Slopes 8 to 15%	1.00 1.00 0.16	Limitations Slopes > 8% Saturation < 18" depth Bedrock (hard) < 20" depth	1.00 1.00 1.00
Typic Haploxeralfs gravelly loam-----	15	Limitations Slopes 8 to 15% Shrink-swell (LEP 3-6)	0.84 0.78	Limitations Slopes 8 to 15% Shrink-swell (LEP 3-6)	0.84 0.78	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.78
617: Doemill gravelly loam---	35	Limitations Slopes > 15% Saturation < 18" depth Bedrock (hard) < 20" depth	1.00 1.00 1.00	Limitations Slopes > 15% Saturation < 2.5' depth Bedrock (hard) < 40" depth	1.00 1.00 1.00	Limitations Slopes > 8% Saturation < 18" depth Bedrock (hard) < 20" depth	1.00 1.00 1.00
Jokerst very cobbly loam	30	Limitations Slopes > 15% Saturation < 18" depth Bedrock (hard) < 20" depth	1.00 1.00 1.00	Limitations Slopes > 15% Saturation < 2.5' depth Bedrock (hard) < 40" depth	1.00 1.00 1.00	Limitations Slopes > 8% Saturation < 18" depth Bedrock (hard) < 20" depth	1.00 1.00 1.00
Typic Haploxeralfs gravelly loam-----	20	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.78	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.78	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.78
619: Carhart taxadjunct clay	90	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
620: Doemill gravelly loam---	40	Limitations Saturation < 18" depth Bedrock (hard) < 20" depth	1.00 1.00	Limitations Saturation < 2.5' depth Bedrock (hard) < 40" depth	1.00 1.00	Limitations Saturation < 18" depth Bedrock (hard) < 20" depth Slopes 4 to 8%	1.00 1.00 0.26
Jokerst very cobbly loam	25	Limitations Ponding (any duration) Saturation < 18" depth Bedrock (hard) < 20" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Bedrock (hard) < 40" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 18" depth Bedrock (hard) < 20" depth	1.00 1.00 1.00
Ultic Haploxeralfs, thermic, gravelly loam	20	Limitations Fragments (>3") >50% Shrink-swell (LEP 3-6) Bedrock (hard) from 20 to 40"	1.00 0.78 0.35	Limitations Saturation < 2.5' depth Bedrock (hard) < 40" depth Fragments (>3") >50%	1.00 1.00 1.00	Limitations Fragments (>3") >50% Shrink-swell (LEP 3-6) Bedrock (hard) from 20 to 40"	1.00 0.78 0.35
621: Doemill gravelly loam---	30	Limitations Saturation < 18" depth Bedrock (hard) < 20" depth Slopes 8 to 15%	1.00 1.00 0.16	Limitations Saturation < 2.5' depth Bedrock (hard) < 40" depth Slopes 8 to 15%	1.00 1.00 0.16	Limitations Slopes > 8% Saturation < 18" depth Bedrock (hard) < 20" depth	1.00 1.00 1.00
Jokerst very cobbly loam	30	Limitations Saturation < 18" depth Bedrock (hard) < 20" depth Slopes 8 to 15%	1.00 1.00 0.16	Limitations Saturation < 2.5' depth Bedrock (hard) < 40" depth Slopes 8 to 15%	1.00 1.00 0.16	Limitations Slopes > 8% Saturation < 18" depth Bedrock (hard) < 20" depth	1.00 1.00 1.00
Ultic Haploxeralfs, thermic, gravelly loam	20	Limitations Fragments (>3") >50% Shrink-swell (LEP 3-6) Slopes 8 to 15%	1.00 0.78 0.37	Limitations Bedrock (hard) < 40" depth Fragments (>3") >50% Saturation < 2.5' depth	1.00 1.00 0.99	Limitations Slopes > 8% Fragments (>3") >50% Shrink-swell (LEP 3-6)	1.00 1.00 0.78
622: Xerorthents, shallow----	40	Limitations Bedrock (soft) < 20" depth Slopes > 15% Bedrock (hard) < 20" depth	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock (hard) < 40" depth Bedrock (soft) < 20" depth	1.00 1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00 1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
622: Typic Haploxeralfs gravelly loam-----	30	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.78	Limitations Slopes > 15% Bedrock (hard) < 40" depth Shrink-swell (LEP 3-6)	1.00 0.99 0.78	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.78
Rock outcrop, mudflow- breccia cliffs-----	15	Not rated		Not rated		Not rated	
623: Xerorthents, shallow----	40	Limitations Bedrock (soft) < 20" depth Slopes > 15% Bedrock (hard) < 20" depth	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock (hard) < 40" depth Bedrock (soft) < 20" depth	1.00 1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00 1.00
Typic Haploxeralfs gravelly loam-----	25	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.78	Limitations Slopes > 15% Bedrock (hard) < 40" depth Shrink-swell (LEP 3-6)	1.00 0.99 0.78	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.78
Rock outcrop, mudflow- breccia cliffs-----	20	Not rated		Not rated		Not rated	
624: Ultic Haploxeralfs, mesic, gravelly loam---	60	Limitations Fragments (>3") >50% Shrink-swell (LEP 3-6)	0.99 0.50	Limitations Fragments (>3") >50% Bedrock (hard) from 40 to 60" Shrink-swell (LEP 3-6)	0.99 0.96 0.50	Limitations Fragments (>3") >50% Shrink-swell (LEP 3-6) Slopes 4 to 8%	0.99 0.50 0.02
Rockstripe very gravelly loam-----	25	Limitations Bedrock (hard) < 20" depth Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	1.00 0.01 0.01	Limitations Bedrock (hard) < 40" depth Fragments (>3") 25 to 50%	1.00 0.01	Limitations Bedrock (hard) < 20" depth Slopes 4 to 8% Fragments (>3") 25 to 50%	1.00 0.26 0.01

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
625: Ultic Haploxeralfs, mesic, gravelly loam---	50	Limitations Slopes > 15% Fragments (>3") >50% Shrink-swell (LEP 3-6)	1.00 0.99 0.50	Limitations Slopes > 15% Fragments (>3") >50% Bedrock (hard) from 40 to 60"	1.00 0.99 0.96	Limitations Slopes > 8% Fragments (>3") >50% Shrink-swell (LEP 3-6)	1.00 0.99 0.50
Rockstripe very gravelly loam-----	35	Limitations Slopes > 15% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Slopes > 15% Bedrock (hard) < 40" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Slopes > 8% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01
626: Ultic Haploxeralfs gravelly loam-----	40	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 0.99	Limitations Slopes > 15% Shrink-swell (LEP >6) Bedrock (hard) from 40 to 60"	1.00 1.00 0.61	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 0.99
Rockstripe very gravelly loam-----	35	Limitations Slopes > 15% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Slopes > 15% Bedrock (hard) < 40" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Slopes > 8% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01
Rock outcrop, mudflow- breccia cliffs-----	15	Not rated		Not rated		Not rated	
627: Ultic Haploxeralfs gravelly loam-----	40	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 0.99	Limitations Slopes > 15% Shrink-swell (LEP >6) Bedrock (hard) from 40 to 60"	1.00 1.00 0.61	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 0.99

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
627: Rockstripe very gravelly loam-----	35	Limitations Slopes > 15% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Slopes > 15% Bedrock (hard) < 40" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Slopes > 8% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01
Rock outcrop, mudflow- breccia cliffs-----	15	Not rated		Not rated		Not rated	
628: Rockstripe very gravelly loam-----	40	Limitations Slopes > 15% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Slopes > 15% Bedrock (hard) < 40" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Slopes > 8% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01
Ultic Haploxeraalfs gravelly loam-----	35	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 0.99	Limitations Slopes > 15% Shrink-swell (LEP >6) Bedrock (hard) from 40 to 60"	1.00 1.00 0.61	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 0.99
Rock outcrop, mudflow- breccia cliffs-----	20	Not rated		Not rated		Not rated	
629: Slideland gravelly loam	80	Limitations Shrink-swell (LEP >6) Slopes 8 to 15%	0.99 0.37	Limitations Shrink-swell (LEP >6) Slopes 8 to 15%	1.00 0.37	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 0.99
630: Slideland gravelly loam	80	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 0.99	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 0.99
631: Slideland gravelly loam	80	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 0.99	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 0.99

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
632: Ultic Haploxeralfs, conglomerate, very deep	50	Limitations Shrink-swell (LEP >6) Slopes 8 to 15%	0.99 0.84	Limitations Slopes 8 to 15% Shrink-swell (LEP 3-6)	0.84 0.50	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 0.99
Ultic Haploxeralfs, conglomerate, moderately deep-----	40	Limitations Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	0.32 0.22	Limitations Bedrock (soft) from 20 to 40" Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	0.84 0.32 0.22	Limitations Slopes 4 to 8% Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	0.50 0.32 0.22
633: Ultic Haploxeralfs, conglomerate, very deep	60	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 0.99	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 0.99
Ultic Haploxeralfs, conglomerate, moderately deep-----	30	Limitations Slopes > 15% Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	1.00 0.32 0.22	Limitations Slopes > 15% Bedrock (soft) from 20 to 40" Fragments (>3") 25 to 50%	1.00 0.84 0.32	Limitations Slopes > 8% Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	1.00 0.32 0.22
634: Ultic Haploxeralfs, conglomerate, very deep	60	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 0.99	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 0.99
Ultic Haploxeralfs, conglomerate, moderately deep-----	30	Limitations Slopes > 15% Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	1.00 0.32 0.22	Limitations Slopes > 15% Bedrock (soft) from 20 to 40" Fragments (>3") 25 to 50%	1.00 0.84 0.32	Limitations Slopes > 8% Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	1.00 0.32 0.22

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
635: Ultic Haploxeralfs, conglomerate, very deep	50	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 0.99	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 0.99
Ultic Haploxeralfs, conglomerate, moderately deep-----	40	Limitations Slopes > 15% Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	1.00 0.32 0.22	Limitations Slopes > 15% Bedrock (soft) from 20 to 40" Fragments (>3") 25 to 50%	1.00 0.84 0.32	Limitations Slopes > 8% Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	1.00 0.32 0.22
636: Ultic Haploxeralfs, conglomerate, moderately deep-----	50	Limitations Slopes > 15% Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	1.00 0.32 0.22	Limitations Slopes > 15% Bedrock (soft) from 20 to 40" Fragments (>3") 25 to 50%	1.00 0.84 0.32	Limitations Slopes > 8% Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	1.00 0.32 0.22
Ultic Haploxeralfs, conglomerate, very deep	40	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 0.99	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 0.99
637: Ultic Haploxeralfs, sandstone-----	80	Limitations Slopes 8 to 15%	0.01	Limitations Slopes 8 to 15%	0.01	Limitations Slopes > 8%	0.98
638: Ultic Haploxeralfs, sandstone-----	80	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
639: Ultic Haploxeralfs, sandstone-----	75	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
640: Ultic Haploxeralfs, sandstone-----	75	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
641: Ultic Haploxeralfs, sandstone-----	75	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
642: Chinacamp gravelly loam	70	Limitations Shrink-swell (LEP >6)	0.99	Limitations Shrink-swell (LEP >6)	1.00	Limitations Shrink-swell (LEP >6) Slopes 4 to 8%	0.99 0.26
643: Chinacamp gravelly loam	70	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 0.99	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 0.99
644: Chinacamp gravelly loam	70	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 0.99	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 0.99
645: Chinacamp gravelly loam	70	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 0.99	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 0.99
646: Coalcanyon taxadjunct very gravelly loam-----	80	Limitations Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	0.78 0.30	Limitations Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	0.78 0.30	Limitations Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50% Slopes 4 to 8%	0.78 0.30 0.26
647: Coalcanyon taxadjunct very gravelly loam-----	75	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.78 0.30	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.78 0.30	Limitations Slopes > 8% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.78 0.30

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
648: Coalcanyon taxadjunct very gravelly loam-----	80	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.78 0.30	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.78 0.30	Limitations Slopes > 8% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.78 0.30
649: Coalcanyon taxadjunct very gravelly loam-----	75	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.78 0.30	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.78 0.30	Limitations Slopes > 8% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.78 0.30
650: Schott very gravelly loam-----	65	Limitations Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	0.97 0.78	Limitations Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6) Bedrock (hard) from 40 to 60"	0.97 0.78 0.42	Limitations Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6) Slopes 4 to 8%	0.97 0.78 0.26
651: Schott very gravelly loam-----	65	Limitations Slopes > 15% Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	1.00 0.97 0.78	Limitations Slopes > 15% Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	1.00 0.97 0.78	Limitations Slopes > 8% Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	1.00 0.97 0.78
652: Schott very gravelly loam-----	65	Limitations Slopes > 15% Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	1.00 0.97 0.78	Limitations Slopes > 15% Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	1.00 0.97 0.78	Limitations Slopes > 8% Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	1.00 0.97 0.78
Rock outcrop, mudflow breccia-----	20	Not rated		Not rated		Not rated	

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
654: Coridge bouldery loam---	70	Limitations Shrink-swell (LEP >6) Saturation from 18 to 30" depth Bedrock (hard) from 20 to 40"	0.99 0.90 0.90	Limitations Saturation < 2.5' depth Bedrock (hard) < 40" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Shrink-swell (LEP >6) Saturation from 18 to 30" depth Bedrock (hard) from 20 to 40"	0.99 0.90 0.90
Rock outcrop, Cohasset basalt-----	20	Not rated		Not rated		Not rated	
655: Coridge bouldery loam---	70	Limitations Shrink-swell (LEP >6) Bedrock (hard) from 20 to 40" Saturation from 18 to 30" depth	0.99 0.90 0.44	Limitations Saturation < 2.5' depth Bedrock (hard) < 40" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Slopes > 8% Shrink-swell (LEP >6) Bedrock (hard) from 20 to 40"	1.00 0.99 0.90
Rock outcrop, Cohasset basalt-----	20	Not rated		Not rated		Not rated	
656: Rock outcrop, basalt cliffs-----	40	Not rated		Not rated		Not rated	
Coalcanyon taxadjunct very gravelly loam----	40	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.78 0.30	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.78 0.30	Limitations Slopes > 8% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.78 0.30
657: Bonneyridge sandy loam--	35	No limitations		No limitations		Limitations Slopes 4 to 8%	0.74
Chawanakee gravelly sandy loam-----	30	Limitations Bedrock (soft) < 20" depth	1.00	Limitations Bedrock (soft) < 20" depth	1.00	Limitations Bedrock (soft) < 20" depth Slopes 4 to 8%	1.00 0.74
Rock outcrop, quartz diorite-----	20	Not rated		Not rated		Not rated	

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
658:							
Bonneyr ridge sandy loam--	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Chawanakee gravelly sandy loam-----	30	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00
Rock outcrop, quartz diorite-----	25	Not rated		Not rated		Not rated	
659:							
Bonneyr ridge sandy loam--	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Chawanakee gravelly sandy loam-----	30	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00
Rock outcrop, quartz diorite-----	25	Not rated		Not rated		Not rated	
660:							
Bonneyr ridge sandy loam--	30	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Chawanakee gravelly sandy loam-----	30	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00
Rock outcrop, quartz diorite-----	30	Not rated		Not rated		Not rated	
661:							
Millerridge gravelly sandy clay loam-----	45	Limitations Shrink-swell (LEP >6)	0.99	Limitations Shrink-swell (LEP >6) Bedrock (soft) from 20 to 40"	1.00 0.77	Limitations Shrink-swell (LEP >6) Slopes 4 to 8%	0.99 0.26

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
661: Boxrobber cobbly sandy clay loam-----	40	Limitations Bedrock (soft) < 20" depth Shrink-swell (LEP >6) Bedrock (hard) from 20 to 40"	1.00 0.99 0.46	Limitations Bedrock (hard) < 40" depth Bedrock (soft) < 20" depth Shrink-swell (LEP >6)	1.00 1.00 0.99	Limitations Bedrock (soft) < 20" depth Shrink-swell (LEP >6) Bedrock (hard) from 20 to 40"	1.00 0.99 0.46
662: Millerridge gravelly sandy clay loam-----	45	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 0.99	Limitations Slopes > 15% Shrink-swell (LEP >6) Bedrock (soft) from 20 to 40"	1.00 1.00 0.77	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 0.99
Boxrobber cobbly sandy clay loam-----	40	Limitations Bedrock (soft) < 20" depth Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00 0.99	Limitations Slopes > 15% Bedrock (hard) < 40" depth Bedrock (soft) < 20" depth	1.00 1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8% Shrink-swell (LEP >6)	1.00 1.00 0.99
663: Millerridge gravelly sandy clay loam-----	45	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 0.99	Limitations Slopes > 15% Shrink-swell (LEP >6) Bedrock (soft) from 20 to 40"	1.00 1.00 0.77	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 0.99
Boxrobber cobbly sandy clay loam-----	40	Limitations Bedrock (soft) < 20" depth Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00 0.99	Limitations Slopes > 15% Bedrock (hard) < 40" depth Bedrock (soft) < 20" depth	1.00 1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8% Shrink-swell (LEP >6)	1.00 1.00 0.99
664: Millerridge gravelly sandy clay loam-----	45	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 0.99	Limitations Slopes > 15% Shrink-swell (LEP >6) Bedrock (soft) from 20 to 40"	1.00 1.00 0.77	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 0.99

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
664: Boxrober cobbly sandy clay loam-----	40	Limitations Bedrock (soft) < 20" depth Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00 0.99	Limitations Slopes > 15% Bedrock (hard) < 40" depth Bedrock (soft) < 20" depth	1.00 1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8% Shrink-swell (LEP >6)	1.00 1.00 0.99
665: Surnuf gravelly loam----	40	Limitations Shrink-swell (LEP >6) Slopes 8 to 15%	1.00 0.01	Limitations Shrink-swell (LEP >6) Slopes 8 to 15%	1.00 0.01	Limitations Shrink-swell (LEP >6) Slopes > 8%	1.00 0.98
Bigridge loam-----	40	Limitations Slopes 8 to 15%	0.01	Limitations Slopes 8 to 15%	0.01	Limitations Slopes > 8%	0.98
666: Surnuf gravelly loam----	40	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 1.00
Bigridge loam-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
667: Surnuf gravelly loam----	40	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 1.00
Bigridge loam-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
668: Surnuf gravelly loam----	40	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 1.00
Bigridge loam-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
669:							
Oroshore gravelly loam--	35	Limitations		Limitations		Limitations	
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	0.99
		Fragments (>3") 25 to 50%	0.03	Bedrock (soft) from 20 to 40"	0.15	Slopes > 8%	0.98
		Slopes 8 to 15%	0.01	Fragments (>3") 25 to 50%	0.03	Fragments (>3") 25 to 50%	0.03
Mounthope loam-----							
	25	Limitations		Limitations		Limitations	
		Shrink-swell (LEP 3-6)	0.06	Shrink-swell (LEP 3-6)	0.06	Slopes > 8%	0.98
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Shrink-swell (LEP 3-6)	0.06
Dunstone gravelly loam--							
	20	Limitations		Limitations		Limitations	
		Bedrock (soft) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (soft) < 20" depth	1.00
		Bedrock (hard) from 20 to 40"	0.03	Bedrock (soft) < 20" depth	1.00	Slopes > 8%	0.98
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Bedrock (hard) from 20 to 40"	0.03
670:							
Oroshore gravelly loam--	35	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	0.99
		Fragments (>3") 25 to 50%	0.03	Bedrock (soft) from 20 to 40"	0.15	Fragments (>3") 25 to 50%	0.03
Mounthope loam-----							
	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.06	Shrink-swell (LEP 3-6)	0.06	Shrink-swell (LEP 3-6)	0.06
Dunstone gravelly loam--							
	20	Limitations		Limitations		Limitations	
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%	1.00	Bedrock (soft) < 20" depth	1.00
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00	Slopes > 8%	1.00
		Bedrock (hard) from 20 to 40"	0.03	Bedrock (soft) < 20" depth	1.00	Bedrock (hard) from 20 to 40"	0.03
671:							
Oroshore gravelly loam--	35	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	0.99
		Fragments (>3") 25 to 50%	0.03	Bedrock (soft) from 20 to 40"	0.15	Fragments (>3") 25 to 50%	0.03

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
671: Mounthope loam-----	25	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.06	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.06	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.06
Dunstone gravelly loam--	20	Limitations Bedrock (soft) < 20" depth Slopes > 15% Bedrock (hard) from 20 to 40"	1.00 1.00 0.03	Limitations Slopes > 15% Bedrock (hard) < 40" depth Bedrock (soft) < 20" depth	1.00 1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8% Bedrock (hard) from 20 to 40"	1.00 1.00 0.03
672: Oroshore gravelly loam--	30	Limitations Slopes > 15% Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 0.99 0.03	Limitations Slopes > 15% Shrink-swell (LEP >6) Bedrock (soft) from 20 to 40"	1.00 1.00 0.15	Limitations Slopes > 8% Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 0.99 0.03
Mounthope loam-----	25	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.06	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.06	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.06
Dunstone gravelly loam--	25	Limitations Bedrock (soft) < 20" depth Slopes > 15% Bedrock (hard) from 20 to 40"	1.00 1.00 0.03	Limitations Slopes > 15% Bedrock (hard) < 40" depth Bedrock (soft) < 20" depth	1.00 1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8% Bedrock (hard) from 20 to 40"	1.00 1.00 0.03
674: Chawanakee gravelly sandy loam-----	30	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00
Bonneyr ridge sandy loam--	30	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Rock outcrop, quartz diorite-----	30	Not rated		Not rated		Not rated	

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
675:							
Clearhayes sandy clay loam-----	70	Limitations Flooding >= rare Saturation from 18 to 30" depth Fragments (>3") 25 to 50%	1.00 0.95 0.01	Limitations Flooding >= rare Saturation < 2.5' depth Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Flooding >= rare Saturation from 18 to 30" depth Fragments (>3") 25 to 50%	1.00 0.95 0.01
Hamslough clay-----	15	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 2.5' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Saturation < 18" depth	1.00 1.00 1.00
676:							
Carhart clay-----	50	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00
Anita taxadjunct clay---	40	Limitations Bedrock (soft) < 20" depth Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Bedrock (soft) < 20" depth Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00
677:							
Tuscan gravelly loam---	40	Limitations Saturation < 18" depth Pan (thick) < 20" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Saturation < 2.5' depth Pan (thick) < 40" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Saturation < 18" depth Pan (thick) < 20" depth Shrink-swell (LEP >6)	1.00 1.00 1.00
Fallager loam-----	25	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00
Anita, gravelly duripan	15	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
679:							
Lucksev loam-----	40	Limitations		Limitations		Limitations	
		Bedrock (soft) < 20" depth	1.00	Saturation < 2.5' depth	1.00	Bedrock (soft) < 20" depth	1.00
		Saturation < 18" depth	1.00	Bedrock (soft) < 20" depth	1.00	Saturation < 18" depth	1.00
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00
Butteside gravelly loam	35	Limitations		Limitations		Limitations	
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00
				Bedrock (soft) from 20 to 40"	0.71	Slopes 4 to 8%	0.74
Carhart clay-----	15	Limitations		Limitations		Limitations	
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation < 18" depth	1.00
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00
				Bedrock (soft) from 20 to 40"	0.46	Slopes 4 to 8%	0.26
680:							
Lucksev loam-----	45	Limitations		Limitations		Limitations	
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%	1.00	Bedrock (soft) < 20" depth	1.00
		Slopes > 15%	1.00	Bedrock (soft) < 20" depth	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00
Butteside gravelly loam	40	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00
				Bedrock (soft) from 20 to 40"	0.71		
683:							
Typic Haploxeralfs, magnesian, low elevation	50	Limitations		Limitations		Limitations	
		Shrink-swell (LEP >6)	0.99	Bedrock (hard) < 40" depth	1.00	Shrink-swell (LEP >6)	0.99
		Bedrock (hard) from 20 to 40"	0.46	Shrink-swell (LEP >6)	1.00	Slopes > 8%	0.98
		Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01	Bedrock (hard) from 20 to 40"	0.46
Earlal very gravelly loam-----	20	Limitations		Limitations		Limitations	
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Bedrock (hard) < 20" depth	1.00
		Fragments (>3") 25 to 50%	0.44	Fragments (>3") 25 to 50%	0.44	Shrink-swell (LEP >6)	1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
683: Rock outcrop, serpentinite-----	15	Not rated		Not rated		Not rated	
684: Typic Haploxeralfs, magnesian, low elevation	50	Limitations Slopes > 15% Shrink-swell (LEP >6) Bedrock (hard) from 20 to 40"	1.00 0.99 0.46	Limitations Slopes > 15% Bedrock (hard) < 40" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Slopes > 8% Shrink-swell (LEP >6) Bedrock (hard) from 20 to 40"	1.00 0.99 0.46
Earlial very gravelly loam-----	20	Limitations Slopes > 15% Bedrock (hard) < 20" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock (hard) < 40" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth Shrink-swell (LEP >6)	1.00 1.00 1.00
Rock outcrop, serpentinite-----	15	Not rated		Not rated		Not rated	
685: Bosquejo taxadjunct, gravelly substratum----	70	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00 1.00
686: Redsluff taxadjunct clay loam-----	70	Limitations Flooding >= rare Shrink-swell (LEP >6)	1.00 0.99	Limitations Flooding >= rare Saturation from 2.5' to 6' depth Shrink-swell (LEP 3-6)	1.00 0.95 0.50	Limitations Flooding >= rare Shrink-swell (LEP >6)	1.00 0.99
687: Xerorthents, shallow----	45	Limitations Bedrock (soft) < 20" depth Bedrock (hard) < 20" depth Shrink-swell (LEP >6)	1.00 1.00 0.99	Limitations Bedrock (hard) < 40" depth Bedrock (soft) < 20" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Bedrock (soft) < 20" depth Bedrock (hard) < 20" depth Shrink-swell (LEP >6)	1.00 1.00 0.99

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
687: Typic Haploxeralfs gravelly loam-----	40	Limitations Shrink-swell (LEP 3-6) Slopes 8 to 15%	0.78 0.63	Limitations Bedrock (hard) < 40" depth Shrink-swell (LEP 3-6) Slopes 8 to 15%	0.99 0.78 0.63	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.78
700: Retsongulch very gravelly sandy loam---	40	Limitations Slopes > 15% Fragments (>3") 25 to 50% Bedrock (hard) from 20 to 40"	1.00 0.55 0.46	Limitations Slopes > 15% Bedrock (hard) < 40" depth Fragments (>3") 25 to 50%	1.00 1.00 0.55	Limitations Slopes > 8% Fragments (>3") 25 to 50% Bedrock (hard) from 20 to 40"	1.00 0.55 0.46
Flumewall gravelly sandy loam-----	25	Limitations Slopes > 15% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.82	Limitations Slopes > 15% Bedrock (hard) < 40" depth Fragments (>3") 25 to 50%	1.00 1.00 0.82	Limitations Slopes > 8% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.82
701: Powellton gravelly loam	40	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.01	Limitations Slopes > 15%	1.00	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.01
Obstruction gravelly sandy loam-----	30	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
702: Cerpone gravelly loam---	50	Limitations Shrink-swell (LEP >6) Slopes 8 to 15%	0.99 0.37	Limitations Shrink-swell (LEP 3-6) Slopes 8 to 15% Bedrock (hard) from 40 to 60"	0.50 0.37 0.03	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 0.99

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
702: Typic Haploxeralfs, magnesian, very gravelly loam-----	20	Limitations Shrink-swell (LEP >6) Slopes 8 to 15%	1.00 0.16	Limitations Shrink-swell (LEP >6) Slopes 8 to 15% Bedrock (hard) from 40 to 60"	1.00 0.16 0.13	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 1.00
Earlal very gravelly loam-----	15	Limitations Bedrock (hard) < 20" depth Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 1.00 0.44	Limitations Bedrock (hard) < 40" depth Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 1.00 0.44	Limitations Slopes > 8% Bedrock (hard) < 20" depth Shrink-swell (LEP >6)	1.00 1.00 1.00
703: Cerpone gravelly loam---	30	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 0.99	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Bedrock (hard) from 40 to 60"	1.00 0.50 0.03	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 0.99
Typic Haploxeralfs, magnesian, very gravelly loam-----	30	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 15% Shrink-swell (LEP >6) Bedrock (hard) from 40 to 60"	1.00 1.00 0.13	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 1.00
Earlal very gravelly loam-----	15	Limitations Slopes > 15% Bedrock (hard) < 20" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock (hard) < 40" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth Shrink-swell (LEP >6)	1.00 1.00 1.00
Rock outcrop, serpentinite-----	15	Not rated		Not rated		Not rated	

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
704: Typic Haploxeralfs, magnesian, very gravelly loam-----	40	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 15% Shrink-swell (LEP >6) Bedrock (hard) from 40 to 60"	1.00 1.00 0.13	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 1.00
Earlal very gravelly loam-----	20	Limitations Slopes > 15% Bedrock (hard) < 20" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock (hard) < 40" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth Shrink-swell (LEP >6)	1.00 1.00 1.00
Cerpone gravelly loam---	15	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 0.99	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Bedrock (hard) from 40 to 60"	1.00 0.50 0.03	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 0.99
Rock outcrop, serpentinite-----	15	Not rated		Not rated		Not rated	
705: Typic Haploxeralfs, magnesian, very gravelly loam-----	35	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 15% Shrink-swell (LEP >6) Bedrock (hard) from 40 to 60"	1.00 1.00 0.13	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 1.00
Earlal very gravelly loam-----	25	Limitations Slopes > 15% Bedrock (hard) < 20" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock (hard) < 40" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth Shrink-swell (LEP >6)	1.00 1.00 1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
705: Cerpone gravelly loam---	15	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 0.99	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Bedrock (hard) from 40 to 60"	1.00 0.50 0.03	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 0.99
Rock outcrop, serpentinite-----	15	Not rated		Not rated		Not rated	
711: Dixmine very gravelly loam-----	45	Limitations Shrink-swell (LEP >6) Fragments (>3") 25 to 50% Slopes 8 to 15%	0.99 0.01 0.01	Limitations Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50% Slopes 8 to 15%	0.06 0.01 0.01	Limitations Shrink-swell (LEP >6) Slopes > 8% Fragments (>3") 25 to 50%	0.99 0.98 0.01
Toadtown loam-----	40	Limitations Shrink-swell (LEP 3-6) Slopes 8 to 15%	0.50 0.01	Limitations Shrink-swell (LEP 3-6) Slopes 8 to 15%	0.50 0.01	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	0.98 0.50
712: Dixmine very gravelly loam-----	50	Limitations Slopes > 15% Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 0.99 0.01	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.06 0.01	Limitations Slopes > 8% Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 0.99 0.01
Toadtown loam-----	40	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.50
713: Dixmine very gravelly loam-----	50	Limitations Slopes > 15% Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 0.99 0.01	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.06 0.01	Limitations Slopes > 8% Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 0.99 0.01
Toadtown loam-----	35	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.50

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
714:							
Dixmine very gravelly loam-----	50	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP 3-6)	0.06	Shrink-swell (LEP >6)	0.99
		Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01
Toadtown loam-----	35	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
715:							
Logtrain gravelly loam--	40	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.01	Bedrock (hard) from 40 to 60"	0.13	Shrink-swell (LEP 3-6)	0.01
Bottlehill very gravelly loam-----	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.50	Bedrock (hard) < 40" depth	1.00	Shrink-swell (LEP 3-6)	0.50
		Bedrock (hard) from 20 to 40"	0.29	Shrink-swell (LEP 3-6)	0.50	Bedrock (hard) from 20 to 40"	0.29
Walkermine very gravelly loam-----	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) < 20" depth	1.00
		Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01
716:							
Griffgulch very gravelly silt loam----	40	Limitations		Limitations		Limitations	
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	0.99
		Fragments (>3") 25 to 50%	0.94	Fragments (>3") 25 to 50%	0.94	Fragments (>3") 25 to 50%	0.94
				Bedrock (hard) from 40 to 60"	0.01	Slopes 4 to 8%	0.74
Surnuf gravelly loam----	40	Limitations		Limitations		Limitations	
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 8%	0.98

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
717:							
Griffgulch very gravelly silt loam-----	40	Limitations Slopes > 15% Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 0.99 0.94	Limitations Slopes > 15% Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 1.00 0.94	Limitations Slopes > 8% Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 0.99 0.94
Surnuf gravelly loam----	40	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 1.00
718:							
Griffgulch very gravelly silt loam-----	35	Limitations Slopes > 15% Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 0.99 0.94	Limitations Slopes > 15% Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 1.00 0.94	Limitations Slopes > 8% Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 0.99 0.94
Surnuf gravelly loam----	35	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 1.00
Spine taxadjunct very cobbly loam-----	15	Limitations Slopes > 15% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.84	Limitations Slopes > 15% Bedrock (hard) < 40" depth Fragments (>3") 25 to 50%	1.00 1.00 0.84	Limitations Slopes > 8% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.84
719:							
Griffgulch very gravelly silt loam-----	35	Limitations Slopes > 15% Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 0.99 0.94	Limitations Slopes > 15% Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 1.00 0.94	Limitations Slopes > 8% Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 0.99 0.94
Surnuf gravelly loam----	30	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 1.00
Spine taxadjunct very cobbly loam-----	20	Limitations Slopes > 15% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.84	Limitations Slopes > 15% Bedrock (hard) < 40" depth Fragments (>3") 25 to 50%	1.00 1.00 0.84	Limitations Slopes > 8% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.84

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
720: Dystroxerepts extremely gravelly loam-----	40	Limitations Slopes > 15% Fragments (>3") 25 to 50% Bedrock (hard) from 20 to 40"	1.00 0.90 0.01	Limitations Slopes > 15% Bedrock (hard) < 40" depth Fragments (>3") 25 to 50%	1.00 1.00 0.90	Limitations Slopes > 8% Fragments (>3") 25 to 50% Bedrock (hard) from 20 to 40"	1.00 0.90 0.01
Haploxerafls very gravelly loam-----	30	Limitations Slopes > 15% Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 0.99 0.99	Limitations Slopes > 15% Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 1.00 0.99	Limitations Slopes > 8% Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 0.99 0.99
Rock outcrop, metavolcanic-----	15	Not rated		Not rated		Not rated	
721: Haploxerands, granitic till, medial sandy loam	70	Limitations Slopes 8 to 15%	0.96	Limitations Slopes 8 to 15%	0.96	Limitations Slopes > 8%	1.00
722: Haploxerands, granitic till, medial sandy loam	70	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
723: Haploxerands, granitic till, medial sandy loam	70	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
724: Haploxerands, volcanic till, cobbly medial sandy loam-----	75	Limitations Slopes 8 to 15%	0.16	Limitations Slopes 8 to 15%	0.16	Limitations Slopes > 8%	1.00
725: Haploxerands, volcanic till, cobbly medial sandy loam-----	75	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
726: Haploxerands, volcanic till, cobbly medial sandy loam-----	75	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
727: Bonneyridge sandy loam--	85	No limitations		No limitations		Limitations Slopes 4 to 8%	0.26
728: Bonneyridge sandy loam--	85	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
729: Bonneyridge sandy loam--	85	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
730: Tusccoll gravelly loam--	60	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.22	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.22
Schott very gravelly loam-----	25	Limitations Slopes > 15% Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	1.00 0.97 0.78	Limitations Slopes > 15% Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	1.00 0.97 0.78	Limitations Slopes > 8% Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	1.00 0.97 0.78
731: Tusccoll gravelly loam--	50	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.22	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.22
Schott very gravelly loam-----	35	Limitations Slopes > 15% Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	1.00 0.97 0.78	Limitations Slopes > 15% Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	1.00 0.97 0.78	Limitations Slopes > 8% Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	1.00 0.97 0.78

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
732: Bonopile taxadjunct, duripan substratum-----	90	Limitations Fragments (>3") 25 to 50%	0.07	Limitations Saturation from 2.5' to 6' depth Fragments (>3") 25 to 50%	0.94 0.07	Limitations Fragments (>3") 25 to 50%	0.07
733: Haploxeralfs, terrace, gravelly loam-----	75	Limitations Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	0.99 0.99	Limitations Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	0.99 0.78	Limitations Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	0.99 0.99
734: Haploxerands medial sandy loam-----	55	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Aquic Xerofluvents peaty very fine sandy loam-----	35	Limitations Flooding >= rare Saturation < 18" depth Organic matter (PT, OL or OH)	1.00 1.00 1.00	Limitations Flooding >= rare Saturation < 2.5' depth Organic matter (PT, OL or OH)	1.00 1.00 1.00	Limitations Flooding >= rare Saturation < 18" depth Organic matter (PT, OL or OH)	1.00 1.00 1.00
735: Fluvaquents, loamy-----	80	Limitations Flooding >= rare Saturation < 18" depth	1.00 1.00	Limitations Flooding >= rare Saturation < 2.5' depth	1.00 1.00	Limitations Flooding >= rare Saturation < 18" depth	1.00 1.00
801: Obstruction gravelly sandy loam-----	70	Limitations Slopes 8 to 15%	0.16	Limitations Slopes 8 to 15%	0.16	Limitations Slopes > 8%	1.00
802: Obskel very gravelly sandy loam-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Obstruction gravelly sandy loam-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
803:							
Obskel very gravelly sandy loam-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Obstruction gravelly sandy loam-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
804:							
Obskel very gravelly sandy loam-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Obstruction gravelly sandy loam-----	25	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Retsongulch very gravelly sandy loam----	20	Limitations Slopes > 15% Fragments (>3") 25 to 50% Bedrock (hard) from 20 to 40"	1.00 0.55 0.46	Limitations Slopes > 15% Bedrock (hard) < 40" depth Fragments (>3") 25 to 50%	1.00 1.00 0.55	Limitations Slopes > 8% Fragments (>3") 25 to 50% Bedrock (hard) from 20 to 40"	1.00 0.55 0.46
805:							
Bottlehill very gravelly loam-----	50	Limitations Shrink-swell (LEP 3-6) Bedrock (hard) from 20 to 40"	0.50 0.29	Limitations Bedrock (hard) < 40" depth Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes 4 to 8% Shrink-swell (LEP 3-6) Bedrock (hard) from 20 to 40"	0.74 0.50 0.29
Walkermine very gravelly loam-----	20	Limitations Bedrock (hard) < 20" depth Slopes 8 to 15% Fragments (>3") 25 to 50%	1.00 0.84 0.01	Limitations Bedrock (hard) < 40" depth Slopes 8 to 15% Fragments (>3") 25 to 50%	1.00 0.84 0.01	Limitations Slopes > 8% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01
Logtrain gravelly loam--	20	Limitations Shrink-swell (LEP 3-6)	0.01	Limitations Bedrock (hard) from 40 to 60"	0.13	Limitations Slopes 4 to 8% Shrink-swell (LEP 3-6)	0.74 0.01

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
806: Bottlehill very gravelly loam-----	50	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Bedrock (hard) from 20 to 40"	1.00 0.50 0.29	Limitations Slopes > 15% Bedrock (hard) < 40" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 8% Shrink-swell (LEP 3-6) Bedrock (hard) from 20 to 40"	1.00 0.50 0.29
Walkermine very gravelly loam-----	20	Limitations Slopes > 15% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Slopes > 15% Bedrock (hard) < 40" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Slopes > 8% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01
Logtrain gravelly loam--	20	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.01	Limitations Slopes > 15% Bedrock (hard) from 40 to 60"	1.00 0.13	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.01
807: Bottlehill very gravelly loam-----	35	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Bedrock (hard) from 20 to 40"	1.00 0.50 0.29	Limitations Slopes > 15% Bedrock (hard) < 40" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 8% Shrink-swell (LEP 3-6) Bedrock (hard) from 20 to 40"	1.00 0.50 0.29
Logtrain gravelly loam--	30	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.01	Limitations Slopes > 15% Bedrock (hard) from 40 to 60"	1.00 0.13	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.01
Walkermine very gravelly loam-----	25	Limitations Slopes > 15% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Slopes > 15% Bedrock (hard) < 40" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Slopes > 8% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
808:							
Bottlehill very gravelly loam-----	45	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Bedrock (hard) from 20 to 40"	1.00 0.50 0.29	Limitations Slopes > 15% Bedrock (hard) < 40" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 8% Shrink-swell (LEP 3-6) Bedrock (hard) from 20 to 40"	1.00 0.50 0.29
Walkermine very gravelly loam-----	20	Limitations Slopes > 15% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Slopes > 15% Bedrock (hard) < 40" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Slopes > 8% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01
Logtrain gravelly loam--	20	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.01	Limitations Slopes > 15% Bedrock (hard) from 40 to 60"	1.00 0.13	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.01
809:							
Walkermine very gravelly loam-----	45	Limitations Slopes > 15% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Slopes > 15% Bedrock (hard) < 40" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Slopes > 8% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01
Bottlehill very gravelly loam-----	15	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Bedrock (hard) from 20 to 40"	1.00 0.50 0.29	Limitations Slopes > 15% Bedrock (hard) < 40" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 8% Shrink-swell (LEP 3-6) Bedrock (hard) from 20 to 40"	1.00 0.50 0.29
Logtrain gravelly loam--	15	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.01	Limitations Slopes > 15% Bedrock (hard) from 40 to 60"	1.00 0.13	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.01
Rock outcrop, metavolcanic-----	15	Not rated		Not rated		Not rated	

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
810: Dixmine very gravelly loam-----	35	Limitations Slopes > 15% Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 0.99 0.01	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.06 0.01	Limitations Slopes > 8% Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 0.99 0.01
Mac gravelly loam-----	25	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.22	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Bedrock (soft) from 20 to 40"	1.00 0.22 0.03	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.22
Spine very gravelly loam-----	25	Limitations Slopes > 15% Bedrock (hard) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.22	Limitations Slopes > 15% Bedrock (hard) < 40" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.22	Limitations Slopes > 8% Bedrock (hard) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.22
811: Powellton gravelly loam	50	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.01	Limitations Slopes > 15%	1.00	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.01
Toadtown loam-----	40	Limitations Shrink-swell (LEP 3-6)	0.50	Limitations Shrink-swell (LEP 3-6)	0.50	Limitations Slopes 4 to 8% Shrink-swell (LEP 3-6)	0.74 0.50
812: Powellton gravelly loam	50	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.01	Limitations Slopes > 15%	1.00	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.01
Toadtown loam-----	40	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.50
813: Powellton gravelly loam	50	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.01	Limitations Slopes > 15%	1.00	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.01

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
813: Toadtown loam-----	40	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.50
814: Mountyana gravelly loam	80	Limitations Shrink-swell (LEP 3-6) Slopes 8 to 15%	0.78 0.16	Limitations Shrink-swell (LEP 3-6) Slopes 8 to 15%	0.22 0.16	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.78
815: Mountyana gravelly loam	80	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.78	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.22	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.78
817: Lydon very gravelly medial coarse sandy loam-----	80	Limitations Bedrock (hard) from 20 to 40" Fragments (>3") 25 to 50%	0.11 0.02	Limitations Bedrock (hard) < 40" depth Fragments (>3") 25 to 50%	1.00 0.02	Limitations Slopes 4 to 8% Bedrock (hard) from 20 to 40" Fragments (>3") 25 to 50%	0.26 0.11 0.02
818: Lydon very gravelly medial coarse sandy loam-----	75	Limitations Slopes > 15% Bedrock (hard) from 20 to 40" Fragments (>3") 25 to 50%	1.00 0.11 0.02	Limitations Slopes > 15% Bedrock (hard) < 40" depth Fragments (>3") 25 to 50%	1.00 1.00 0.02	Limitations Slopes > 8% Bedrock (hard) from 20 to 40" Fragments (>3") 25 to 50%	1.00 0.11 0.02
819: Lydon very gravelly medial coarse sandy loam-----	65	Limitations Slopes > 15% Bedrock (hard) from 20 to 40" Fragments (>3") 25 to 50%	1.00 0.11 0.02	Limitations Slopes > 15% Bedrock (hard) < 40" depth Fragments (>3") 25 to 50%	1.00 1.00 0.02	Limitations Slopes > 8% Bedrock (hard) from 20 to 40" Fragments (>3") 25 to 50%	1.00 0.11 0.02
Rock outcrop, mudflow breccia-----	20	Not rated		Not rated		Not rated	

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
820: Lydon very gravelly medial coarse sandy loam-----	60	Limitations Slopes > 15% Bedrock (hard) from 20 to 40" Fragments (>3") 25 to 50%	1.00 0.11 0.02	Limitations Slopes > 15% Bedrock (hard) < 40" depth Fragments (>3") 25 to 50%	1.00 1.00 0.02	Limitations Slopes > 8% Bedrock (hard) from 20 to 40" Fragments (>3") 25 to 50%	1.00 0.11 0.02
Rock outcrop, mudflow breccia-----	25	Not rated		Not rated		Not rated	
821: Lydon very gravelly medial coarse sandy loam-----	55	Limitations Slopes > 15% Bedrock (hard) from 20 to 40" Fragments (>3") 25 to 50%	1.00 0.11 0.02	Limitations Slopes > 15% Bedrock (hard) < 40" depth Fragments (>3") 25 to 50%	1.00 1.00 0.02	Limitations Slopes > 8% Bedrock (hard) from 20 to 40" Fragments (>3") 25 to 50%	1.00 0.11 0.02
Rock outcrop, mudflow breccia-----	30	Not rated		Not rated		Not rated	
822: Bonepile gravelly medial loam-----	85	No limitations		No limitations		Limitations Slopes 4 to 8%	0.26
823: Bonepile gravelly medial loam-----	85	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
824: Beecee very gravelly medial loam-----	85	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
825: Beecee very gravelly medial loam-----	60	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
825: Lydon very gravelly medial coarse sandy loam-----	20	Limitations Slopes > 15% Bedrock (hard) from 20 to 40" Fragments (>3") 25 to 50%	1.00 0.11 0.02	Limitations Slopes > 15% Bedrock (hard) < 40" depth Fragments (>3") 25 to 50%	1.00 1.00 0.02	Limitations Slopes > 8% Bedrock (hard) from 20 to 40" Fragments (>3") 25 to 50%	1.00 0.11 0.02
826: Redbone gravelly medial sandy loam-----	80	Limitations Slopes 8 to 15%	0.16	Limitations Slopes 8 to 15%	0.16	Limitations Slopes > 8%	1.00
827: Redbone gravelly medial sandy loam-----	80	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
829: Paradiso loam-----	80	Limitations Shrink-swell (LEP >6)	1.00	Limitations Shrink-swell (LEP >6)	1.00	Limitations Shrink-swell (LEP >6) Slopes 4 to 8%	1.00 0.26
830: Paradiso loam-----	75	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 1.00
831: Surnuf gravelly loam----	40	Limitations Shrink-swell (LEP >6) Slopes 8 to 15%	1.00 0.01	Limitations Shrink-swell (LEP >6) Slopes 8 to 15%	1.00 0.01	Limitations Shrink-swell (LEP >6) Slopes > 8%	1.00 0.98
Bigridge loam-----	30	Limitations Slopes 8 to 15%	0.01	Limitations Slopes 8 to 15%	0.01	Limitations Slopes > 8%	0.98
Spine very gravelly loam-----	15	Limitations Bedrock (hard) < 20" depth Shrink-swell (LEP 3-6) Slopes 8 to 15%	1.00 0.22 0.04	Limitations Bedrock (hard) < 40" depth Shrink-swell (LEP 3-6) Slopes 8 to 15%	1.00 0.22 0.04	Limitations Slopes > 8% Bedrock (hard) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.22

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
832:							
Surnuf gravelly loam----	40	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00
Bigridge loam-----	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
Spine very gravelly loam-----	15	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) < 20" depth	1.00
		Shrink-swell (LEP 3-6)	0.22	Shrink-swell (LEP 3-6)	0.22	Shrink-swell (LEP 3-6)	0.22
833:							
Surnuf gravelly loam----	60	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00
Bigridge loam-----	15	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
Spine very gravelly loam-----	15	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) < 20" depth	1.00
		Shrink-swell (LEP 3-6)	0.22	Shrink-swell (LEP 3-6)	0.22	Shrink-swell (LEP 3-6)	0.22
834:							
Hietanen gravelly loam--	50	Limitations		No limitations		Limitations	
		Shrink-swell (LEP 3-6)	0.01			Slopes 4 to 8%	0.26
						Shrink-swell (LEP 3-6)	0.01
Mac gravelly loam-----	30	Limitations		Limitations		Limitations	
		Shrink-swell (LEP 3-6)	0.22	Shrink-swell (LEP 3-6)	0.22	Slopes 4 to 8%	0.74
				Bedrock (soft) from 20 to 40"	0.03	Shrink-swell (LEP 3-6)	0.22
835:							
Hietanen gravelly loam--	60	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.01			Shrink-swell (LEP 3-6)	0.01

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
835: Mac gravelly loam-----	20	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.22	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Bedrock (soft) from 20 to 40"	1.00 0.22 0.03	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.22
836: Hietanen gravelly loam--	50	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.01	Limitations Slopes > 15%	1.00	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.01
Mac gravelly loam-----	20	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.22	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Bedrock (soft) from 20 to 40"	1.00 0.22 0.03	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.22
Spine very gravelly loam-----	15	Limitations Slopes > 15% Bedrock (hard) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.22	Limitations Slopes > 15% Bedrock (hard) < 40" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.22	Limitations Slopes > 8% Bedrock (hard) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.22
837: Hietanen gravelly loam--	35	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.01	Limitations Slopes > 15%	1.00	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.01
Spine very gravelly loam-----	25	Limitations Slopes > 15% Bedrock (hard) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.22	Limitations Slopes > 15% Bedrock (hard) < 40" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.22	Limitations Slopes > 8% Bedrock (hard) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.22
Mac gravelly loam-----	20	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.22	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Bedrock (soft) from 20 to 40"	1.00 0.22 0.03	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.22

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
838:							
Dixmine very gravelly loam-----	35	Limitations Slopes > 15% Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 0.99 0.01	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.06 0.01	Limitations Slopes > 8% Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 0.99 0.01
Spine very gravelly loam-----	25	Limitations Slopes > 15% Bedrock (hard) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.22	Limitations Slopes > 15% Bedrock (hard) < 40" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.22	Limitations Slopes > 8% Bedrock (hard) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.22
Mac gravelly loam-----	25	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.22	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Bedrock (soft) from 20 to 40"	1.00 0.22 0.03	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.22
839:							
Chawanakee gravelly sandy loam-----	55	Limitations Bedrock (soft) < 20" depth Slopes 8 to 15%	1.00 0.16	Limitations Bedrock (soft) < 20" depth Slopes 8 to 15%	1.00 0.16	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00
Billscabin gravelly sandy loam-----	35	Limitations Slopes 8 to 15%	0.16	Limitations Slopes 8 to 15%	0.16	Limitations Slopes > 8%	1.00
841:							
Billscabin gravelly sandy loam-----	50	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Bonneyridge sandy loam--	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
842:							
Billscabin gravelly sandy loam-----	60	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
842: Bonneyridge sandy loam--	25	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
846: Bonneyridge sandy loam--	60	Limitations Slopes 8 to 15%	0.01	Limitations Slopes 8 to 15%	0.01	Limitations Slopes > 8%	0.98
Lewisflat loam-----	20	Limitations Slopes 8 to 15%	0.01	Limitations Slopes 8 to 15%	0.01	Limitations Slopes > 8%	0.98
847: Bonneyridge sandy loam--	60	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Lewisflat loam-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
848: Bonneyridge sandy loam--	60	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Lewisflat loam-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
850: Lewisflat loam-----	85	No limitations		No limitations		No limitations	
851: Lewisflat loam-----	80	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
852: Lewisflat loam-----	75	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
860: Toadtown gravelly loam--	60	Limitations Shrink-swell (LEP >6) Slopes 8 to 15%	1.00 0.01	Limitations Shrink-swell (LEP >6) Slopes 8 to 15%	1.00 0.01	Limitations Shrink-swell (LEP >6) Slopes > 8%	1.00 0.98

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
860: Powellton silt loam-----	20	Limitations Shrink-swell (LEP 3-6) Slopes 8 to 15%	0.78 0.01	Limitations Slopes 8 to 15%	0.01	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	0.98 0.78
861: Toadtown gravelly loam--	60	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 1.00
Powellton silt loam-----	20	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.78	Limitations Slopes > 15%	1.00	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.78
862: Toadtown gravelly loam--	60	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 1.00
Powellton silt loam-----	20	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.78	Limitations Slopes > 15%	1.00	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.78
863: Toadtown gravelly loam--	60	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 1.00
Powellton silt loam-----	20	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.78	Limitations Slopes > 15%	1.00	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.78
880: Sites taxadjunct gravelly loam-----	50	Limitations Shrink-swell (LEP >6) Slopes 8 to 15%	1.00 0.01	Limitations Shrink-swell (LEP >6) Slopes 8 to 15%	1.00 0.01	Limitations Shrink-swell (LEP >6) Slopes > 8%	1.00 0.98
Jocal taxadjunct gravelly loam-----	35	Limitations Slopes 8 to 15%	0.01	Limitations Slopes 8 to 15%	0.01	Limitations Slopes > 8%	0.98

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
881: Sites taxadjunct gravelly loam-----	50	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 1.00
Jocal taxadjunct gravelly loam-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
882: Sites taxadjunct gravelly loam-----	50	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 1.00
Jocal taxadjunct gravelly loam-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
883: Sites taxadjunct gravelly loam-----	50	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 1.00
Jocal taxadjunct gravelly loam-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
885: Rogerville silt loam----	75	Limitations Shrink-swell (LEP >6) Slopes 8 to 15%	1.00 0.01	Limitations Shrink-swell (LEP >6) Slopes 8 to 15%	1.00 0.01	Limitations Shrink-swell (LEP >6) Slopes > 8%	1.00 0.98
886: Rogerville silt loam----	80	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
892: Rogerville silt loam----	85	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 1.00
893: Rogerville silt loam----	85	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 1.00
902: Lava Flows, Lovejoy basalt-----	50	Not rated		Not rated		Not rated	
Lumpkin gravelly medial sandy loam-----	40	Limitations Bedrock (hard) < 20" depth Fragments (>3") >50%	1.00 1.00	Limitations Bedrock (hard) < 40" depth Fragments (>3") >50%	1.00 1.00	Limitations Bedrock (hard) < 20" depth Fragments (>3") >50% Slopes 4 to 8%	1.00 1.00 0.26
903: Mudwash gravelly medial sandy loam-----	45	Limitations Slopes 8 to 15%	0.01	Limitations Slopes 8 to 15%	0.01	Limitations Slopes > 8%	0.98
Timberisland very gravelly medial sandy loam-----	25	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.05	Limitations Slopes > 15% Bedrock (hard) from 40 to 60" Fragments (>3") 25 to 50%	1.00 0.61 0.05	Limitations Slopes > 8% Fragments (>3") 25 to 50%	1.00 0.05
Lavatop gravelly medial fine sandy loam-----	20	Limitations Bedrock (hard) from 20 to 40" Fragments (>3") 25 to 50% Slopes 8 to 15%	0.82 0.01 0.01	Limitations Bedrock (hard) < 40" depth Fragments (>3") 25 to 50% Slopes 8 to 15%	1.00 0.01 0.01	Limitations Slopes > 8% Bedrock (hard) from 20 to 40" Fragments (>3") 25 to 50%	0.98 0.82 0.01

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
904: Lava flows, Lovejoy basalt-----	60	Not rated		Not rated		Not rated	
Lavatop gravelly medial fine sandy loam-----	20	Limitations Slopes > 15% Bedrock (hard) from 20 to 40" Fragments (>3") 25 to 50%	1.00 0.82 0.01	Limitations Slopes > 15% Bedrock (hard) < 40" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Slopes > 8% Bedrock (hard) from 20 to 40" Fragments (>3") 25 to 50%	1.00 0.82 0.01
905: Lava flows, Lovejoy basalt-----	60	Not rated		Not rated		Not rated	
Lumpkin gravelly medial sandy loam-----	30	Limitations Slopes > 15% Bedrock (hard) < 20" depth Fragments (>3") >50%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock (hard) < 40" depth Fragments (>3") >50%	1.00 1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth Fragments (>3") >50%	1.00 1.00 1.00
906: Lava flows, Lovejoy basalt-----	60	Not rated		Not rated		Not rated	
Lumpkin gravelly medial sandy loam-----	30	Limitations Slopes > 15% Bedrock (hard) < 20" depth Fragments (>3") >50%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock (hard) < 40" depth Fragments (>3") >50%	1.00 1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth Fragments (>3") >50%	1.00 1.00 1.00
911: Endoquolls loam-----	75	Limitations Flooding >= rare Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Flooding >= rare Saturation < 2.5' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Flooding >= rare Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00
923: Powderhouse medial sandy loam-----	45	Limitations Slopes 8 to 15%	0.01	Limitations Bedrock (soft) from 20 to 40" Slopes 8 to 15%	0.06 0.01	Limitations Slopes > 8%	0.98

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
923:							
McNair medial coarse sandy loam-----	25	Limitations Slopes 8 to 15%	0.01	Limitations Slopes 8 to 15%	0.01	Limitations Slopes > 8%	0.98
Greenwell medial sandy loam-----	20	Limitations Slopes 8 to 15%	0.01	Limitations Bedrock (soft) from 20 to 40" Slopes 8 to 15%	0.26 0.01	Limitations Slopes > 8%	0.98
924:							
Powderhouse medial sandy loam-----	45	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Bedrock (soft) from 20 to 40"	1.00 0.06	Limitations Slopes > 8%	1.00
McNair medial coarse sandy loam-----	25	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Greenwell medial sandy loam-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Bedrock (soft) from 20 to 40"	1.00 0.26	Limitations Slopes > 8%	1.00
925:							
Powderhouse medial sandy loam-----	45	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Bedrock (soft) from 20 to 40"	1.00 0.06	Limitations Slopes > 8%	1.00
McNair medial coarse sandy loam-----	25	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Greenwell medial sandy loam-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Bedrock (soft) from 20 to 40"	1.00 0.26	Limitations Slopes > 8%	1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
930: Shakeridge gravelly medial coarse sandy loam-----	50	Limitations Slopes 8 to 15%	0.01	Limitations Slopes 8 to 15%	0.01	Limitations Slopes > 8%	0.98
Timberisland very gravelly medial sandy loam-----	40	Limitations Fragments (>3") 25 to 50% Slopes 8 to 15%	0.05 0.01	Limitations Bedrock (hard) from 40 to 60" Fragments (>3") 25 to 50% Slopes 8 to 15%	0.61 0.05 0.01	Limitations Slopes > 8% Fragments (>3") 25 to 50%	0.98 0.05
931: Shakeridge gravelly medial coarse sandy loam-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Mudwash gravelly medial sandy loam-----	25	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Timberisland very gravelly medial sandy loam-----	15	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.05	Limitations Slopes > 15% Bedrock (hard) from 40 to 60" Fragments (>3") 25 to 50%	1.00 0.61 0.05	Limitations Slopes > 8% Fragments (>3") 25 to 50%	1.00 0.05
932: Shakeridge gravelly medial coarse sandy loam-----	50	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Mudwash gravelly medial sandy loam-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
933: Shakeridge gravelly medial coarse sandy loam-----	80	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
934: Mudwash gravelly medial sandy loam-----	80	Limitations Slopes 8 to 15%	0.01	Limitations Slopes 8 to 15%	0.01	Limitations Slopes > 8%	0.98
939: Fluvaquentic Humaquepts very fine sandy loam---	85	Limitations Flooding >= rare Saturation < 18" depth	1.00 1.00	Limitations Flooding >= rare Saturation < 2.5' depth	1.00 1.00	Limitations Flooding >= rare Saturation < 18" depth	1.00 1.00
940: Dejonah gravelly loam---	50	Limitations Slopes 8 to 15%	0.01	Limitations Slopes 8 to 15%	0.01	Limitations Slopes > 8%	0.98
Stagpoint loam-----	30	Limitations Fragments (>3") 25 to 50% Slopes 8 to 15%	0.46 0.01	Limitations Fragments (>3") 25 to 50% Slopes 8 to 15%	0.46 0.01	Limitations Slopes > 8% Fragments (>3") 25 to 50%	0.98 0.46
941: Dejonah gravelly loam---	50	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Stagpoint loam-----	30	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.46	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.46	Limitations Slopes > 8% Fragments (>3") 25 to 50%	1.00 0.46
942: Stagpoint loam-----	50	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.46	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.46	Limitations Slopes > 8% Fragments (>3") 25 to 50%	1.00 0.46
Dejonah gravelly loam---	30	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
948:							
Stagpoint loam-----	55	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.46	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.46	Limitations Slopes > 8% Fragments (>3") 25 to 50%	1.00 0.46
Dejonah gravelly loam---	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
949:							
Rogerville taxadjunct fine sandy loam-----	80	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.06	Limitations Slopes > 8%	1.00
950:							
Lumpkin taxadjunct very gravelly medial very fine sandy loam-----	40	Limitations Bedrock (hard) < 20" depth Slopes 8 to 15%	1.00 0.01	Limitations Bedrock (hard) < 40" depth Slopes 8 to 15%	1.00 0.01	Limitations Bedrock (hard) < 20" depth Slopes > 8%	1.00 0.98
Rock outcrop, olivine basalt, andesite, or mudflow-----	25	Not rated		Not rated		Not rated	
Powderhouse medial sandy loam-----	20	Limitations Slopes 8 to 15%	0.01	Limitations Bedrock (soft) from 20 to 40" Slopes 8 to 15%	0.06 0.01	Limitations Slopes > 8%	0.98
951:							
Lumpkin taxadjunct very gravelly medial very fine sandy loam-----	40	Limitations Slopes > 15% Bedrock (hard) < 20" depth	1.00 1.00	Limitations Slopes > 15% Bedrock (hard) < 40" depth	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00
Rock outcrop, andesite--	25	Not rated		Not rated		Not rated	

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
951: Powderhouse medial sandy loam-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Bedrock (soft) from 20 to 40"	1.00 0.06	Limitations Slopes > 8%	1.00
960: Surnuf gravelly loam, high elevation-----	85	Limitations Shrink-swell (LEP >6)	1.00	Limitations Shrink-swell (LEP >6)	1.00	Limitations Shrink-swell (LEP >6) Slopes 4 to 8%	1.00 0.26
961: Surnuf gravelly loam, high elevation-----	85	Limitations Shrink-swell (LEP >6) Slopes 8 to 15%	1.00 0.37	Limitations Shrink-swell (LEP >6) Slopes 8 to 15%	1.00 0.37	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 1.00
962: Surnuf gravelly loam, high elevation-----	85	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 1.00
963: Surnuf gravelly loam, high elevation-----	85	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 1.00
990: Riverwash, frequently flooded-----	100	Limitations Flooding >= rare Saturation < 18" depth	1.00 1.00	Limitations Flooding >= rare Saturation < 2.5' depth	1.00 1.00	Limitations Flooding >= rare Saturation < 18" depth	1.00 1.00

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitations	Value	Limitations	Value	Limitations	Value
991: Xerofluvents sandy loam, frequently flooded-----	75	Limitations Flooding >= rare Saturation from 18 to 30" depth	1.00 0.03	Limitations Flooding >= rare Saturation < 2.5' depth	1.00 1.00	Limitations Flooding >= rare Saturation from 18 to 30" depth Slopes 4 to 8%	1.00 0.03 0.02
995: Pits, gravel-----	100	Not rated		Not rated		Not rated	
996: Dumps, excavated material-----	100	Not rated		Not rated		Not rated	
997: Pits-----	95	Not rated		Not rated		Not rated	
998: Dumps, landfill-----	100	Not rated		Not rated		Not rated	
999: Water-----	100	Not rated		Not rated		Not rated	
DAM: Dam, manmade-----	100	Not rated		Not rated		Not rated	

The interpretation for dwellings without basements evaluates the following soil properties, some at variable depths in the soil: flooding, ponding, wetness, slope, subsidence of organic soils, shrink-swell potential expressed as linear extensibility percent (LEP), organic Unified classes for low soil strength (PT, OL, and OH), depth to hard or soft bedrock, depth to a thick or thin cemented pan, and fragments more than 3 inches in size.

The interpretation for dwellings with basements evaluates the following soil properties, some at variable depths in the soil: flooding, ponding, wetness, slope, subsidence of organic soils, shrink-swell potential expressed as linear extensibility percent (LEP), organic Unified classes for low strength (PT, OL, and OH), depth to hard or soft bedrock, depth to a thick or thin cemented pan, and fragments more than 3 inches in size.

The interpretation for small commercial buildings evaluates the following soil properties, some at variable depths in the soil: flooding, ponding, wetness, slope, subsidence of organic soils, shrink-swell potential expressed as linear extensibility percent (LEP), depth to hard or soft bedrock, depth to a thick or thin cemented pan, and fragments more than 3 inches in size.

Table 16b.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The rating is based on the limitation with the highest value. Only the three highest value limitations are listed. There may be more limitations. Fine-earth fractions and rock fragments are reported on a weight basis. An explanation of the rating criteria and of the abbreviations used in describing the limitations is given at the end of the table)

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
100: Anita clay-----	60	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Caving potential	1.00 1.00 1.00
Galt clay-----	25	Limitations Shrink-swell (LEP >6) Ponding (any duration) Saturation < 12" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Caving potential	1.00 1.00 1.00
104: Bosquejo clay-----	85	Limitations AASHTO GI >8 (low soil strength) Ponding (any duration) Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Caving potential Saturation from 2.5' to 6' depth	1.00 1.00 0.87
105: Busacca clay loam-----	85	Limitations AASHTO GI >8 (low soil strength) Ponding (any duration) Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation from 2.5' to 6' depth Caving potential	1.00 0.53 0.10
108: Tuscan gravelly loam-----	45	Limitations Saturation < 12" depth Shrink-swell (LEP >6) AASHTO GI >8 (low soil strength)	1.00 1.00 1.00	Limitations Saturation < 2.5' depth Caving potential	1.00 0.10
Igo gravelly loam-----	20	Limitations Saturation < 12" depth AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)	1.00 1.00 0.99	Limitations Saturation < 2.5' depth Caving potential	1.00 0.10

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
108: Anita clay-----	15	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Ponding (any duration)	 1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Caving potential	 1.00 1.00 1.00
109: Bosquejo clay loam-----	85	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Ponding (any duration)	 1.00 1.00 1.00	Limitations Ponding (any duration) Caving potential Saturation from 2.5' to 6' depth	 1.00 1.00 0.87
110: Bosquejo silt loam, overwash, occasionally flooded-----	90	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Ponding (any duration)	 1.00 1.00 1.00	Limitations Ponding (any duration) Caving potential Saturation from 2.5' to 6' depth	 1.00 1.00 0.87
111yu: Auburn loam-----	40	Limitations Bedrock (hard) < 20" depth Slopes 8 to 15%	 1.00 0.63	Limitations Bedrock (hard) < 40" depth Slopes 8 to 15% Caving potential	 1.00 0.63 0.10
Sobrante loam-----	40	Limitations Slopes 8 to 15% Shrink-swell (LEP 3-6) AASHTO GI 5-8 (soil strength)	 0.63 0.50 0.22	Limitations Bedrock (hard) < 40" depth Bedrock (soft) from 20 to 40" Slopes 8 to 15%	 1.00 0.71 0.63
114yu: Auburn gravelly loam-----	40	Limitations Bedrock (hard) < 20" depth Slopes 8 to 15%	 1.00 0.63	Limitations Bedrock (hard) < 40" depth Slopes 8 to 15% Caving potential	 1.00 0.63 0.10
Sobrante gravelly loam-----	40	Limitations Slopes 8 to 15% Shrink-swell (LEP 3-6)	 0.63 0.50	Limitations Caving potential Bedrock (hard) < 40" depth Slopes 8 to 15%	 1.00 0.99 0.63

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
118: Xerorthents, tailings-----	80	Limitations Frequent or occasional flooding	1.00	Limitations Caving potential Frequent or occasional flooding	1.00 0.50
118co: Clear Lake clay, frequently flooded-----	90	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Frequent or occasional flooding	1.00 1.00 1.00	Limitations Caving potential Clay from 40 to 60% Saturation from 2.5' to 6' depth	1.00 0.94 0.61
119: Xerorthents, tailings-----	70	Limitations Frequent or occasional flooding	1.00	Limitations Caving potential Frequent or occasional flooding	1.00 0.50
Urban land-----	30	Not rated		Not rated	
119yu: Auburn gravelly loam-----	30	Limitations Bedrock (hard) < 20" depth Slopes > 15%	1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 0.10
Sobrante gravelly loam-----	30	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 15% Caving potential Bedrock (hard) < 40" depth	1.00 1.00 0.99
Rock outcrop-----	20	Not rated		Not rated	
120: Gridley taxadjunct clay loam-----	80	Limitations AASHTO GI >8 (low soil strength) Ponding (any duration) Saturation from 12 to 30" depth	1.00 1.00 0.94	Limitations Ponding (any duration) Saturation < 2.5' depth Caving potential	1.00 1.00 0.10
121: Boga loam-----	45	Limitations Ponding (any duration) AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6)	1.00 1.00 0.56	Limitations Ponding (any duration) Saturation from 2.5' to 6' depth Caving potential	1.00 0.97 0.50

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
121: Loemstone loam-----	40	Limitations Ponding (any duration) AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6)	1.00 1.00 0.56	Limitations Ponding (any duration) Saturation from 2.5' to 6' depth Caving potential	1.00 0.97 0.10
121su: Columbia fine sandy loam, frequently flooded-----	80	Limitations Frequent or occasional flooding	1.00	Limitations Saturation from 2.5' to 6' depth Frequent or occasional flooding Caving potential	0.61 0.50 0.10
125: Gridley taxadjunct loam-----	65	Limitations AASHTO GI >8 (low soil strength) Ponding (any duration) Shrink-swell (LEP >6)	1.00 1.00 0.99	Limitations Ponding (any duration) Saturation < 2.5' depth Clay from 40 to 60%	1.00 1.00 0.12
Calcic Haploxerolls sandy loam----	20	Limitations Rare flooding	0.50	Limitations Saturation < 2.5' depth Caving potential	0.99 0.10
126: Liveoak sandy loam-----	85	No limitations		Limitations Caving potential Saturation < 2.5' depth	1.00 0.99
127: Gridley taxadjunct loam-----	85	Limitations AASHTO GI >8 (low soil strength) Ponding (any duration) Shrink-swell (LEP >6)	1.00 1.00 0.99	Limitations Ponding (any duration) Saturation < 2.5' depth Clay from 40 to 60%	1.00 1.00 0.12
130: Eastbiggs loam-----	80	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Saturation from 12 to 30" depth	1.00 1.00 0.96	Limitations Saturation < 2.5' depth Pan (thin) from 20-40" Clay from 40 to 60%	1.00 0.71 0.50

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
133:					
Eastbiggs loam-----	50	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Saturation from 12 to 30" depth	1.00 1.00 0.96	Limitations Saturation < 2.5' depth Pan (thin) from 20-40" Clay from 40 to 60%	1.00 0.71 0.50
Galt clay loam-----	40	Limitations AASHTO GI >8 (low soil strength) Ponding (any duration) Saturation < 12" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Caving potential	1.00 1.00 1.00
136:					
Duric Xerarents, cut-----	35	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Caving potential	1.00 1.00 0.10
Duric Xerarents, fill-----	30	Limitations Ponding (any duration)	1.00	Limitations Ponding (any duration) Saturation from 2.5' to 6' depth Caving potential	1.00 0.90 0.10
Eastbiggs fine sandy loam, leveled-----	25	Limitations Ponding (any duration) Saturation from 12 to 30" depth Shrink-swell (LEP 3-6)	1.00 0.96 0.06	Limitations Ponding (any duration) Saturation < 2.5' depth Pan (thin) from 20-40"	1.00 1.00 0.46
138su:					
Liveoak sandy clay loam-----	85	No limitations		Limitations Saturation < 2.5' depth Caving potential	0.99 0.10
139su:					
Liveoak taxadjunct loam, frequently flooded-----	45	Limitations Frequent or occasional flooding	1.00	Limitations Frequent or occasional flooding Saturation from 2.5' to 6' depth Caving potential	0.50 0.47 0.10

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
139su: Galt taxadjunct clay loam, frequently flooded-----	40	Limitations Frequent or occasional flooding AASHTO GI >8 (low soil strength) Saturation from 12 to 30" depth	1.00 1.00 0.88	Limitations Saturation < 2.5' depth Frequent or occasional flooding Bulk density > 1.8 g/cc	1.00 0.50 0.50
143su: Marcum clay loam-----	45	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Clay from 40 to 60% Caving potential	0.50 0.10
Gridley clay loam-----	40	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)	1.00 1.00	Limitations Clay from 40 to 60% Caving potential Bedrock (soft) from 20 to 40"	0.12 0.10 0.03
149yu: Flanly sandy loam-----	80	Limitations Slopes 8 to 15% Shrink-swell (LEP 3-6) AASHTO GI 5-8 (soil strength)	0.63 0.50 0.22	Limitations Slopes 8 to 15% Bedrock (soft) from 20 to 40" Caving potential	0.63 0.15 0.10
150: Columbia stratified sand to fine sandy loam-----	85	Limitations Frequent or occasional flooding	1.00	Limitations Caving potential Saturation from 2.5' to 6' depth Frequent or occasional flooding	1.00 0.87 0.50
150su: Olashes sandy loam-----	85	Limitations Shrink-swell (LEP 3-6)	0.50	Limitations Caving potential	1.00
151yu: Flanly sandy loam-----	80	Limitations Slopes > 15% Shrink-swell (LEP 3-6) AASHTO GI 5-8 (soil strength)	1.00 0.50 0.22	Limitations Slopes > 15% Bedrock (soft) from 20 to 40" Caving potential	1.00 0.15 0.10

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
152: Gianella fine sandy loam, frequently flooded-----	85	Limitations Frequent or occasional flooding	1.00	Limitations Caving potential Frequent or occasional flooding	1.00 0.50
153: Gianella sandy loam, frequently flooded-----	85	Limitations Frequent or occasional flooding	1.00	Limitations Caving potential Frequent or occasional flooding	1.00 0.50
154: Gianella silt loam, frequently flooded-----	85	Limitations Frequent or occasional flooding	1.00	Limitations Caving potential Frequent or occasional flooding	1.00 0.50
158: Gianella fine sandy loam, occasionally flooded-----	85	Limitations Frequent or occasional flooding	1.00	Limitations Caving potential Frequent or occasional flooding	1.00 0.50
160: Gianella loam, occasionally flooded-----	85	Limitations Frequent or occasional flooding	1.00	Limitations Caving potential Frequent or occasional flooding	1.00 0.50
161: Gianella fine sandy loam, rarely flooded-----	90	Limitations Rare flooding	0.50	Limitations Caving potential	1.00
162: Gianella loam, rarely flooded----	90	Limitations Rare flooding	0.50	Limitations Caving potential	1.00
163yu: Holillipah loamy sand-----	85	Limitations Frequent or occasional flooding	1.00	Limitations Caving potential Frequent or occasional flooding	1.00 0.50

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
165yu:					
Holland loam-----	40	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 15% Caving potential	1.00 0.10
Hoda loam-----	25	Limitations AASHTO GI >8 (low soil strength) Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 15% Caving potential Clay from 40 to 60%	1.00 0.10 0.03
Hotaw loam-----	20	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 15% Bedrock (soft) from 20 to 40" Caving potential	1.00 0.15 0.10
173yu:					
Hotaw loam-----	45	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 15% Bedrock (soft) from 20 to 40" Caving potential	1.00 0.15 0.10
Chawanakee gravelly sandy loam----	20	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential	1.00 1.00 0.10
Holland loam-----	15	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 15% Caving potential	1.00 0.10
175:					
Farwell clay loam, rarely flooded	85	Limitations AASHTO GI >8 (low soil strength) Rare flooding Shrink-swell (LEP 3-6)	1.00 0.50 0.06	Limitations Caving potential	0.10
176:					
Farwell loam, occasionally flooded-----	85	Limitations Frequent or occasional flooding AASHTO GI >8 (low soil strength)	1.00 1.00	Limitations Frequent or occasional flooding Caving potential	0.50 0.10

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
176yu: Jocal loam-----	80	Limitations AASHTO GI >8 (low soil strength) Slopes 8 to 15% Shrink-swell (LEP 3-6)	1.00 0.63 0.50	Limitations Slopes 8 to 15% Caving potential	0.63 0.10
177: Farwell silt loam, occasionally flooded-----	85	Limitations AASHTO GI >8 (low soil strength) Frequent or occasional flooding Shrink-swell (LEP 3-6)	1.00 1.00 0.68	Limitations Frequent or occasional flooding Caving potential	0.50 0.10
178: Arbuckle gravelly loam-----	87	Limitations Rare flooding AASHTO GI 5-8 (soil strength)	0.50 0.22	Limitations Caving potential	1.00
179: Moda taxadjunct loam-----	65	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Clay from 40 to 60%	1.00 1.00 0.12
Arbuckle gravelly loam-----	20	Limitations Rare flooding AASHTO GI 5-8 (soil strength)	0.50 0.22	Limitations Caving potential	1.00
180: Dodgeland silty clay loam, occasionally flooded-----	85	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Caving potential	1.00 1.00 1.00
181: Dodgeland silty clay loam, frequently flooded-----	80	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Caving potential	1.00 1.00 1.00

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
188yu: Mariposa taxadjunct gravelly loam	80	Limitations Slopes > 15% Bedrock (hard) from 20 to 40"	1.00 0.95	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 1.00
189: Esquon silt loam, overwash-----	90	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Caving potential Saturation < 2.5' depth	1.00 1.00 0.99
189yu: Mariposa taxadjunct gravelly loam	80	Limitations Slopes > 15% Bedrock (hard) from 20 to 40"	1.00 0.95	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 1.00
196yu: Mildred cobbly loam-----	80	Limitations AASHTO GI >8 (low soil strength) Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock (soft) from 20 to 40" Clay from 40 to 60%	1.00 0.95 0.28
200: Parrott silt loam, occasionally flooded-----	85	Limitations Ponding (any duration) Frequent or occasional flooding AASHTO GI >8 (low soil strength)	1.00 1.00 1.00	Limitations Ponding (any duration) Frequent or occasional flooding Saturation from 2.5' to 6' depth	1.00 0.50 0.16
201: Parrott silt loam, frequently flooded-----	85	Limitations Ponding (any duration) Frequent or occasional flooding AASHTO GI >8 (low soil strength)	1.00 1.00 1.00	Limitations Ponding (any duration) Frequent or occasional flooding Saturation from 2.5' to 6' depth	1.00 0.50 0.16
203: Kusalslough silty clay loam, occasionally flooded-----	85	Limitations AASHTO GI >8 (low soil strength) Ponding (any duration) Frequent or occasional flooding	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation from 2.5' to 6' depth Clay from 40 to 60%	1.00 0.87 0.76

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
205:					
Parrott silt loam, frequently flooded-----	50	Limitations Ponding (any duration) Frequent or occasional flooding AASHTO GI >8 (low soil strength)	1.00 1.00 1.00	Limitations Ponding (any duration) Frequent or occasional flooding Saturation from 2.5' to 6' depth	1.00 0.50 0.16
Vermet silt loam, frequently flooded-----	35	Limitations AASHTO GI >8 (low soil strength) Ponding (any duration) Saturation < 12" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Frequent or occasional flooding	1.00 1.00 0.50
206:					
Islandbar sandy loam-----	60	Limitations Slopes 8 to 15%	0.01	Limitations Caving potential Slopes 8 to 15%	1.00 0.01
Chawanakee gravelly sandy loam----	30	Limitations Bedrock (soft) < 20" depth Slopes 8 to 15%	1.00 0.01	Limitations Bedrock (soft) < 20" depth Caving potential Slopes 8 to 15%	1.00 0.10 0.01
207:					
Islandbar sandy loam-----	60	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
Chawanakee gravelly sandy loam----	30	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential	1.00 1.00 0.10
208:					
Islandbar sandy loam-----	60	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
Chawanakee gravelly sandy loam----	30	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential	1.00 1.00 0.10

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
209:					
Islandbar sandy loam-----	60	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
Chawanakee gravelly sandy loam---	30	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential	1.00 1.00 0.10
210:					
Featherfalls sandy loam-----	50	Limitations Shrink-swell (LEP 3-6) Slopes 8 to 15%	0.32 0.01	Limitations Caving potential Slopes 8 to 15%	0.10 0.01
Islandbar sandy loam-----	35	Limitations Slopes 8 to 15%	0.01	Limitations Caving potential Slopes 8 to 15%	1.00 0.01
211:					
Featherfalls sandy loam-----	55	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.32	Limitations Slopes > 15% Caving potential	1.00 0.10
Islandbar sandy loam-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
212:					
Featherfalls sandy loam-----	55	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.32	Limitations Slopes > 15% Caving potential	1.00 0.10
Islandbar sandy loam-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
213:					
Featherfalls sandy loam-----	45	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.32	Limitations Slopes > 15% Caving potential	1.00 0.10

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
213: Islandbar sandy loam-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
214: Crystalhill gravelly coarse sandy loam-----	35	Limitations Slopes 8 to 15%	0.16	Limitations Caving potential Slopes 8 to 15%	1.00 0.16
Oregongulch gravelly sandy loam---	20	Limitations Slopes 8 to 15%	0.16	Limitations Caving potential Bedrock (soft) from 20 to 40" Slopes 8 to 15%	1.00 0.90 0.16
Craigsaddle coarse sandy loam----	20	No limitations		Limitations Caving potential	1.00
Rock outcrop, trondhemite-----	10	Not rated		Not rated	
215: Crystalhill gravelly coarse sandy loam-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
Oregongulch gravelly sandy loam---	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential Bedrock (soft) from 20 to 40"	1.00 1.00 0.90
Craigsaddle coarse sandy loam----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
Rock outcrop, trondhemite-----	10	Not rated		Not rated	
216: Crystalhill gravelly coarse sandy loam-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
216:					
Oregongulch gravelly sandy loam---	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential Bedrock (soft) from 20 to 40"	1.00 1.00 0.90
Craigsaddle coarse sandy loam-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
Rock outcrop, trondhemite-----	10	Not rated		Not rated	
217:					
Crystalhill gravelly coarse sandy loam-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
Oregongulch gravelly sandy loam---	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential Bedrock (soft) from 20 to 40"	1.00 1.00 0.90
Craigsaddle coarse sandy loam-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
Rock outcrop, trondhemite-----	10	Not rated		Not rated	
218:					
Rock outcrop, quartz diorite-----	60	Not rated		Not rated	
Lithic Xerorthents gravelly sandy loam-----	20	Limitations Bedrock (hard) < 20" depth Slopes > 15%	1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 0.10
Chawanakee gravelly sandy loam----	15	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential	1.00 1.00 0.10

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
219: Rock outcrop, quartz diorite-----	60	Not rated		Not rated	
Lithic Xerorthents gravelly sandy loam-----	20	Limitations Bedrock (hard) < 20" depth Slopes > 15%		Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	
Chawanakee gravelly sandy loam----	15	Limitations Slopes > 15% Bedrock (soft) < 20" depth		Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential	
220: Esquon clay, frequently flooded---	60	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Ponding (any duration)		Limitations Ponding (any duration) Saturation < 2.5' depth Caving potential	
Clear Lake silty clay loam, overwash-----	30	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Ponding (any duration)		Limitations Ponding (any duration) Saturation < 2.5' depth Caving potential	
221yu: Sites loam-----	85	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6)		Limitations Clay from 40 to 60% Caving potential	
222yu: Sites loam-----	85	Limitations AASHTO GI >8 (low soil strength) Slopes 8 to 15% Shrink-swell (LEP 3-6)		Limitations Slopes 8 to 15% Clay from 40 to 60% Caving potential	
225yu: Sites gravelly loam, bedrock substratum-----	80	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6)		Limitations Caving potential	

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
226yu: Sites gravelly loam, bedrock substratum-----	80	Limitations AASHTO GI >8 (low soil strength) Slopes 8 to 15% Shrink-swell (LEP 3-6)	1.00 0.63 0.50	Limitations Caving potential Slopes 8 to 15%	1.00 0.63
227yu: Sites gravelly loam, bedrock substratum-----	80	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 15% Caving potential	1.00 1.00
242yu: Surnuf loam-----	80	Limitations Slopes 8 to 15%	0.63	Limitations Slopes 8 to 15% Clay from 40 to 60% Caving potential	0.63 0.28 0.10
243yu: Surnuf loam-----	80	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Clay from 40 to 60% Caving potential	1.00 0.28 0.10
244yu: Surnuf loam-----	80	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Clay from 40 to 60% Caving potential	1.00 0.28 0.10
245: Surnuf loam-----	80	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Clay from 40 to 60% Caving potential	1.00 0.28 0.10
248yu: Trainer loam-----	85	Limitations Frequent or occasional flooding	1.00	Limitations Saturation from 2.5' to 6' depth Frequent or occasional flooding Caving potential	0.61 0.50 0.10

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
250: Llanoseco, occasionally flooded---	90	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Caving potential Frequent or occasional flooding	1.00 1.00 0.50
252: Whitecabin silty clay, occasionally flooded-----	60	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Caving potential	1.00 1.00 1.00
Ordferry silty clay, occasionally flooded-----	25	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Caving potential	1.00 1.00 1.00
252yu: Woodleaf gravelly loam-----	80	Limitations Bedrock (hard) from 20 to 40" Shrink-swell (LEP 3-6) Slopes 8 to 15%	0.64 0.50 0.04	Limitations Bedrock (hard) < 40" depth Caving potential Clay from 40 to 60%	1.00 1.00 0.28
253yu: Woodleaf gravelly loam-----	80	Limitations Slopes > 15% Bedrock (hard) from 20 to 40" Shrink-swell (LEP 3-6)	1.00 0.64 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 1.00
255: Whitecabin silty clay loam, occasionally flooded-----	60	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Caving potential	1.00 1.00 1.00
Ordferry silty clay, occasionally flooded-----	30	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Caving potential	1.00 1.00 1.00

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
256: Whitecabin silt loam, occasionally flooded-----	85	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Caving potential	1.00 1.00 1.00
257: Llanoseco, frequently flooded----	90	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Caving potential Frequent or occasional flooding	1.00 1.00 0.50
258: Codora, occasionally flooded-----	85	Limitations AASHTO GI >8 (low soil strength) Ponding (any duration) Frequent or occasional flooding	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation from 2.5' to 6' depth Frequent or occasional flooding	1.00 0.92 0.50
260: Ordferry silty clay, occasionally flooded-----	90	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Caving potential	1.00 1.00 1.00
280: Columbia taxadjunct stratified very fine sandy loam-----	80	Limitations Saturation < 12" depth Frequent or occasional flooding	1.00 1.00	Limitations Saturation < 2.5' depth Frequent or occasional flooding Caving potential	1.00 0.50 0.10
290: Perkins gravelly loam-----	90	No limitations		Limitations Caving potential Saturation from 2.5' to 6' depth	1.00 0.05
300: Redsluff gravelly loam-----	80	Limitations Rare flooding Shrink-swell (LEP 3-6)	0.50 0.01	Limitations Caving potential Saturation from 2.5' to 6' depth	1.00 0.97

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
301:					
Wafap gravelly loam-----	70	Limitations Shrink-swell (LEP >6) AASHTO GI >8 (low soil strength) Fragments (>3") >50%	1.00 1.00 1.00	Limitations Saturation < 2.5' depth Caving potential Fragments (>3") >50%	1.00 1.00 1.00
Hamslough clay-----	15	Limitations Ponding (any duration) Saturation < 12" depth Frequent or occasional flooding	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Caving potential	1.00 1.00 1.00
302:					
Redtough loam-----	50	Limitations Saturation < 12" depth AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6)	1.00 1.00 0.01	Limitations Saturation < 2.5' depth Caving potential	1.00 0.10
Redswale cobbly loam-----	35	Limitations Ponding (any duration) Saturation < 12" depth AASHTO GI 5-8 (soil strength)	1.00 1.00 0.78	Limitations Ponding (any duration) Saturation < 2.5' depth Fragments (>3") 25 to 50%	1.00 1.00 0.50
303:					
Munjar gravelly loam-----	60	Limitations Shrink-swell (LEP >6) Saturation from 12 to 30" depth Fragments (>3") 25 to 50%	1.00 0.56 0.01	Limitations Saturation < 2.5' depth Caving potential Fragments (>3") 25 to 50%	1.00 1.00 0.01
Tuscan taxadjunct gravelly clay loam-----	20	Limitations Saturation < 12" depth Shrink-swell (LEP >6) AASHTO GI >8 (low soil strength)	1.00 1.00 1.00	Limitations Saturation < 2.5' depth Caving potential	1.00 1.00
Galt clay-----	10	Limitations Shrink-swell (LEP >6) Ponding (any duration) Saturation < 12" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Caving potential	1.00 1.00 1.00

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
304:					
Redtough loam-----	80	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6)	1.00 1.00 0.01	Limitations Slopes > 15% Caving potential	1.00 0.10
305:					
Redtough gravelly loam-----	45	Limitations Saturation < 12" depth AASHTO GI >8 (low soil strength)	1.00 1.00	Limitations Saturation < 2.5' depth Caving potential	1.00 0.10
Redswale loam-----	25	Limitations Ponding (any duration) Saturation < 12" depth	1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Caving potential	1.00 1.00 0.10
Anita, gravelly duripan-----	20	Limitations AASHTO GI >8 (low soil strength) Thin pan <= 20" Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Pan (thin) < 20" depth Ponding (any duration) Saturation < 2.5' depth	1.00 1.00 1.00
306:					
Duric Xerarents, fill-----	50	Limitations Ponding (any duration) Saturation < 12" depth	1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Clay from 40 to 60%	1.00 1.00 0.50
Duric Xerarents, cut-----	40	Limitations Ponding (any duration) Saturation < 12" depth	1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Caving potential	1.00 1.00 0.10
307:					
Duric Xerarents clay loam, leveled-----	70	Limitations Ponding (any duration) Saturation < 12" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Caving potential	1.00 1.00 0.10
310:					
Kimball loam-----	85	Limitations AASHTO GI >8 (low soil strength)	1.00	Limitations Clay from 40 to 60% Caving potential	0.24 0.10

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
317: Thompsonflat loam-----	75	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6)	1.00 0.06	Limitations Caving potential Saturation from 2.5' to 6' depth Clay from 40 to 60%	1.00 0.16 0.12
318: Thompsonflat fine sandy loam-----	50	No limitations		Limitations Caving potential Saturation from 2.5' to 6' depth Clay from 40 to 60%	1.00 0.16 0.04
Oroville gravelly fine sandy loam	40	Limitations Ponding (any duration) Shrink-swell (LEP >6) Saturation < 12" depth	1.00 1.00 0.99	Limitations Ponding (any duration) Saturation < 2.5' depth Caving potential	1.00 1.00 1.00
320: Vistarobles sandy loam-----	50	Limitations Thin pan <= 20" Shrink-swell (LEP >6) Ponding (any duration)	1.00 1.00 1.00	Limitations Pan (thin) < 20" depth Ponding (any duration) Saturation < 2.5' depth	1.00 1.00 1.00
Redding loam-----	40	Limitations AASHTO GI 5-8 (soil strength) Saturation from 12 to 30" depth	0.22 0.19	Limitations Saturation < 2.5' depth Clay from 40 to 60% Caving potential	1.00 0.50 0.10
321: Durixeralfs, fine-loamy, gravelly fine sandy loam-----	50	Limitations Saturation from 12 to 30" depth	0.56	Limitations Saturation < 2.5' depth Caving potential Pan (thin) from 20-40"	1.00 1.00 0.71
Durixeralfs, loamy-skeletal, gravelly fine sandy loam-----	20	Limitations Thin pan <= 20" Ponding (any duration) Saturation < 12" depth	1.00 1.00 1.00	Limitations Pan (thin) < 20" depth Ponding (any duration) Saturation < 2.5' depth	1.00 1.00 1.00

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
321: Typic Petraquepts silty clay-----	15	Limitations Thin pan <= 20" Shrink-swell (LEP >6) Ponding (any duration)	1.00 1.00 1.00	Limitations Pan (thin) < 20" depth Ponding (any duration) Saturation < 2.5' depth	1.00 1.00 1.00
330: Wilsoncreek loam, occasionally flooded-----	60	Limitations Frequent or occasional flooding	1.00	Limitations Saturation from 2.5' to 6' depth Frequent or occasional flooding Caving potential	0.53 0.50 0.10
Trainer loam, occasionally flooded-----	25	Limitations Frequent or occasional flooding AASHTO GI >8 (low soil strength)	1.00 1.00	Limitations Saturation from 2.5' to 6' depth Frequent or occasional flooding Caving potential	0.95 0.50 0.10
331: Thompsonflat loam-----	85	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6)	1.00 1.00 0.06	Limitations Slopes > 15% Caving potential Saturation from 2.5' to 6' depth	1.00 1.00 0.16
335: Galt clay loam-----	85	Limitations AASHTO GI >8 (low soil strength) Ponding (any duration) Saturation < 12" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Caving potential	1.00 1.00 1.00
336: Galt clay-----	90	Limitations Shrink-swell (LEP >6) Ponding (any duration) Saturation < 12" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Caving potential	1.00 1.00 1.00
337: Galt clay loam-----	85	Limitations AASHTO GI >8 (low soil strength) Ponding (any duration) Saturation < 12" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Caving potential	1.00 1.00 1.00

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
338: Oxyaquic Xerofluvents silt loam---	90	Limitations Ponding (any duration) Rare flooding	1.00 0.50	Limitations Ponding (any duration) Caving potential Saturation from 2.5' to 6' depth	1.00 1.00 0.87
339: Oxyaquic Xerofluvents sandy loam, frequently flooded-----	90	Limitations Ponding (any duration) Frequent or occasional flooding	1.00 1.00	Limitations Ponding (any duration) Caving potential Saturation from 2.5' to 6' depth	1.00 1.00 0.87
340: Rock outcrop, Lovejoy basalt-----	35	Not rated		Not rated	
Thermalrocks very gravelly loam---	25	Limitations Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 0.01	Limitations Bedrock (hard) < 40" depth Caving potential Fragments (>3") 25 to 50%	1.00 0.10 0.01
Campbellhills gravelly loam-----	20	Limitations Saturation < 12" depth Shrink-swell (LEP 3-6)	1.00 0.82	Limitations Saturation < 2.5' depth Caving potential Bedrock (hard) from 40 to 60"	1.00 1.00 0.42
341: Elseys loam-----	25	Limitations AASHTO GI >8 (low soil strength) Saturation from 12 to 30" depth Fragments (>3") 25 to 50%	1.00 0.90 0.10	Limitations Bedrock (hard) < 40" depth Saturation < 2.5' depth Caving potential	1.00 1.00 0.10
Beatsonhollow gravelly loam-----	25	Limitations Bedrock (hard) < 20" depth Ponding (any duration) Saturation < 12" depth	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Ponding (any duration) Saturation < 2.5' depth	1.00 1.00 1.00
Campbellhills gravelly loam-----	20	Limitations Saturation < 12" depth Shrink-swell (LEP 3-6)	1.00 0.82	Limitations Saturation < 2.5' depth Caving potential Bedrock (hard) from 40 to 60"	1.00 1.00 0.42
Rock outcrop, Lovejoy basalt-----	20	Not rated		Not rated	

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
342: Thermalrocks very gravelly loam---	40	Limitations Bedrock (hard) < 20" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 0.10
Beatsonhollow taxadjunct fine sandy loam-----	35	Limitations Bedrock (hard) < 20" depth Saturation < 12" depth	1.00 1.00	Limitations Bedrock (hard) < 40" depth Saturation < 2.5' depth Caving potential	1.00 1.00 0.10
Rock outcrop, Lovejoy basalt-----	15	Not rated		Not rated	
343: Coalcanyon very cobbly loam-----	50	Limitations Fragments (>3") >50% Slopes 8 to 15%	0.99 0.16	Limitations Fragments (>3") >50% Slopes 8 to 15% Caving potential	0.99 0.16 0.10
Coonhollow gravelly loam-----	35	Limitations Fragments (>3") >50% Slopes 8 to 15%	1.00 0.16	Limitations Fragments (>3") >50% Slopes 8 to 15% Caving potential	1.00 0.16 0.10
344: Coalcanyon very cobbly loam-----	45	Limitations Slopes > 15% Fragments (>3") >50%	1.00 0.99	Limitations Slopes > 15% Fragments (>3") >50% Caving potential	1.00 0.99 0.10
Coonhollow gravelly loam-----	30	Limitations Slopes > 15% Fragments (>3") >50%	1.00 1.00	Limitations Slopes > 15% Fragments (>3") >50% Caving potential	1.00 1.00 0.10
Rock outcrop, Lovejoy basalt-----	15	Not rated		Not rated	
346: Cherotable loam-----	50	Limitations Shrink-swell (LEP >6) AASHTO GI >8 (low soil strength)	1.00 1.00	Limitations Caving potential Bedrock (hard) from 40 to 60" Saturation from 2.5' to 6' depth	1.00 0.84 0.83

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
346: Elsely loam-----	35	Limitations AASHTO GI >8 (low soil strength) Saturation from 12 to 30" depth Fragments (>3") 25 to 50%	1.00 0.90 0.10	Limitations Bedrock (hard) < 40" depth Saturation < 2.5' depth Caving potential	1.00 1.00 0.10
347: Haplic Palexeralfs loam-----	90	Limitations Frequent or occasional flooding Shrink-swell (LEP 3-6)	1.00 0.32	Limitations Caving potential Frequent or occasional flooding Clay from 40 to 60%	1.00 0.50 0.02
353: Cherokeespring gravelly silt loam	80	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6) Slopes 8 to 15%	1.00 0.68 0.63	Limitations Caving potential Slopes 8 to 15% Clay from 40 to 60%	1.00 0.63 0.02
355: Coalcanyon very cobbly loam-----	55	Limitations Slopes > 15% Fragments (>3") >50%	1.00 0.99	Limitations Slopes > 15% Fragments (>3") >50% Caving potential	1.00 0.99 0.10
Talus-----	35	Not rated		Not rated	
356: Coalcanyon very cobbly loam-----	45	Limitations Slopes > 15% Fragments (>3") >50%	1.00 0.99	Limitations Slopes > 15% Fragments (>3") >50% Caving potential	1.00 0.99 0.10
Rock outcrop, basalt cliffs-----	20	Not rated		Not rated	
Talus-----	20	Not rated		Not rated	
Coonhollow gravelly loam-----	10	Limitations Slopes > 15% Fragments (>3") >50%	1.00 1.00	Limitations Slopes > 15% Fragments (>3") >50% Caving potential	1.00 1.00 0.10

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets	Shallow excavations		
		Limitations	Value	Limitations	Value
360: Typic Xerofluvents, coarse-loamy--	45	Limitations Rare flooding	0.50	Limitations Caving potential Saturation from 2.5' to 6' depth	1.00 0.87
Typic Xerofluvents, sandy-skeletal	40	Limitations Rare flooding	0.50	Limitations Caving potential Saturation from 2.5' to 6' depth	1.00 0.87
361: Typic Xerofluvents, sandy-skeletal	85	Limitations Rare flooding	0.50	Limitations Caving potential Saturation from 2.5' to 6' depth	1.00 0.87
362: Ultic Haploxeralfs, sandstone, low elevation, very deep-----	60	Limitations Shrink-swell (LEP 3-6) AASHTO GI 5-8 (soil strength)	0.22 0.22	Limitations Caving potential	0.10
Ultic Haploxeralfs, sandstone, low elevation, deep-----	25	No limitations		Limitations Caving potential	0.10
363: Ultic Haploxeralfs, sandstone, low elevation, very deep-----	60	Limitations Shrink-swell (LEP 3-6) AASHTO GI 5-8 (soil strength)	0.22 0.22	Limitations Caving potential	0.10
Ultic Haploxeralfs, sandstone, low elevation, deep-----	30	Limitations Slopes 8 to 15%	0.63	Limitations Slopes 8 to 15% Caving potential	0.63 0.10
364: Ultic Haploxeralfs, sandstone, low elevation, deep-----	50	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 0.10

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
364: Ultic Haploxeralfs, sandstone, low elevation, very deep-----	40	Limitations Slopes > 15% Shrink-swell (LEP 3-6) AASHTO GI 5-8 (soil strength)	1.00 0.22 0.22	Limitations Slopes > 15% Caving potential	1.00 0.10
365: Palexerults gravelly loam-----	80	Limitations Slopes > 15% Shrink-swell (LEP >6) AASHTO GI >8 (low soil strength)	1.00 1.00 1.00	Limitations Slopes > 15% Clay from 40 to 60% Caving potential	1.00 0.88 0.10
366: Palexerults gravelly loam-----	80	Limitations Slopes > 15% Shrink-swell (LEP >6) AASHTO GI >8 (low soil strength)	1.00 1.00 1.00	Limitations Slopes > 15% Clay from 40 to 60% Caving potential	1.00 0.88 0.10
370: Palexerults gravelly loam-----	80	Limitations Shrink-swell (LEP >6) AASHTO GI >8 (low soil strength)	1.00 1.00	Limitations Clay from 40 to 60% Caving potential	0.88 0.10
375: Wickscorner loam-----	80	Limitations Shrink-swell (LEP >6)	1.00	Limitations Caving potential Clay from 40 to 60% Saturation from 2.5' to 6' depth	1.00 0.32 0.16
376: Flagcanyon gravelly loam-----	50	Limitations Shrink-swell (LEP 3-6) Saturation from 12 to 30" depth	0.32 0.14	Limitations Saturation < 2.5' depth Caving potential Pan (thin) from 20-40"	1.00 1.00 0.46
Wickscorner loam-----	35	Limitations Shrink-swell (LEP >6)	1.00	Limitations Caving potential Clay from 40 to 60% Saturation from 2.5' to 6' depth	1.00 0.32 0.16

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
377: Flagcanyon taxadjunct fine sandy loam-----	55	Limitations Ponding (any duration) Shrink-swell (LEP >6) Saturation from 12 to 30" depth	1.00 1.00 0.88	Limitations Pan (thick) < 40" depth Ponding (any duration) Saturation < 2.5' depth	1.00 1.00 1.00
Durixeralfs, clayey-skeletal, loam	20	Limitations Shrink-swell (LEP >6) Ponding (any duration) Saturation < 12" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Caving potential	1.00 1.00 1.00
Duraquerts gravelly clay-----	15	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Ponding (any duration)	1.00 1.00 1.00	Limitations Pan (thick) < 40" depth Ponding (any duration) Saturation < 2.5' depth	1.00 1.00 1.00
400: Subaco taxadjunct clay-----	85	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Caving potential	1.00 1.00 1.00
415: Ignord fine sandy loam-----	90	Limitations Rare flooding	0.50	Limitations Caving potential	0.10
416: Calcic Haploxerolls sandy loam---	90	Limitations Rare flooding	0.50	Limitations Saturation < 2.5' depth Caving potential	0.99 0.10
418: Almendra loam-----	85	Limitations Shrink-swell (LEP 3-6)	0.01	Limitations Caving potential	0.10
419: Conejo fine sandy loam, overwash--	85	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6)	1.00 0.78	Limitations Caving potential	0.10

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
420: Conejo clay loam-----	85	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Caving potential	0.10
425: Vina fine sandy loam-----	85	Limitations Rare flooding	0.50	Limitations Caving potential	1.00
426: Vina loam-----	85	No limitations		Limitations Caving potential	0.10
439: Oxyaquic Xerofluvents clay-----	85	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Ponding (any duration)	1.00 1.00 1.00	Limitations Clay > 60% Ponding (any duration) Saturation < 2.5' depth	1.00 1.00 1.00
440: Oxyaquic Xerofluvents silt loam, frequently flooded-----	80	Limitations Ponding (any duration) Frequent or occasional flooding	1.00 1.00	Limitations Ponding (any duration) Caving potential Saturation < 2.5' depth	1.00 1.00 0.99
441: Oxyaquic Xerofluvents very fine sandy loam-----	90	Limitations Ponding (any duration) AASHTO GI >8 (low soil strength) Rare flooding	1.00 1.00 0.50	Limitations Ponding (any duration) Caving potential Saturation < 2.5' depth	1.00 1.00 0.99
442: Durixerolls clay loam-----	55	Limitations Ponding (any duration) AASHTO GI >8 (low soil strength) Saturation from 12 to 30" depth	1.00 1.00 0.94	Limitations Ponding (any duration) Saturation < 2.5' depth Caving potential	1.00 1.00 0.10
Haploxerolls clay loam-----	30	Limitations AASHTO GI >8 (low soil strength) Rare flooding Shrink-swell (LEP 3-6)	1.00 0.50 0.01	Limitations Saturation < 2.5' depth Caving potential	0.99 0.10

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
443: Durixerolls loam-----	60	Limitations AASHTO GI >8 (low soil strength) Saturation from 12 to 30" depth Rare flooding	1.00 0.94 0.50	Limitations Saturation < 2.5' depth Caving potential	1.00 0.10
Haploxerolls loam-----	25	Limitations AASHTO GI >8 (low soil strength) Rare flooding	1.00 0.50	Limitations Saturation < 2.5' depth Caving potential	0.99 0.10
445: Chico loam-----	85	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6)	1.00 0.18	Limitations Caving potential	0.10
447: Charger fine sandy loam-----	80	Limitations Rare flooding	0.50	Limitations Caving potential Saturation from 2.5' to 6' depth	1.00 0.87
448: Haploxerolls clay loam-----	75	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6) Rare flooding	1.00 0.82 0.50	Limitations Saturation from 2.5' to 6' depth Caving potential	0.16 0.10
449: Haploxerolls loam-----	75	Limitations AASHTO GI >8 (low soil strength) Rare flooding	1.00 0.50	Limitations Saturation from 2.5' to 6' depth Caving potential	0.16 0.10
500: Lofgren clay-----	45	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Ponding (any duration)	1.00 1.00 1.00	Limitations Clay > 60% Ponding (any duration) Saturation < 2.5' depth	1.00 1.00 1.00
Blavo clay-----	40	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Ponding (any duration)	1.00 1.00 1.00	Limitations Clay > 60% Ponding (any duration) Saturation < 2.5' depth	1.00 1.00 1.00

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
501: Lofgren clay, occasionally flooded-----	45	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Ponding (any duration)	1.00 1.00 1.00	Limitations Clay > 60% Ponding (any duration) Saturation < 2.5' depth	1.00 1.00 1.00
Blavo clay, occasionally flooded--	40	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Ponding (any duration)	1.00 1.00 1.00	Limitations Clay > 60% Ponding (any duration) Saturation < 2.5' depth	1.00 1.00 1.00
502: Blavo silt loam, overwash, occasionally flooded-----	80	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Ponding (any duration)	1.00 1.00 1.00	Limitations Clay > 60% Ponding (any duration) Saturation < 2.5' depth	1.00 1.00 1.00
519: Edjobe silty clay-----	85	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Caving potential Saturation < 2.5' depth	1.00 1.00 0.99
520: Esquon clay-----	60	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Caving potential Saturation < 2.5' depth	1.00 1.00 0.99
Neerdobe clay-----	30	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Caving potential	1.00 1.00 1.00
521: Neerdobe silt loam, overwash-----	85	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Caving potential Saturation < 2.5' depth	1.00 1.00 0.99

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
522: Clear Lake silty clay loam, overwash-----	80	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Caving potential	1.00 1.00 1.00
523: Esquon silty clay loam, overwash--	80	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Caving potential	1.00 1.00 1.00
525: Govstanford loam-----	85	Limitations Saturation from 12 to 30" depth	0.12	Limitations Saturation < 2.5' depth Clay from 40 to 60% Caving potential	1.00 0.92 0.50
526: Govstanford loam, occasionally flooded-----	85	Limitations Frequent or occasional flooding Saturation from 12 to 30" depth	1.00 0.12	Limitations Saturation < 2.5' depth Clay from 40 to 60% Frequent or occasional flooding	1.00 0.92 0.50
528: Neerdobe clay loam-----	90	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Caving potential	1.00 1.00 1.00
550: Dunstone loam, dry-----	60	Limitations Bedrock (soft) < 20" depth AASHTO GI >8 (low soil strength)	1.00 1.00	Limitations Bedrock (soft) < 20" depth Caving potential	1.00 0.10
Loafercreek silt loam, dry-----	20	Limitations AASHTO GI 5-8 (soil strength) Slopes 8 to 15%	0.78 0.01	Limitations Bedrock (soft) from 20 to 40" Caving potential Slopes 8 to 15%	0.54 0.10 0.01

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
551:					
Dunstone loam, dry-----	35	Limitations Slopes > 15% Bedrock (soft) < 20" depth AASHTO GI >8 (low soil strength)	1.00 1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential	1.00 1.00 0.10
Lomarca loam-----	15	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 15% Caving potential Clay from 40 to 60%	1.00 1.00 0.68
Argonaut taxadjunct loam-----	15	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Slopes > 15%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock (soft) from 20 to 40" Clay from 40 to 60%	1.00 0.46 0.12
552:					
Dunstone gravelly loam-----	45	Limitations Bedrock (soft) < 20" depth Bedrock (hard) from 20 to 40" Slopes 8 to 15%	1.00 0.03 0.01	Limitations Bedrock (hard) < 40" depth Bedrock (soft) < 20" depth Caving potential	1.00 1.00 0.10
Loafercreek gravelly loam-----	40	Limitations Slopes 8 to 15%	0.01	Limitations Caving potential Bedrock (hard) from 40 to 60" Bedrock (soft) from 20 to 40"	1.00 0.96 0.35
553:					
Dunstone gravelly loam-----	45	Limitations Slopes > 15% Bedrock (soft) < 20" depth Bedrock (hard) from 20 to 40"	1.00 1.00 0.03	Limitations Bedrock (hard) < 40" depth Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00 1.00
Loafercreek gravelly loam-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential Bedrock (hard) from 40 to 60"	1.00 1.00 0.96
554:					
Dunstone gravelly loam-----	45	Limitations Slopes > 15% Bedrock (soft) < 20" depth Bedrock (hard) from 20 to 40"	1.00 1.00 0.03	Limitations Bedrock (hard) < 40" depth Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00 1.00

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
554: Loafercreek gravelly loam-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential Bedrock (hard) from 40 to 60"	1.00 1.00 0.96
555: Dunstone gravelly loam-----	45	Limitations Slopes > 15% Bedrock (soft) < 20" depth Bedrock (hard) from 20 to 40"	1.00 1.00 0.03	Limitations Bedrock (hard) < 40" depth Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00 1.00
Loafercreek gravelly loam-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential Bedrock (hard) from 40 to 60"	1.00 1.00 0.96
556: Mounthope loam-----	50	Limitations Shrink-swell (LEP 3-6) Slopes 8 to 15%	0.06 0.01	Limitations Caving potential Slopes 8 to 15%	1.00 0.01
Hartsmill gravelly loam-----	40	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.78 0.02	Limitations Caving potential Fragments (>3") 25 to 50% Slopes 8 to 15%	1.00 0.02 0.01
557: Mounthope loam-----	50	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.06	Limitations Slopes > 15% Caving potential	1.00 1.00
Hartsmill gravelly loam-----	40	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6)	1.00 1.00 0.78	Limitations Slopes > 15% Caving potential Fragments (>3") 25 to 50%	1.00 1.00 0.02
558: Hartsmill gravelly loam-----	55	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6)	1.00 1.00 0.78	Limitations Slopes > 15% Caving potential Fragments (>3") 25 to 50%	1.00 1.00 0.02

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
558: Mounthope loam-----	30	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.06	Limitations Slopes > 15% Caving potential	1.00 1.00
559: Hartsmill gravelly loam-----	55	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6)	1.00 1.00 0.78	Limitations Slopes > 15% Caving potential Fragments (>3") 25 to 50%	1.00 1.00 0.02
Mounthope loam-----	30	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.06	Limitations Slopes > 15% Caving potential	1.00 1.00
560: Hartsmill gravelly loam-----	50	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6)	1.00 1.00 0.78	Limitations Slopes > 15% Caving potential Fragments (>3") 25 to 50%	1.00 1.00 0.02
Mounthope loam-----	30	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.06	Limitations Slopes > 15% Caving potential	1.00 1.00
561: Bigridge loam-----	50	Limitations Slopes 8 to 15%	0.01	Limitations Caving potential Slopes 8 to 15%	1.00 0.01
Minniecreek loam-----	35	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6) Slopes 8 to 15%	1.00 0.50 0.01	Limitations Bedrock (soft) from 20 to 40" Caving potential Slopes 8 to 15%	0.29 0.10 0.01
562: Bigridge loam-----	50	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
562: Minniecreek loam-----	35	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock (soft) from 20 to 40" Caving potential	1.00 0.29 0.10
563: Bigridge loam-----	50	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
Minniecreek loam-----	35	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock (soft) from 20 to 40" Caving potential	1.00 0.29 0.10
564: Bigridge loam-----	50	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
Minniecreek loam-----	35	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock (soft) from 20 to 40" Caving potential	1.00 0.29 0.10
565: Dunstone loam, dry-----	35	Limitations Bedrock (soft) < 20" depth AASHTO GI >8 (low soil strength)	1.00 1.00	Limitations Bedrock (soft) < 20" depth Caving potential	1.00 0.10
Argonaut taxadjunct loam-----	30	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Slopes 8 to 15%	1.00 1.00 0.01	Limitations Bedrock (soft) from 20 to 40" Clay from 40 to 60% Caving potential	0.46 0.12 0.10
Sunnyslope loam-----	20	Limitations Bedrock (soft) < 20" depth	1.00	Limitations Bedrock (soft) < 20" depth Caving potential	1.00 0.10

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
566:					
Dunstone loam, dry-----	45	Limitations		Limitations	
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
		AASHTO GI >8 (low soil strength)	1.00	Caving potential	0.10
Loafercreek silt loam, dry-----	20	Limitations		Limitations	
		AASHTO GI 5-8 (soil strength)	0.78	Bedrock (soft) from 20 to 40"	0.54
		Slopes 8 to 15%	0.01	Caving potential	0.10
				Slopes 8 to 15%	0.01
Katskillhill loam-----	15	Limitations		Limitations	
		AASHTO GI >8 (low soil strength)	1.00	Bedrock (hard) from 40 to 60"	0.96
		Shrink-swell (LEP >6)	1.00	Clay from 40 to 60%	0.68
		Slopes 8 to 15%	0.01	Caving potential	0.10
567:					
Dunstone loam, dry-----	40	Limitations		Limitations	
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
		AASHTO GI >8 (low soil strength)	1.00	Caving potential	0.10
Loafercreek silt loam, dry-----	25	Limitations		Limitations	
		AASHTO GI 5-8 (soil strength)	0.78	Bedrock (soft) from 20 to 40"	0.54
		Slopes 8 to 15%	0.01	Caving potential	0.10
				Slopes 8 to 15%	0.01
Argonaut taxadjunct loam-----	20	Limitations		Limitations	
		AASHTO GI >8 (low soil strength)	1.00	Bedrock (soft) from 20 to 40"	0.46
		Shrink-swell (LEP >6)	1.00	Clay from 40 to 60%	0.12
		Slopes 8 to 15%	0.01	Caving potential	0.10
577:					
Parkshill coarse sandy loam-----	40	Limitations		Limitations	
		Slopes 8 to 15%	0.01	Caving potential	0.10
				Slopes 8 to 15%	0.01
Flanly loam-----	25	Limitations		Limitations	
		Slopes 8 to 15%	0.01	Bedrock (soft) from 20 to 40"	0.95
				Caving potential	0.10
				Slopes 8 to 15%	0.01

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
577: Hurleton gravelly sandy loam-----	20	Limitations Bedrock (hard) from 20 to 40" Slopes 8 to 15%	0.84 0.04	Limitations Bedrock (hard) < 40" depth Caving potential Slopes 8 to 15%	1.00 1.00 0.04
578: Flanly loam-----	45	Limitations Slopes 8 to 15%	0.01	Limitations Bedrock (soft) from 20 to 40" Caving potential Slopes 8 to 15%	0.95 0.10 0.01
Swedesflat cobbly fine sandy loam	35	Limitations Bedrock (soft) < 20" depth Slopes 8 to 15%	1.00 0.16	Limitations Bedrock (soft) < 20" depth Slopes 8 to 15% Caving potential	1.00 0.16 0.10
580: Surnuf taxadjunct loam-----	40	Limitations Shrink-swell (LEP >6) AASHTO GI >8 (low soil strength) Slopes 8 to 15%	1.00 1.00 0.01	Limitations Clay from 40 to 60% Caving potential Slopes 8 to 15%	0.88 0.10 0.01
Griffgulch very gravelly silt loam	25	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 0.99 0.94	Limitations Caving potential Fragments (>3") 25 to 50% Clay from 40 to 60%	1.00 0.94 0.18
Rock outcrop, metavolcanic-----	20	Not rated		Not rated	
581: Surnuf taxadjunct loam-----	65	Limitations Slopes > 15% Shrink-swell (LEP >6) AASHTO GI >8 (low soil strength)	1.00 1.00 1.00	Limitations Slopes > 15% Clay from 40 to 60% Caving potential	1.00 0.88 0.10
Griffgulch very gravelly silt loam	20	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)	1.00 1.00 0.99	Limitations Slopes > 15% Caving potential Fragments (>3") 25 to 50%	1.00 1.00 0.94

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
582: Surnuf taxadjunct loam-----	50	Limitations Slopes > 15% Shrink-swell (LEP >6) AASHTO GI >8 (low soil strength)	1.00 1.00 1.00	Limitations Slopes > 15% Clay from 40 to 60% Caving potential	1.00 0.88 0.10
Griffgulch very gravelly silt loam	35	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)	1.00 1.00 0.99	Limitations Slopes > 15% Caving potential Fragments (>3") 25 to 50%	1.00 1.00 0.94
583: Surnuf taxadjunct loam-----	50	Limitations Slopes > 15% Shrink-swell (LEP >6) AASHTO GI >8 (low soil strength)	1.00 1.00 1.00	Limitations Slopes > 15% Clay from 40 to 60% Caving potential	1.00 0.88 0.10
Griffgulch very gravelly silt loam	35	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)	1.00 1.00 0.99	Limitations Slopes > 15% Caving potential Fragments (>3") 25 to 50%	1.00 1.00 0.94
584: Flanly loam-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Bedrock (soft) from 20 to 40" Caving potential	1.00 0.95 0.10
Swedesflat cobbly fine sandy loam	30	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential	1.00 1.00 0.10
Rackerby very gravelly sandy loam	25	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential	1.00 1.00 0.10
585: Flanly loam-----	45	Limitations Slopes 8 to 15%	0.01	Limitations Bedrock (soft) from 20 to 40" Caving potential Slopes 8 to 15%	0.95 0.10 0.01

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
585: Sommeyflat loam-----	35	Limitations AASHTO GI >8 (low soil strength)	1.00	Limitations Caving potential	0.10
586: Sommeyflat loam-----	45	Limitations Slopes > 15% AASHTO GI >8 (low soil strength)	1.00 1.00	Limitations Slopes > 15% Caving potential	1.00 0.10
Mounthope loam-----	40	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.06	Limitations Slopes > 15% Caving potential	1.00 1.00
587: Sommeyflat loam-----	35	Limitations Slopes > 15% AASHTO GI >8 (low soil strength)	1.00 1.00	Limitations Slopes > 15% Caving potential	1.00 0.10
Mounthope loam-----	30	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.06	Limitations Slopes > 15% Caving potential	1.00 1.00
Hurleton gravelly sandy loam-----	25	Limitations Slopes > 15% Bedrock (hard) from 20 to 40"	1.00 0.84	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 1.00
588: Ultic Haploxeralfs, thermic, high terrace-----	95	Limitations Saturation from 12 to 30" depth	0.56	Limitations Saturation < 2.5' depth Caving potential	1.00 1.00
589: Ultic Haploxeralfs, thermic, high terrace-----	95	Limitations Slopes > 15% Saturation from 12 to 30" depth	1.00 0.56	Limitations Slopes > 15% Saturation < 2.5' depth Caving potential	1.00 1.00 1.00

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
590:					
Vistarobles sandy loam-----	30	Limitations Shrink-swell (LEP >6) Ponding (any duration) Saturation < 12" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Caving potential	1.00 1.00 0.10
Redding loam-----	25	Limitations AASHTO GI 5-8 (soil strength) Saturation from 12 to 30" depth	0.22 0.19	Limitations Saturation < 2.5' depth Clay from 40 to 60% Caving potential	1.00 0.50 0.10
Argonaut taxadjunct loam-----	20	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)	1.00 1.00	Limitations Bedrock (soft) from 20 to 40" Clay from 40 to 60% Caving potential	0.46 0.12 0.10
Haploxererts gravelly silty clay--	15	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Caving potential	1.00 1.00 1.00
603:					
Oroville gravelly fine sandy loam	30	Limitations Ponding (any duration) Shrink-swell (LEP >6) Saturation < 12" depth	1.00 1.00 0.99	Limitations Ponding (any duration) Saturation < 2.5' depth Caving potential	1.00 1.00 1.00
Thermalito sandy loam-----	25	Limitations Saturation from 12 to 30" depth Shrink-swell (LEP 3-6)	0.96 0.06	Limitations Saturation < 2.5' depth Caving potential Clay from 40 to 60%	1.00 1.00 0.50
Fernandez sandy loam-----	15	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)	1.00 1.00	Limitations Caving potential Saturation from 2.5' to 6' depth Clay from 40 to 60%	1.00 0.87 0.12
Thompsonflat fine sandy loam-----	15	No limitations		Limitations Caving potential Saturation from 2.5' to 6' depth Clay from 40 to 60%	1.00 0.16 0.04

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
605:					
Duric Xerarents fine sandy loam, leveled-----	75	Limitations Thin pan <= 20" Ponding (any duration) Saturation < 12" depth	1.00 1.00 1.00	Limitations Pan (thin) < 20" depth Ponding (any duration) Saturation < 2.5' depth	1.00 1.00 1.00
Oroville gravelly fine sandy loam	20	Limitations Ponding (any duration) Shrink-swell (LEP >6) Saturation < 12" depth	1.00 1.00 0.99	Limitations Ponding (any duration) Saturation < 2.5' depth Caving potential	1.00 1.00 1.00
606:					
Redtough loam-----	45	Limitations Saturation < 12" depth AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6)	1.00 1.00 0.01	Limitations Saturation < 2.5' depth Caving potential	1.00 0.10
Fallager loam-----	30	Limitations Shrink-swell (LEP >6) Ponding (any duration) Saturation < 12" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Caving potential	1.00 1.00 0.10
Anita, gravelly duripan-----	15	Limitations AASHTO GI >8 (low soil strength) Thin pan <= 20" Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Pan (thin) < 20" depth Ponding (any duration) Saturation < 2.5' depth	1.00 1.00 1.00
609:					
Anita, gravelly duripan-----	50	Limitations AASHTO GI >8 (low soil strength) Thin pan <= 20" Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Pan (thin) < 20" depth Ponding (any duration) Saturation < 2.5' depth	1.00 1.00 1.00
Tuscan taxadjunct gravelly clay loam-----	40	Limitations Saturation < 12" depth Shrink-swell (LEP >6) AASHTO GI >8 (low soil strength)	1.00 1.00 1.00	Limitations Saturation < 2.5' depth Caving potential	1.00 1.00

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
614: Doemill gravelly loam-----	50	Limitations Bedrock (hard) < 20" depth Saturation < 12" depth	1.00 1.00	Limitations Bedrock (hard) < 40" depth Saturation < 2.5' depth Caving potential	1.00 1.00 0.10
Jokerst very cobbly loam-----	40	Limitations Bedrock (hard) < 20" depth Ponding (any duration) Saturation < 12" depth	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Ponding (any duration) Saturation < 2.5' depth	1.00 1.00 1.00
615: Doemill gravelly loam-----	50	Limitations Bedrock (hard) < 20" depth Saturation < 12" depth	1.00 1.00	Limitations Bedrock (hard) < 40" depth Saturation < 2.5' depth Caving potential	1.00 1.00 0.10
Jokerst very cobbly loam-----	40	Limitations Bedrock (hard) < 20" depth Ponding (any duration) Saturation < 12" depth	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Ponding (any duration) Saturation < 2.5' depth	1.00 1.00 1.00
616: Jokerst very cobbly loam-----	35	Limitations Bedrock (hard) < 20" depth Saturation < 12" depth Slopes 8 to 15%	1.00 1.00 0.16	Limitations Bedrock (hard) < 40" depth Saturation < 2.5' depth Slopes 8 to 15%	1.00 1.00 0.16
Doemill gravelly loam-----	35	Limitations Bedrock (hard) < 20" depth Saturation < 12" depth Slopes 8 to 15%	1.00 0.99 0.16	Limitations Bedrock (hard) < 40" depth Saturation < 2.5' depth Slopes 8 to 15%	1.00 1.00 0.16
Typic Haploxeralfs gravelly loam--	15	Limitations Slopes 8 to 15% Shrink-swell (LEP 3-6)	0.84 0.78	Limitations Caving potential Slopes 8 to 15%	1.00 0.84
617: Doemill gravelly loam-----	35	Limitations Bedrock (hard) < 20" depth Slopes > 15% Saturation from 12 to 30" depth	1.00 1.00 0.98	Limitations Bedrock (hard) < 40" depth Slopes > 15% Saturation < 2.5' depth	1.00 1.00 1.00

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
617: Jokerst very cobbly loam-----	30	Limitations Bedrock (hard) < 20" depth Saturation < 12" depth Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 15% Saturation < 2.5' depth	1.00 1.00 1.00
Typic Haploxeralfs gravelly loam--	20	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.78	Limitations Slopes > 15% Caving potential	1.00 1.00
619: Carhart taxadjunct clay-----	90	Limitations AASHTO GI >8 (low soil strength) Bedrock (hard) < 20" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Ponding (any duration) Saturation < 2.5' depth	1.00 1.00 1.00
620: Doemill gravelly loam-----	40	Limitations Bedrock (hard) < 20" depth Saturation < 12" depth	1.00 1.00	Limitations Bedrock (hard) < 40" depth Saturation < 2.5' depth Caving potential	1.00 1.00 0.10
Jokerst very cobbly loam-----	25	Limitations Bedrock (hard) < 20" depth Ponding (any duration) Saturation < 12" depth	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Ponding (any duration) Saturation < 2.5' depth	1.00 1.00 1.00
Ultic Haploxeralfs, thermic, gravelly loam-----	20	Limitations AASHTO GI >8 (low soil strength) Fragments (>3") >50% Shrink-swell (LEP 3-6)	1.00 1.00 0.78	Limitations Bedrock (hard) < 40" depth Saturation < 2.5' depth Fragments (>3") >50%	1.00 1.00 1.00
621: Doemill gravelly loam-----	30	Limitations Bedrock (hard) < 20" depth Saturation < 12" depth Slopes 8 to 15%	1.00 0.99 0.16	Limitations Bedrock (hard) < 40" depth Saturation < 2.5' depth Slopes 8 to 15%	1.00 1.00 0.16
Jokerst very cobbly loam-----	30	Limitations Bedrock (hard) < 20" depth Saturation < 12" depth Slopes 8 to 15%	1.00 1.00 0.16	Limitations Bedrock (hard) < 40" depth Saturation < 2.5' depth Slopes 8 to 15%	1.00 1.00 0.16

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
621: Ultic Haploxeralfs, thermic, gravelly loam-----	20	Limitations AASHTO GI >8 (low soil strength) Fragments (>3") >50% Shrink-swell (LEP 3-6)	1.00 1.00 0.78	Limitations Bedrock (hard) < 40" depth Fragments (>3") >50% Saturation < 2.5' depth	1.00 1.00 0.99
622: Xerorthents, shallow-----	40	Limitations Bedrock (hard) < 20" depth Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00 1.00
Typic Haploxeralfs gravelly loam--	30	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.78	Limitations Slopes > 15% Caving potential Bedrock (hard) < 40" depth	1.00 1.00 0.99
Rock outcrop, mudflow-breccia cliffs-----	15	Not rated		Not rated	
623: Xerorthents, shallow-----	40	Limitations Bedrock (hard) < 20" depth Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00 1.00
Typic Haploxeralfs gravelly loam--	25	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.78	Limitations Slopes > 15% Caving potential Bedrock (hard) < 40" depth	1.00 1.00 0.99
Rock outcrop, mudflow-breccia cliffs-----	20	Not rated		Not rated	
624: Ultic Haploxeralfs, mesic, gravelly loam-----	60	Limitations AASHTO GI >8 (low soil strength) Fragments (>3") >50% Shrink-swell (LEP 3-6)	1.00 0.99 0.50	Limitations Fragments (>3") >50% Bedrock (hard) from 40 to 60" Caving potential	0.99 0.96 0.10

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
624: Rockstripe very gravelly loam-----	25	Limitations Bedrock (hard) < 20" depth AASHTO GI 5-8 (soil strength) Fragments (>3") 25 to 50%	1.00 0.22 0.01	Limitations Bedrock (hard) < 40" depth Caving potential Fragments (>3") 25 to 50%	1.00 0.10 0.01
625: Ultic Haploxeralfs, mesic, gravelly loam-----	50	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Fragments (>3") >50%	1.00 1.00 0.99	Limitations Slopes > 15% Fragments (>3") >50% Bedrock (hard) from 40 to 60"	1.00 0.99 0.96
Rockstripe very gravelly loam-----	35	Limitations Bedrock (hard) < 20" depth Slopes > 15% AASHTO GI 5-8 (soil strength)	1.00 1.00 0.22	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 0.10
626: Ultic Haploxeralfs gravelly loam--	40	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)	1.00 1.00 0.99	Limitations Slopes > 15% Caving potential Bedrock (hard) from 40 to 60"	1.00 1.00 0.61
Rockstripe very gravelly loam-----	35	Limitations Bedrock (hard) < 20" depth Slopes > 15% AASHTO GI 5-8 (soil strength)	1.00 1.00 0.22	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 0.10
Rock outcrop, mudflow-breccia cliffs-----	15	Not rated		Not rated	
627: Ultic Haploxeralfs gravelly loam--	40	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)	1.00 1.00 0.99	Limitations Slopes > 15% Caving potential Bedrock (hard) from 40 to 60"	1.00 1.00 0.61
Rockstripe very gravelly loam-----	35	Limitations Bedrock (hard) < 20" depth Slopes > 15% AASHTO GI 5-8 (soil strength)	1.00 1.00 0.22	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 0.10

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
627: Rock outcrop, mudflow-breccia cliffs-----	15	Not rated		Not rated	
628: Rockstripe very gravelly loam----	40	Limitations Bedrock (hard) < 20" depth Slopes > 15% AASHTO GI 5-8 (soil strength)		Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	
Ultic Haploxeralfs gravelly loam--	35	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)		Limitations Slopes > 15% Caving potential Bedrock (hard) from 40 to 60"	
Rock outcrop, mudflow-breccia cliffs-----	20	Not rated		Not rated	
629: Slideland gravelly loam-----	80	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Slopes 8 to 15%		Limitations Caving potential Slopes 8 to 15%	
630: Slideland gravelly loam-----	80	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)		Limitations Slopes > 15% Caving potential	
631: Slideland gravelly loam-----	80	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)		Limitations Slopes > 15% Caving potential	
632: Ultic Haploxeralfs, conglomerate, very deep-----	50	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Slopes 8 to 15%		Limitations Caving potential Slopes 8 to 15% Clay from 40 to 60%	

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
632: Ultic Haploxeralfs, conglomerate, moderately deep-----	40	Limitations Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	0.32 0.22	Limitations Caving potential Bedrock (soft) from 20 to 40" Fragments (>3") 25 to 50%	1.00 0.84 0.32
633: Ultic Haploxeralfs, conglomerate, very deep-----	60	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)	1.00 1.00 0.99	Limitations Slopes > 15% Caving potential Clay from 40 to 60%	1.00 1.00 0.02
Ultic Haploxeralfs, conglomerate, moderately deep-----	30	Limitations Slopes > 15% Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	1.00 0.32 0.22	Limitations Slopes > 15% Caving potential Bedrock (soft) from 20 to 40"	1.00 1.00 0.84
634: Ultic Haploxeralfs, conglomerate, very deep-----	60	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)	1.00 1.00 0.99	Limitations Slopes > 15% Caving potential Clay from 40 to 60%	1.00 1.00 0.02
Ultic Haploxeralfs, conglomerate, moderately deep-----	30	Limitations Slopes > 15% Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	1.00 0.32 0.22	Limitations Slopes > 15% Caving potential Bedrock (soft) from 20 to 40"	1.00 1.00 0.84
635: Ultic Haploxeralfs, conglomerate, very deep-----	50	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)	1.00 1.00 0.99	Limitations Slopes > 15% Caving potential Clay from 40 to 60%	1.00 1.00 0.02

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
635: Ultic Haploxeralfs, conglomerate, moderately deep-----	40	Limitations Slopes > 15% Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	1.00 0.32 0.22	Limitations Slopes > 15% Caving potential Bedrock (soft) from 20 to 40"	1.00 1.00 0.84
636: Ultic Haploxeralfs, conglomerate, moderately deep-----	50	Limitations Slopes > 15% Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	1.00 0.32 0.22	Limitations Slopes > 15% Caving potential Bedrock (soft) from 20 to 40"	1.00 1.00 0.84
Ultic Haploxeralfs, conglomerate, very deep-----	40	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)	1.00 1.00 0.99	Limitations Slopes > 15% Caving potential Clay from 40 to 60%	1.00 1.00 0.02
637: Ultic Haploxeralfs, sandstone-----	80	Limitations Slopes 8 to 15%	0.01	Limitations Caving potential Slopes 8 to 15%	1.00 0.01
638: Ultic Haploxeralfs, sandstone-----	80	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
639: Ultic Haploxeralfs, sandstone-----	75	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
640: Ultic Haploxeralfs, sandstone-----	75	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
641: Ultic Haploxeralfs, sandstone-----	75	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
642: Chinacamp gravelly loam-----	70	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)	1.00 0.99	Limitations Caving potential	1.00
643: Chinacamp gravelly loam-----	70	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)	1.00 1.00 0.99	Limitations Slopes > 15% Caving potential	1.00 1.00
644: Chinacamp gravelly loam-----	70	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)	1.00 1.00 0.99	Limitations Slopes > 15% Caving potential	1.00 1.00
645: Chinacamp gravelly loam-----	70	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)	1.00 1.00 0.99	Limitations Slopes > 15% Caving potential	1.00 1.00
646: Coalcanyon taxadjunct very gravelly loam-----	80	Limitations Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	0.78 0.30	Limitations Caving potential Fragments (>3") 25 to 50% Clay from 40 to 60%	1.00 0.30 0.02
647: Coalcanyon taxadjunct very gravelly loam-----	75	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.78 0.30	Limitations Slopes > 15% Caving potential Fragments (>3") 25 to 50%	1.00 1.00 0.30

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
648: Coalcanyon taxadjunct very gravelly loam-----	80	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.78 0.30	Limitations Slopes > 15% Caving potential Fragments (>3") 25 to 50%	1.00 1.00 0.30
649: Coalcanyon taxadjunct very gravelly loam-----	75	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.78 0.30	Limitations Slopes > 15% Caving potential Fragments (>3") 25 to 50%	1.00 1.00 0.30
650: Schott very gravelly loam-----	65	Limitations Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	0.97 0.78	Limitations Caving potential Fragments (>3") 25 to 50% Bedrock (hard) from 40 to 60"	1.00 0.97 0.42
651: Schott very gravelly loam-----	65	Limitations Slopes > 15% Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	1.00 0.97 0.78	Limitations Slopes > 15% Caving potential Fragments (>3") 25 to 50%	1.00 1.00 0.97
652: Schott very gravelly loam-----	65	Limitations Slopes > 15% Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	1.00 0.97 0.78	Limitations Slopes > 15% Caving potential Fragments (>3") 25 to 50%	1.00 1.00 0.97
Rock outcrop, mudflow breccia----	20	Not rated		Not rated	
654: Coridge bouldery loam-----	70	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Bedrock (hard) from 20 to 40"	1.00 0.99 0.90	Limitations Bedrock (hard) < 40" depth Saturation < 2.5' depth Caving potential	1.00 1.00 1.00
Rock outcrop, Cohasset basalt----	20	Not rated		Not rated	

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
655:					
Coridge bouldery loam-----	70	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Bedrock (hard) from 20 to 40"	1.00 0.99 0.90	Limitations Bedrock (hard) < 40" depth Saturation < 2.5' depth Caving potential	1.00 1.00 1.00
Rock outcrop, Cohasset basalt-----	20	Not rated		Not rated	
656:					
Rock outcrop, basalt cliffs-----	40	Not rated		Not rated	
Coalcanyon taxadjunct very gravelly loam-----	40	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.78 0.30	Limitations Slopes > 15% Caving potential Fragments (>3") 25 to 50%	1.00 1.00 0.30
657:					
Bonneyridge sandy loam-----	35	No limitations		Limitations Caving potential	1.00
Chawanakee gravelly sandy loam----	30	Limitations Bedrock (soft) < 20" depth	1.00	Limitations Bedrock (soft) < 20" depth Caving potential	1.00 0.10
Rock outcrop, quartz diorite-----	20	Not rated		Not rated	
658:					
Bonneyridge sandy loam-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
Chawanakee gravelly sandy loam----	30	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential	1.00 1.00 0.10
Rock outcrop, quartz diorite-----	25	Not rated		Not rated	
659:					
Bonneyridge sandy loam-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
659:					
Chawanakee gravelly sandy loam----	30	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential	1.00 1.00 0.10
Rock outcrop, quartz diorite-----	25	Not rated		Not rated	
660:					
Bonneyr ridge sandy loam-----	30	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
Chawanakee gravelly sandy loam----	30	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential	1.00 1.00 0.10
Rock outcrop, quartz diorite-----	30	Not rated		Not rated	
661:					
Millerridge gravelly sandy clay loam-----	45	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)	1.00 0.99	Limitations Caving potential Bedrock (soft) from 20 to 40"	1.00 0.77
Boxrobber cobbly sandy clay loam--	40	Limitations Bedrock (soft) < 20" depth Shrink-swell (LEP >6) Bedrock (hard) from 20 to 40"	1.00 0.99 0.46	Limitations Bedrock (hard) < 40" depth Bedrock (soft) < 20" depth Caving potential	1.00 1.00 0.10
662:					
Millerridge gravelly sandy clay loam-----	45	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)	1.00 1.00 0.99	Limitations Slopes > 15% Caving potential Bedrock (soft) from 20 to 40"	1.00 1.00 0.77
Boxrobber cobbly sandy clay loam--	40	Limitations Slopes > 15% Bedrock (soft) < 20" depth Shrink-swell (LEP >6)	1.00 1.00 0.99	Limitations Bedrock (hard) < 40" depth Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00 1.00

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
663:					
Millerridge gravelly sandy clay loam-----	45	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)	1.00 1.00 0.99	Limitations Slopes > 15% Caving potential Bedrock (soft) from 20 to 40"	1.00 1.00 0.77
Boxrobber cobbly sandy clay loam--	40	Limitations Slopes > 15% Bedrock (soft) < 20" depth Shrink-swell (LEP >6)	1.00 1.00 0.99	Limitations Bedrock (hard) < 40" depth Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00 1.00
664:					
Millerridge gravelly sandy clay loam-----	45	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)	1.00 1.00 0.99	Limitations Slopes > 15% Caving potential Bedrock (soft) from 20 to 40"	1.00 1.00 0.77
Boxrobber cobbly sandy clay loam--	40	Limitations Slopes > 15% Bedrock (soft) < 20" depth Shrink-swell (LEP >6)	1.00 1.00 0.99	Limitations Bedrock (hard) < 40" depth Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00 1.00
665:					
Surnuf gravelly loam-----	40	Limitations Shrink-swell (LEP >6) AASHTO GI >8 (low soil strength) Slopes 8 to 15%	1.00 1.00 0.01	Limitations Caving potential Clay from 40 to 60% Slopes 8 to 15%	1.00 0.88 0.01
Bigridge loam-----	40	Limitations Slopes 8 to 15%	0.01	Limitations Caving potential Slopes 8 to 15%	1.00 0.01
666:					
Surnuf gravelly loam-----	40	Limitations Slopes > 15% Shrink-swell (LEP >6) AASHTO GI >8 (low soil strength)	1.00 1.00 1.00	Limitations Slopes > 15% Caving potential Clay from 40 to 60%	1.00 1.00 0.88
Bigridge loam-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
667:					
Surnuf gravelly loam-----	40	Limitations Slopes > 15% Shrink-swell (LEP >6) AASHTO GI >8 (low soil strength)	1.00 1.00 1.00	Limitations Slopes > 15% Caving potential Clay from 40 to 60%	1.00 1.00 0.88
Bigridge loam-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
668:					
Surnuf gravelly loam-----	40	Limitations Slopes > 15% Shrink-swell (LEP >6) AASHTO GI >8 (low soil strength)	1.00 1.00 1.00	Limitations Slopes > 15% Caving potential Clay from 40 to 60%	1.00 1.00 0.88
Bigridge loam-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
669:					
Oroshore gravelly loam-----	35	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 0.99 0.03	Limitations Caving potential Bedrock (soft) from 20 to 40" Fragments (>3") 25 to 50%	1.00 0.15 0.03
Mounthope loam-----	25	Limitations Shrink-swell (LEP 3-6) Slopes 8 to 15%	0.06 0.01	Limitations Caving potential Slopes 8 to 15%	1.00 0.01
Dunstone gravelly loam-----	20	Limitations Bedrock (soft) < 20" depth Bedrock (hard) from 20 to 40" Slopes 8 to 15%	1.00 0.03 0.01	Limitations Bedrock (hard) < 40" depth Bedrock (soft) < 20" depth Caving potential	1.00 1.00 0.10
670:					
Oroshore gravelly loam-----	35	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)	1.00 1.00 0.99	Limitations Slopes > 15% Caving potential Bedrock (soft) from 20 to 40"	1.00 1.00 0.15
Mounthope loam-----	25	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.06	Limitations Slopes > 15% Caving potential	1.00 1.00

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
670: Dunstone gravelly loam-----	20	Limitations Slopes > 15% Bedrock (soft) < 20" depth Bedrock (hard) from 20 to 40"	1.00 1.00 0.03	Limitations Bedrock (hard) < 40" depth Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00 1.00
671: Oroshore gravelly loam-----	35	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)	1.00 1.00 0.99	Limitations Slopes > 15% Caving potential Bedrock (soft) from 20 to 40"	1.00 1.00 0.15
Mounthope loam-----	25	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.06	Limitations Slopes > 15% Caving potential	1.00 1.00
Dunstone gravelly loam-----	20	Limitations Slopes > 15% Bedrock (soft) < 20" depth Bedrock (hard) from 20 to 40"	1.00 1.00 0.03	Limitations Bedrock (hard) < 40" depth Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00 1.00
672: Oroshore gravelly loam-----	30	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)	1.00 1.00 0.99	Limitations Slopes > 15% Caving potential Bedrock (soft) from 20 to 40"	1.00 1.00 0.15
Mounthope loam-----	25	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.06	Limitations Slopes > 15% Caving potential	1.00 1.00
Dunstone gravelly loam-----	25	Limitations Slopes > 15% Bedrock (soft) < 20" depth Bedrock (hard) from 20 to 40"	1.00 1.00 0.03	Limitations Bedrock (hard) < 40" depth Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00 1.00
674: Chawanakee gravelly sandy loam---	30	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential	1.00 1.00 0.10

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
674:					
Bonneycastle sandy loam-----	30	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
Rock outcrop, quartz diorite-----	30	Not rated		Not rated	
675:					
Clearhayes sandy clay loam-----	70	Limitations Frequent or occasional flooding Saturation from 12 to 30" depth Fragments (>3") 25 to 50%	1.00 0.68 0.01	Limitations Saturation < 2.5' depth Caving potential Frequent or occasional flooding	1.00 1.00 0.50
Hamslough clay-----	15	Limitations Ponding (any duration) Saturation < 12" depth Frequent or occasional flooding	1.00 1.00 1.00	Limitations Pan (thick) < 40" depth Ponding (any duration) Saturation < 2.5' depth	1.00 1.00 1.00
676:					
Carhart clay-----	50	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2.5' depth Caving potential	1.00 1.00 1.00
Anita taxadjunct clay-----	40	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Ponding (any duration)	1.00 1.00 1.00	Limitations Bedrock (soft) < 20" depth Ponding (any duration) Saturation < 2.5' depth	1.00 1.00 1.00
677:					
Tuscan gravelly loam-----	40	Limitations Pan (thick) < 20" depth Saturation < 12" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Pan (thick) < 40" depth Saturation < 2.5' depth Caving potential	1.00 1.00 0.10
Fallager loam-----	25	Limitations Pan (thick) < 20" depth Shrink-swell (LEP >6) Ponding (any duration)	1.00 1.00 1.00	Limitations Pan (thick) < 40" depth Ponding (any duration) Saturation < 2.5' depth	1.00 1.00 1.00

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
677: Anita, gravelly duripan-----	15	Limitations AASHTO GI >8 (low soil strength) Pan (thick) < 20" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Pan (thick) < 40" depth Ponding (any duration) Saturation < 2.5' depth	1.00 1.00 1.00
679: Lucksev loam-----	40	Limitations Saturation < 12" depth Bedrock (soft) < 20" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Bedrock (soft) < 20" depth Saturation < 2.5' depth Caving potential	1.00 1.00 0.10
Butteside gravelly loam-----	35	Limitations Shrink-swell (LEP >6) AASHTO GI >8 (low soil strength)	1.00 1.00	Limitations Bedrock (soft) from 20 to 40" Clay from 40 to 60% Caving potential	0.71 0.50 0.10
Carhart clay-----	15	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Saturation from 12 to 30" depth	1.00 1.00 0.90	Limitations Saturation < 2.5' depth Caving potential Clay from 40 to 60%	1.00 1.00 0.88
680: Lucksev loam-----	45	Limitations Slopes > 15% Bedrock (soft) < 20" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential	1.00 1.00 0.10
Butteside gravelly loam-----	40	Limitations Shrink-swell (LEP >6) Slopes > 15% AASHTO GI >8 (low soil strength)	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock (soft) from 20 to 40" Clay from 40 to 60%	1.00 0.71 0.50
683: Typic Haploxeralfs, magnesian, low elevation-----	50	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Bedrock (hard) from 20 to 40"	1.00 0.99 0.46	Limitations Bedrock (hard) < 40" depth Caving potential Fragments (>3") 25 to 50%	1.00 1.00 0.01
Earlal very gravelly loam-----	20	Limitations Bedrock (hard) < 20" depth Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 1.00 0.44	Limitations Bedrock (hard) < 40" depth Fragments (>3") 25 to 50% Slopes 8 to 15%	1.00 0.44 0.16

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
683: Rock outcrop, serpentinite-----	15	Not rated		Not rated	
684: Typic Haploxeralfs, magnesian, low elevation-----	50	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)		Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	
Earlial very gravelly loam-----	20	Limitations Bedrock (hard) < 20" depth Slopes > 15% Shrink-swell (LEP >6)		Limitations Bedrock (hard) < 40" depth Slopes > 15% Fragments (>3") 25 to 50%	
Rock outcrop, serpentinite-----	15	Not rated		Not rated	
685: Bosquejo taxadjunct, gravelly substratum-----	70	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Ponding (any duration)		Limitations Ponding (any duration) Caving potential Clay > 60%	
686: Redsluff taxadjunct clay loam----	70	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Rare flooding		Limitations Caving potential Saturation from 2.5' to 6' depth	
687: Xerorthents, shallow-----	45	Limitations Bedrock (hard) < 20" depth Bedrock (soft) < 20" depth AASHTO GI >8 (low soil strength)		Limitations Bedrock (hard) < 40" depth Bedrock (soft) < 20" depth Caving potential	
Typic Haploxeralfs gravelly loam--	40	Limitations Shrink-swell (LEP 3-6) Slopes 8 to 15%		Limitations Caving potential Bedrock (hard) < 40" depth Slopes 8 to 15%	

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
700:					
Retsongulch very gravelly sandy loam-----	40	Limitations Slopes > 15% Fragments (>3") 25 to 50% Bedrock (hard) from 20 to 40"	1.00 0.55 0.46	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 1.00
Flumewall gravelly sandy loam----	25	Limitations Bedrock (hard) < 20" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.82	Limitations Bedrock (hard) < 40" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.82
701:					
Powellton gravelly loam-----	40	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6)	1.00 1.00 0.01	Limitations Slopes > 15% Caving potential	1.00 0.10
Obstruction gravelly sandy loam---	30	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
702:					
Cerpone gravelly loam-----	50	Limitations Shrink-swell (LEP >6) Slopes 8 to 15% AASHTO GI 5-8 (soil strength)	0.99 0.37 0.22	Limitations Caving potential Slopes 8 to 15% Bedrock (hard) from 40 to 60"	1.00 0.37 0.03
Typic Haploxeraalfs, magnesian, very gravelly loam-----	20	Limitations Shrink-swell (LEP >6) AASHTO GI 5-8 (soil strength) Slopes 8 to 15%	1.00 0.22 0.16	Limitations Caving potential Clay from 40 to 60% Slopes 8 to 15%	1.00 0.50 0.16
Earlal very gravelly loam-----	15	Limitations Bedrock (hard) < 20" depth Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 1.00 0.44	Limitations Bedrock (hard) < 40" depth Fragments (>3") 25 to 50% Slopes 8 to 15%	1.00 0.44 0.16

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
703:					
Cerpone gravelly loam-----	30	Limitations Slopes > 15% Shrink-swell (LEP >6) AASHTO GI 5-8 (soil strength)	1.00 0.99 0.22	Limitations Slopes > 15% Caving potential Bedrock (hard) from 40 to 60"	1.00 1.00 0.03
Typic Haploxeraalfs, magnesian, very gravelly loam-----	30	Limitations Slopes > 15% Shrink-swell (LEP >6) AASHTO GI 5-8 (soil strength)	1.00 1.00 0.22	Limitations Slopes > 15% Caving potential Clay from 40 to 60%	1.00 1.00 0.50
Earlial very gravelly loam-----	15	Limitations Bedrock (hard) < 20" depth Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.44
Rock outcrop, serpentinite-----	15	Not rated		Not rated	
704:					
Typic Haploxeraalfs, magnesian, very gravelly loam-----	40	Limitations Slopes > 15% Shrink-swell (LEP >6) AASHTO GI 5-8 (soil strength)	1.00 1.00 0.22	Limitations Slopes > 15% Caving potential Clay from 40 to 60%	1.00 1.00 0.50
Earlial gravelly loam-----	20	Limitations Bedrock (hard) < 20" depth Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.44
Cerpone gravelly loam-----	15	Limitations Slopes > 15% Shrink-swell (LEP >6) AASHTO GI 5-8 (soil strength)	1.00 0.99 0.22	Limitations Slopes > 15% Caving potential Bedrock (hard) from 40 to 60"	1.00 1.00 0.03
Rock outcrop, serpentinite-----	15	Not rated		Not rated	

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
705:					
Typic Haploxeralfs, magnesian, very gravelly loam-----	35	Limitations Slopes > 15% Shrink-swell (LEP >6) AASHTO GI 5-8 (soil strength)	1.00 1.00 0.22	Limitations Slopes > 15% Caving potential Clay from 40 to 60%	1.00 1.00 0.50
Earlall very gravelly loam-----	25	Limitations Bedrock (hard) < 20" depth Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.44
Cerpone gravelly loam-----	15	Limitations Slopes > 15% Shrink-swell (LEP >6) AASHTO GI 5-8 (soil strength)	1.00 0.99 0.22	Limitations Slopes > 15% Caving potential Bedrock (hard) from 40 to 60"	1.00 1.00 0.03
Rock outcrop, serpentinite-----	15	Not rated		Not rated	
711:					
Dixmine very gravelly loam-----	45	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 0.99 0.01	Limitations Caving potential Fragments (>3") 25 to 50% Slopes 8 to 15%	1.00 0.01 0.01
Toadtown loam-----	40	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6) Slopes 8 to 15%	1.00 0.50 0.01	Limitations Caving potential Clay from 40 to 60% Slopes 8 to 15%	0.10 0.04 0.01
712:					
Dixmine very gravelly loam-----	50	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)	1.00 1.00 0.99	Limitations Slopes > 15% Caving potential Fragments (>3") 25 to 50%	1.00 1.00 0.01
Toadtown loam-----	40	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 15% Caving potential Clay from 40 to 60%	1.00 0.10 0.04

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
713:					
Dixmine very gravelly loam-----	50	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)	1.00 1.00 0.99	Limitations Slopes > 15% Caving potential Fragments (>3") 25 to 50%	1.00 1.00 0.01
Toadtown loam-----	35	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 15% Caving potential Clay from 40 to 60%	1.00 0.10 0.04
714:					
Dixmine very gravelly loam-----	50	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)	1.00 1.00 0.99	Limitations Slopes > 15% Caving potential Fragments (>3") 25 to 50%	1.00 1.00 0.01
Toadtown loam-----	35	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 15% Caving potential Clay from 40 to 60%	1.00 0.10 0.04
715:					
Logtrain gravelly loam-----	40	Limitations Slopes > 15% AASHTO GI 5-8 (soil strength) Shrink-swell (LEP 3-6)	1.00 0.78 0.01	Limitations Slopes > 15% Caving potential Bedrock (hard) from 40 to 60"	1.00 1.00 0.13
Bottlehill very gravelly loam-----	30	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Bedrock (hard) from 20 to 40"	1.00 0.50 0.29	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 1.00
Walkermine very gravelly loam-----	20	Limitations Bedrock (hard) < 20" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 0.10
716:					
Griffgulch very gravelly silt loam	40	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 0.99 0.94	Limitations Caving potential Fragments (>3") 25 to 50% Clay from 40 to 60%	1.00 0.94 0.18

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
716: Surnuf gravelly loam-----	40	Limitations Shrink-swell (LEP >6) AASHTO GI >8 (low soil strength) Slopes 8 to 15%	1.00 1.00 0.01	Limitations Caving potential Clay from 40 to 60% Slopes 8 to 15%	1.00 0.88 0.01
717: Griffgulch very gravelly silt loam	40	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)	1.00 1.00 0.99	Limitations Slopes > 15% Caving potential Fragments (>3") 25 to 50%	1.00 1.00 0.94
Surnuf gravelly loam-----	40	Limitations Slopes > 15% Shrink-swell (LEP >6) AASHTO GI >8 (low soil strength)	1.00 1.00 1.00	Limitations Slopes > 15% Caving potential Clay from 40 to 60%	1.00 1.00 0.88
718: Griffgulch very gravelly silt loam	35	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)	1.00 1.00 0.99	Limitations Slopes > 15% Caving potential Fragments (>3") 25 to 50%	1.00 1.00 0.94
Surnuf gravelly loam-----	35	Limitations Slopes > 15% Shrink-swell (LEP >6) AASHTO GI >8 (low soil strength)	1.00 1.00 1.00	Limitations Slopes > 15% Caving potential Clay from 40 to 60%	1.00 1.00 0.88
Spine taxadjunct very cobbly loam	15	Limitations Bedrock (hard) < 20" depth Slopes > 15% AASHTO GI >8 (low soil strength)	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.84
719: Griffgulch very gravelly silt loam	35	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)	1.00 1.00 0.99	Limitations Slopes > 15% Caving potential Fragments (>3") 25 to 50%	1.00 1.00 0.94
Surnuf gravelly loam-----	30	Limitations Slopes > 15% Shrink-swell (LEP >6) AASHTO GI >8 (low soil strength)	1.00 1.00 1.00	Limitations Slopes > 15% Caving potential Clay from 40 to 60%	1.00 1.00 0.88

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
719:					
Spine taxadjunct very cobbly loam	20	Limitations		Limitations	
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00
		AASHTO GI >8 (low soil strength)	1.00	Fragments (>3") 25 to 50%	0.84
720:					
Dystroxerepts extremely gravelly loam-----	40	Limitations		Limitations	
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00
		Fragments (>3") 25 to 50%	0.90	Slopes > 15%	1.00
		Bedrock (hard) from 20 to 40"	0.01	Caving potential	1.00
Haploxeralfs very gravelly loam---	30	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Shrink-swell (LEP >6)	0.99	Caving potential	1.00
		Fragments (>3") 25 to 50%	0.99	Fragments (>3") 25 to 50%	0.99
Rock outcrop, metavolcanic-----	15	Not rated		Not rated	
721:					
Haploxerands, granitic till, medial sandy loam-----	70	Limitations		Limitations	
		Slopes 8 to 15%	0.96	Caving potential	1.00
				Slopes 8 to 15%	0.96
722:					
Haploxerands, granitic till, medial sandy loam-----	70	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Caving potential	1.00
723:					
Haploxerands, granitic till, medial sandy loam-----	70	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Caving potential	1.00
724:					
Haploxerands, volcanic till, cobbly medial sandy loam-----	75	Limitations		Limitations	
		Slopes 8 to 15%	0.16	Caving potential	1.00
				Slopes 8 to 15%	0.16

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
725: Haploxerands, volcanic till, cobbly medial sandy loam-----	75	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
726: Haploxerands, volcanic till, cobbly medial sandy loam-----	75	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
727: Bonneyridge sandy loam-----	85	No limitations		Limitations Caving potential	1.00
728: Bonneyridge sandy loam-----	85	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
729: Bonneyridge sandy loam-----	85	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
730: Tusccoll gravelly loam-----	60	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6)	1.00 1.00 0.22	Limitations Slopes > 15% Caving potential	1.00 1.00
Schott very gravelly loam-----	25	Limitations Slopes > 15% Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	1.00 0.97 0.78	Limitations Slopes > 15% Caving potential Fragments (>3") 25 to 50%	1.00 1.00 0.97
731: Tusccoll gravelly loam-----	50	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6)	1.00 1.00 0.22	Limitations Slopes > 15% Caving potential	1.00 1.00

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
731: Schott very gravelly loam-----	35	Limitations Slopes > 15% Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	1.00 0.97 0.78	Limitations Slopes > 15% Caving potential Fragments (>3") 25 to 50%	1.00 1.00 0.97
732: Bonepile taxadjunct, duripan substratum-----	90	Limitations Fragments (>3") 25 to 50%	0.07	Limitations Caving potential Saturation from 2.5' to 6' depth Fragments (>3") 25 to 50%	1.00 0.94 0.07
733: Haploxeralfs, terrace, gravelly loam-----	75	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 0.99 0.99	Limitations Fragments (>3") 25 to 50% Caving potential	0.99 0.10
734: Haploxerands medial sandy loam---	55	Limitations Frost action very likely Slopes > 15%	1.00 1.00	Limitations Caving potential Slopes > 15%	1.00 1.00
Aquic Xerofluvents peaty very fine sandy loam-----	35	Limitations Saturation < 12" depth Frost action very likely Frequent or occasional flooding	1.00 1.00 1.00	Limitations Saturation < 2.5' depth Caving potential Organic matter (PT, OH, OI) below 20"	1.00 1.00 1.00
735: Fluvaquents, loamy-----	80	Limitations Saturation < 12" depth Rare flooding AASHTO GI 5-8 (soil strength)	1.00 0.50 0.22	Limitations Saturation < 2.5' depth Caving potential	1.00 0.10
801: Obstruction gravelly sandy loam---	70	Limitations Slopes 8 to 15%	0.16	Limitations Caving potential Slopes 8 to 15%	1.00 0.16

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
802:					
Obskel very gravelly sandy loam---	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
Obstruction gravelly sandy loam---	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
803:					
Obskel very gravelly sandy loam---	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
Obstruction gravelly sandy loam---	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
804:					
Obskel very gravelly sandy loam---	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
Obstruction gravelly sandy loam---	25	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
Retsongulch very gravelly sandy loam-----	20	Limitations Slopes > 15% Fragments (>3") 25 to 50% Bedrock (hard) from 20 to 40"	1.00 0.55 0.46	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 1.00
805:					
Bottlehill very gravelly loam-----	50	Limitations Shrink-swell (LEP 3-6) Bedrock (hard) from 20 to 40"	0.50 0.29	Limitations Bedrock (hard) < 40" depth Caving potential	1.00 1.00
Walkermine very gravelly loam-----	20	Limitations Bedrock (hard) < 20" depth Slopes 8 to 15% Fragments (>3") 25 to 50%	1.00 0.84 0.01	Limitations Bedrock (hard) < 40" depth Slopes 8 to 15% Caving potential	1.00 0.84 0.10

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
805:					
Logtrain gravelly loam-----	20	Limitations		Limitations	
		AASHTO GI 5-8 (soil strength)	0.78	Caving potential	1.00
		Shrink-swell (LEP 3-6)	0.01	Bedrock (hard) from 40 to 60"	0.13
806:					
Bottlehill very gravelly loam----	50	Limitations		Limitations	
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00
		Shrink-swell (LEP 3-6)	0.50	Slopes > 15%	1.00
		Bedrock (hard) from 20 to 40"	0.29	Caving potential	1.00
Walkermine very gravelly loam----	20	Limitations		Limitations	
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") 25 to 50%	0.01	Caving potential	0.10
Logtrain gravelly loam-----	20	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		AASHTO GI 5-8 (soil strength)	0.78	Caving potential	1.00
		Shrink-swell (LEP 3-6)	0.01	Bedrock (hard) from 40 to 60"	0.13
807:					
Bottlehill very gravelly loam----	35	Limitations		Limitations	
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00
		Shrink-swell (LEP 3-6)	0.50	Slopes > 15%	1.00
		Bedrock (hard) from 20 to 40"	0.29	Caving potential	1.00
Logtrain gravelly loam-----	30	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		AASHTO GI 5-8 (soil strength)	0.78	Caving potential	1.00
		Shrink-swell (LEP 3-6)	0.01	Bedrock (hard) from 40 to 60"	0.13
Walkermine very gravelly loam----	25	Limitations		Limitations	
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") 25 to 50%	0.01	Caving potential	0.10
808:					
Bottlehill very gravelly loam----	45	Limitations		Limitations	
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00
		Shrink-swell (LEP 3-6)	0.50	Slopes > 15%	1.00
		Bedrock (hard) from 20 to 40"	0.29	Caving potential	1.00

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
808:					
Walkermine very gravelly loam-----	20	Limitations Bedrock (hard) < 20" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 0.10
Logtrain gravelly loam-----	20	Limitations Slopes > 15% AASHTO GI 5-8 (soil strength) Shrink-swell (LEP 3-6)	1.00 0.78 0.01	Limitations Slopes > 15% Caving potential Bedrock (hard) from 40 to 60"	1.00 1.00 0.13
809:					
Walkermine very gravelly loam-----	45	Limitations Bedrock (hard) < 20" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 0.10
Bottlehill very gravelly loam-----	15	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Bedrock (hard) from 20 to 40"	1.00 0.50 0.29	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 1.00
Logtrain gravelly loam-----	15	Limitations Slopes > 15% AASHTO GI 5-8 (soil strength) Shrink-swell (LEP 3-6)	1.00 0.78 0.01	Limitations Slopes > 15% Caving potential Bedrock (hard) from 40 to 60"	1.00 1.00 0.13
Rock outcrop, metavolcanic-----	15	Not rated		Not rated	
810:					
Dixmine very gravelly loam-----	35	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)	1.00 1.00 0.99	Limitations Slopes > 15% Caving potential Fragments (>3") 25 to 50%	1.00 1.00 0.01
Mac gravelly loam-----	25	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.22	Limitations Slopes > 15% Caving potential Bedrock (soft) from 20 to 40"	1.00 1.00 0.03
Spine very gravelly loam-----	25	Limitations Bedrock (hard) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.22	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 0.10

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
811:					
Powellton gravelly loam-----	50	Limitations		Limitations	
		AASHTO GI >8 (low soil strength)	1.00	Slopes > 15%	1.00
		Slopes > 15%	1.00	Caving potential	0.10
		Shrink-swell (LEP 3-6)	0.01		
Toadtown loam-----	40	Limitations		Limitations	
		AASHTO GI >8 (low soil strength)	1.00	Caving potential	0.10
		Shrink-swell (LEP 3-6)	0.50	Clay from 40 to 60%	0.04
812:					
Powellton gravelly loam-----	50	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		AASHTO GI >8 (low soil strength)	1.00	Caving potential	0.10
		Shrink-swell (LEP 3-6)	0.01		
Toadtown loam-----	40	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		AASHTO GI >8 (low soil strength)	1.00	Caving potential	0.10
		Shrink-swell (LEP 3-6)	0.50	Clay from 40 to 60%	0.04
813:					
Powellton gravelly loam-----	50	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		AASHTO GI >8 (low soil strength)	1.00	Caving potential	0.10
		Shrink-swell (LEP 3-6)	0.01		
Toadtown loam-----	40	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		AASHTO GI >8 (low soil strength)	1.00	Caving potential	0.10
		Shrink-swell (LEP 3-6)	0.50	Clay from 40 to 60%	0.04
814:					
Mountyana gravelly loam-----	80	Limitations		Limitations	
		AASHTO GI >8 (low soil strength)	1.00	Caving potential	1.00
		Shrink-swell (LEP 3-6)	0.78	Slopes 8 to 15%	0.16
		Slopes 8 to 15%	0.16		
815:					
Mountyana gravelly loam-----	80	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		AASHTO GI >8 (low soil strength)	1.00	Caving potential	1.00
		Shrink-swell (LEP 3-6)	0.78		

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
817: Lydon very gravelly medial coarse sandy loam-----	80	Limitations Bedrock (hard) from 20 to 40" Fragments (>3") 25 to 50%	0.11 0.02	Limitations Bedrock (hard) < 40" depth Caving potential Fragments (>3") 25 to 50%	1.00 1.00 0.02
818: Lydon very gravelly medial coarse sandy loam-----	75	Limitations Slopes > 15% Bedrock (hard) from 20 to 40" Fragments (>3") 25 to 50%	1.00 0.11 0.02	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 1.00
819: Lydon very gravelly medial coarse sandy loam-----	65	Limitations Slopes > 15% Bedrock (hard) from 20 to 40" Fragments (>3") 25 to 50%	1.00 0.11 0.02	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 1.00
Rock outcrop, mudflow breccia----	20	Not rated		Not rated	
820: Lydon very gravelly medial coarse sandy loam-----	60	Limitations Slopes > 15% Bedrock (hard) from 20 to 40" Fragments (>3") 25 to 50%	1.00 0.11 0.02	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 1.00
Rock outcrop, mudflow breccia----	25	Not rated		Not rated	
821: Lydon very gravelly medial coarse sandy loam-----	55	Limitations Slopes > 15% Bedrock (hard) from 20 to 40" Fragments (>3") 25 to 50%	1.00 0.11 0.02	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 1.00
Rock outcrop, mudflow breccia----	30	Not rated		Not rated	
822: Bonepile gravelly medial loam----	85	No limitations		Limitations Caving potential	1.00
823: Bonepile gravelly medial loam----	85	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
824: Beecee very gravelly medial loam--	85	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
825: Beecee very gravelly medial loam--	60	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
Lydon very gravelly medial coarse sandy loam-----	20	Limitations Slopes > 15% Bedrock (hard) from 20 to 40" Fragments (>3") 25 to 50%	1.00 0.11 0.02	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 1.00
826: Redbone gravelly medial sandy loam	80	Limitations Slopes 8 to 15%	0.16	Limitations Caving potential Slopes 8 to 15%	1.00 0.16
827: Redbone gravelly medial sandy loam	80	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
829: Paradiso loam-----	80	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)	1.00 1.00	Limitations Clay from 40 to 60% Caving potential	0.50 0.10
830: Paradiso loam-----	75	Limitations AASHTO GI >8 (low soil strength) Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Slopes > 15% Clay from 40 to 60% Caving potential	1.00 0.50 0.10
831: Surnuf gravelly loam-----	40	Limitations Shrink-swell (LEP >6) AASHTO GI >8 (low soil strength) Slopes 8 to 15%	1.00 1.00 0.01	Limitations Caving potential Clay from 40 to 60% Slopes 8 to 15%	1.00 0.88 0.01

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
831: Bigridge loam-----	30	Limitations Slopes 8 to 15%	0.01	Limitations Caving potential Slopes 8 to 15%	1.00 0.01
Spine very gravelly loam-----	15	Limitations Bedrock (hard) < 20" depth Shrink-swell (LEP 3-6) Slopes 8 to 15%	1.00 0.22 0.04	Limitations Bedrock (hard) < 40" depth Caving potential Slopes 8 to 15%	1.00 0.10 0.04
832: Surnuf gravelly loam-----	40	Limitations Slopes > 15% Shrink-swell (LEP >6) AASHTO GI >8 (low soil strength)	1.00 1.00 1.00	Limitations Slopes > 15% Caving potential Clay from 40 to 60%	1.00 1.00 0.88
Bigridge loam-----	30	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
Spine very gravelly loam-----	15	Limitations Bedrock (hard) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.22	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 0.10
833: Surnuf gravelly loam-----	60	Limitations Slopes > 15% Shrink-swell (LEP >6) AASHTO GI >8 (low soil strength)	1.00 1.00 1.00	Limitations Slopes > 15% Caving potential Clay from 40 to 60%	1.00 1.00 0.88
Bigridge loam-----	15	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
Spine very gravelly loam-----	15	Limitations Bedrock (hard) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.22	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 0.10

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
834:					
Hietanen gravelly loam-----	50	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6)	1.00 0.01	Limitations Caving potential	0.10
Mac gravelly loam-----	30	Limitations Shrink-swell (LEP 3-6)	0.22	Limitations Caving potential Bedrock (soft) from 20 to 40"	1.00 0.03
835:					
Hietanen gravelly loam-----	60	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6)	1.00 1.00 0.01	Limitations Slopes > 15% Caving potential	1.00 0.10
Mac gravelly loam-----	20	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.22	Limitations Slopes > 15% Caving potential Bedrock (soft) from 20 to 40"	1.00 1.00 0.03
836:					
Hietanen gravelly loam-----	50	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6)	1.00 1.00 0.01	Limitations Slopes > 15% Caving potential	1.00 0.10
Mac gravelly loam-----	20	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.22	Limitations Slopes > 15% Caving potential Bedrock (soft) from 20 to 40"	1.00 1.00 0.03
Spine very gravelly loam-----	15	Limitations Bedrock (hard) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.22	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 0.10
837:					
Hietanen gravelly loam-----	35	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6)	1.00 1.00 0.01	Limitations Slopes > 15% Caving potential	1.00 0.10

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
837:					
Spine very gravelly loam-----	25	Limitations Bedrock (hard) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.22	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 0.10
Mac gravelly loam-----	20	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.22	Limitations Slopes > 15% Caving potential Bedrock (soft) from 20 to 40"	1.00 1.00 0.03
838:					
Dixmine very gravelly loam-----	35	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)	1.00 1.00 0.99	Limitations Slopes > 15% Caving potential Fragments (>3") 25 to 50%	1.00 1.00 0.01
Spine very gravelly loam-----	25	Limitations Bedrock (hard) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.22	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 0.10
Mac gravelly loam-----	25	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.22	Limitations Slopes > 15% Caving potential Bedrock (soft) from 20 to 40"	1.00 1.00 0.03
839:					
Chawanakee gravelly sandy loam----	55	Limitations Bedrock (soft) < 20" depth Slopes 8 to 15%	1.00 0.16	Limitations Bedrock (soft) < 20" depth Slopes 8 to 15% Caving potential	1.00 0.16 0.10
Billscabin gravelly sandy loam----	35	Limitations Slopes 8 to 15%	0.16	Limitations Caving potential Slopes 8 to 15%	1.00 0.16
841:					
Billscabin gravelly sandy loam----	50	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
841: Bonneyridge sandy loam-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
842: Billscabin gravelly sandy loam----	60	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
Bonneyridge sandy loam-----	25	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
846: Bonneyridge sandy loam-----	60	Limitations Slopes 8 to 15%	0.01	Limitations Caving potential Slopes 8 to 15%	1.00 0.01
Lewisflat loam-----	20	Limitations AASHTO GI 5-8 (soil strength) Slopes 8 to 15%	0.78 0.01	Limitations Caving potential Slopes 8 to 15%	0.10 0.01
847: Bonneyridge sandy loam-----	60	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
Lewisflat loam-----	20	Limitations Slopes > 15% AASHTO GI 5-8 (soil strength)	1.00 0.78	Limitations Slopes > 15% Caving potential	1.00 0.10
848: Bonneyridge sandy loam-----	60	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
Lewisflat loam-----	20	Limitations Slopes > 15% AASHTO GI 5-8 (soil strength)	1.00 0.78	Limitations Slopes > 15% Caving potential	1.00 0.10

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
850: Lewisflat loam-----	85	Limitations AASHTO GI 5-8 (soil strength)	0.78	Limitations Caving potential	0.10
851: Lewisflat loam-----	80	Limitations Slopes > 15% AASHTO GI 5-8 (soil strength)	1.00 0.78	Limitations Slopes > 15% Caving potential	1.00 0.10
852: Lewisflat loam-----	75	Limitations Slopes > 15% AASHTO GI 5-8 (soil strength)	1.00 0.78	Limitations Slopes > 15% Caving potential	1.00 0.10
860: Toadtown gravelly loam-----	60	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Slopes 8 to 15%	1.00 1.00 0.01	Limitations Clay from 40 to 60% Caving potential Slopes 8 to 15%	0.50 0.10 0.01
Powellton silt loam-----	20	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6) Slopes 8 to 15%	1.00 0.78 0.01	Limitations Caving potential Slopes 8 to 15%	0.10 0.01
861: Toadtown gravelly loam-----	60	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Slopes > 15%	1.00 1.00 1.00	Limitations Slopes > 15% Clay from 40 to 60% Caving potential	1.00 0.50 0.10
Powellton silt loam-----	20	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6)	1.00 1.00 0.78	Limitations Slopes > 15% Caving potential	1.00 0.10
862: Toadtown gravelly loam-----	60	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Slopes > 15%	1.00 1.00 1.00	Limitations Slopes > 15% Clay from 40 to 60% Caving potential	1.00 0.50 0.10

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
862: Powellton silt loam-----	20	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6)	1.00 1.00 0.78	Limitations Slopes > 15% Caving potential	1.00 0.10
863: Toadtown gravelly loam-----	60	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Slopes > 15%	1.00 1.00 1.00	Limitations Slopes > 15% Clay from 40 to 60% Caving potential	1.00 0.50 0.10
Powellton silt loam-----	20	Limitations Slopes > 15% AASHTO GI >8 (low soil strength) Shrink-swell (LEP 3-6)	1.00 1.00 0.78	Limitations Slopes > 15% Caving potential	1.00 0.10
880: Sites taxadjunct gravelly loam----	50	Limitations Shrink-swell (LEP >6) AASHTO GI >8 (low soil strength) Slopes 8 to 15%	1.00 1.00 0.01	Limitations Caving potential Clay from 40 to 60% Slopes 8 to 15%	1.00 0.88 0.01
Jocal taxadjunct gravelly loam----	35	Limitations Slopes 8 to 15%	0.01	Limitations Caving potential Slopes 8 to 15%	1.00 0.01
881: Sites taxadjunct gravelly loam----	50	Limitations Slopes > 15% Shrink-swell (LEP >6) AASHTO GI >8 (low soil strength)	1.00 1.00 1.00	Limitations Slopes > 15% Caving potential Clay from 40 to 60%	1.00 1.00 0.88
Jocal taxadjunct gravelly loam----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
882: Sites taxadjunct gravelly loam----	50	Limitations Slopes > 15% Shrink-swell (LEP >6) AASHTO GI >8 (low soil strength)	1.00 1.00 1.00	Limitations Slopes > 15% Caving potential Clay from 40 to 60%	1.00 1.00 0.88

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
882: Jocal taxadjunct gravelly loam----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
883: Sites taxadjunct gravelly loam----	50	Limitations Slopes > 15% Shrink-swell (LEP >6) AASHTO GI >8 (low soil strength)	1.00 1.00 1.00	Limitations Slopes > 15% Caving potential Clay from 40 to 60%	1.00 1.00 0.88
Jocal taxadjunct gravelly loam----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
885: Rogerville silt loam-----	75	Limitations Shrink-swell (LEP >6) AASHTO GI >8 (low soil strength) Slopes 8 to 15%	1.00 1.00 0.01	Limitations Caving potential Slopes 8 to 15%	1.00 0.01
886: Rogerville silt loam-----	80	Limitations Slopes > 15% Shrink-swell (LEP >6) AASHTO GI >8 (low soil strength)	1.00 1.00 1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
892: Rogerville silt loam-----	85	Limitations Slopes > 15% Shrink-swell (LEP >6) AASHTO GI >8 (low soil strength)	1.00 1.00 1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
893: Rogerville silt loam-----	85	Limitations Slopes > 15% Shrink-swell (LEP >6) AASHTO GI >8 (low soil strength)	1.00 1.00 1.00	Limitations Slopes > 15% Caving potential	1.00 1.00

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
902:					
Lava flows, Lovejoy basalt-----	50	Not rated		Not rated	
Lumpkin gravelly medial sandy loam	40	Limitations		Limitations	
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
				Caving potential	0.10
903:					
Mudwash gravelly medial sandy loam	45	Limitations		Limitations	
		Slopes 8 to 15%	0.01	Caving potential	1.00
				Slopes 8 to 15%	0.01
Timberisland very gravelly medial sandy loam-----	25	Limitations		Limitations	
		Slopes > 15%	1.00	Caving potential	1.00
		Fragments (>3") 25 to 50%	0.05	Slopes > 15%	1.00
				Bedrock (hard) from 40 to 60"	0.61
Lavatop gravelly medial fine sandy loam-----	20	Limitations		Limitations	
		Bedrock (hard) from 20 to 40"	0.82	Bedrock (hard) < 40" depth	1.00
		Fragments (>3") 25 to 50%	0.01	Caving potential	1.00
		Slopes 8 to 15%	0.01	Fragments (>3") 25 to 50%	0.01
904:					
Lava flows, Lovejoy basalt-----	60	Not rated		Not rated	
Lavatop gravelly medial fine sandy loam-----	20	Limitations		Limitations	
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00
		Bedrock (hard) from 20 to 40"	0.82	Slopes > 15%	1.00
		Fragments (>3") 25 to 50%	0.01	Caving potential	1.00
905:					
Lava flows, Lovejoy basalt-----	60	Not rated		Not rated	
Lumpkin gravelly medial sandy loam-----	30	Limitations		Limitations	
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
906: Lava flows, Lovejoy basalt-----	60	Not rated		Not rated	
Lumpkin gravelly medial sandy loam	30	Limitations Bedrock (hard) < 20" depth Slopes > 15% Fragments (>3") >50%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 15% Fragments (>3") >50%	1.00 1.00 1.00
911: Endoquolls loam-----	75	Limitations AASHTO GI >8 (low soil strength) Saturation < 12" depth Frequent or occasional flooding	1.00 1.00 1.00	Limitations Saturation < 2.5' depth Frequent or occasional flooding Caving potential	1.00 0.50 0.10
923: Powderhouse medial sandy loam-----	45	Limitations Slopes 8 to 15%	0.01	Limitations Caving potential Bedrock (soft) from 20 to 40" Slopes 8 to 15%	1.00 0.06 0.01
McNair medial coarse sandy loam---	25	Limitations Slopes 8 to 15%	0.01	Limitations Caving potential Slopes 8 to 15%	1.00 0.01
Greenwell medial sandy loam-----	20	Limitations Slopes 8 to 15%	0.01	Limitations Caving potential Bedrock (soft) from 20 to 40" Slopes 8 to 15%	1.00 0.26 0.01
924: Powderhouse medial sandy loam-----	45	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential Bedrock (soft) from 20 to 40"	1.00 1.00 0.06
McNair medial coarse sandy loam---	25	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
Greenwell medial sandy loam-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential Bedrock (soft) from 20 to 40"	1.00 1.00 0.26

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
925:					
Powderhouse medial sandy loam-----	45	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential Bedrock (soft) from 20 to 40"	1.00 1.00 0.06
McNair medial coarse sandy loam---	25	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
Greenwell medial sandy loam-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential Bedrock (soft) from 20 to 40"	1.00 1.00 0.26
930:					
Shakeridge gravelly medial coarse sandy loam-----	50	Limitations Slopes 8 to 15%	0.01	Limitations Caving potential Slopes 8 to 15%	1.00 0.01
Timberisland very gravelly medial sandy loam-----	40	Limitations Fragments (>3") 25 to 50% Slopes 8 to 15%	0.05 0.01	Limitations Caving potential Bedrock (hard) from 40 to 60" Fragments (>3") 25 to 50%	1.00 0.61 0.05
931:					
Shakeridge gravelly medial coarse sandy loam-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
Mudwash gravelly medial sandy loam-----	25	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
Timberisland very gravelly medial sandy loam-----	15	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.05	Limitations Slopes > 15% Caving potential Bedrock (hard) from 40 to 60"	1.00 1.00 0.61

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
932:					
Shakeridge gravelly medial coarse sandy loam-----	50	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
Mudwash gravelly medial sandy loam-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
933:					
Shakeridge gravelly medial coarse sandy loam-----	80	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
934:					
Mudwash gravelly medial sandy loam-----	80	Limitations Slopes 8 to 15%	0.01	Limitations Caving potential Slopes 8 to 15%	1.00 0.01
939:					
Fluvaquentic Humaquepts very fine sandy loam-----	85	Limitations AASHTO GI >8 (low soil strength) Saturation from 12 to 30" depth Rare flooding	1.00 0.94 0.50	Limitations Saturation < 2.5' depth Caving potential	1.00 1.00
940:					
Dejonah gravelly loam-----	50	Limitations AASHTO GI >8 (low soil strength) Slopes 8 to 15%	1.00 0.01	Limitations Caving potential Slopes 8 to 15%	0.10 0.01
Stagpoint loam-----	30	Limitations Fragments (>3") 25 to 50% Slopes 8 to 15%	0.46 0.01	Limitations Caving potential Fragments (>3") 25 to 50% Slopes 8 to 15%	1.00 0.46 0.01

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
941:					
Dejonah gravelly loam-----	50	Limitations Slopes > 15% AASHTO GI >8 (low soil strength)	1.00 1.00	Limitations Slopes > 15% Caving potential	1.00 0.10
Stagpoint loam-----	30	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.46	Limitations Slopes > 15% Caving potential Fragments (>3") 25 to 50%	1.00 1.00 0.46
942:					
Stagpoint loam-----	50	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.46	Limitations Slopes > 15% Caving potential Fragments (>3") 25 to 50%	1.00 1.00 0.46
Dejonah gravelly loam-----	30	Limitations Slopes > 15% AASHTO GI >8 (low soil strength)	1.00 1.00	Limitations Slopes > 15% Caving potential	1.00 0.10
948:					
Stagpoint loam-----	55	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.46	Limitations Slopes > 15% Caving potential Fragments (>3") 25 to 50%	1.00 1.00 0.46
Dejonah gravelly loam-----	35	Limitations Slopes > 15% AASHTO GI >8 (low soil strength)	1.00 1.00	Limitations Slopes > 15% Caving potential	1.00 0.10
949:					
Rogerville taxadjunct fine sandy loam-----	80	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
950:					
Lumpkin taxadjunct very gravelly medial very fine sandy loam-----	40	Limitations Bedrock (hard) < 20" depth Slopes 8 to 15%	1.00 0.01	Limitations Bedrock (hard) < 40" depth Caving potential Slopes 8 to 15%	1.00 0.10 0.01

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
950: Rock outcrop, olivine basalt, andesite, or mudflow-----	25	Not rated		Not rated	
Powderhouse medial sandy loam----	20	Limitations Slopes 8 to 15%	0.01	Limitations Caving potential Bedrock (soft) from 20 to 40" Slopes 8 to 15%	1.00 0.06 0.01
951: Lumpkin taxadjunct very gravelly medial very fine sandy loam-----	40	Limitations Bedrock (hard) < 20" depth Slopes > 15%	1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 0.10
Rock outcrop, andesite-----	25	Not rated		Not rated	
Powderhouse medial sandy loam----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential Bedrock (soft) from 20 to 40"	1.00 1.00 0.06
960: Surnuf gravelly loam, high elevation-----	85	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)	1.00 1.00	Limitations Caving potential Clay > 60%	1.00 1.00
961: Surnuf gravelly loam, high elevation-----	85	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Slopes 8 to 15%	1.00 1.00 0.37	Limitations Caving potential Clay > 60% Slopes 8 to 15%	1.00 1.00 0.37
962: Surnuf gravelly loam, high elevation-----	85	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Slopes > 15%	1.00 1.00 1.00	Limitations Slopes > 15% Caving potential Clay > 60%	1.00 1.00 1.00

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
963: Surnuf gravelly loam, high elevation-----	85	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Slopes > 15%	 1.00 1.00 1.00	Limitations Slopes > 15% Caving potential Clay > 60%	 1.00 1.00 1.00
990: Riverwash, frequently flooded----	100	Limitations Frequent or occasional flooding Saturation < 12" depth	 1.00 0.99	Limitations Saturation < 2.5' depth Frequent or occasional flooding Caving potential	 1.00 0.50 0.10
991: Xerofluvents sandy loam, frequently flooded-----	75	Limitations Frequent or occasional flooding Saturation from 12 to 30" depth	 1.00 0.02	Limitations Saturation < 2.5' depth Caving potential Frequent or occasional flooding	 1.00 1.00 0.50
995: Pits, gravel-----	100	Not rated		Not rated	
996: Dumps, excavated material-----	100	Not rated		Not rated	
997: Pits-----	95	Not rated		Not rated	
998: Dumps, landfill-----	100	Not rated		Not rated	
999: Water-----	100	Not rated		Not rated	

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitations	Value	Limitations	Value
DAM: Dam, manmade-----	100	Not rated		Not rated	

The interpretation for local roads and streets evaluates the following soil properties at variable depths in the soil: flooding, ponding, wetness, slope, organic Unified classes for low soil strength (PT, OL, and OH), amount of clay, depth to hard or soft bedrock, depth to a thick or thin cemented pan, fragments more than 3 inches in size, bulk density, and the caving potential of the soil.

The interpretation for shallow excavations evaluates the following soil properties at variable depths in the soil: flooding, ponding, wetness, slope, subsidence of organic soils, shrink-swell potential expressed as linear extensibility percent (LEP), potential for frost action, depth to hard or soft bedrock, depth to a thick or thin cemented pan, fragments more than 3 inches in size, and soil strength expressed as the AASHTO group index number (AASHTO GI).

Table 17a.--Sanitary Facilities

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The rating is based on the limitation with the highest value. Only the three highest value limitations are listed. There may be more limitations. Fine-earth fractions and rock fragments are reported on a weight basis. An explanation of the rating criteria and of the abbreviations used in describing the limitations is given at the end of the table)

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
100: Anita clay-----	60	Limitations Flooding Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00
Galt clay-----	25	Limitations Flooding Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00
104: Bosquejo clay-----	85	Limitations Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration) Saturation < 4' depth	1.00 1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Rare flooding	1.00 1.00 0.50
105: Busacca clay loam-----	85	Limitations Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration) Saturation from 4 to 6' depth	1.00 1.00 1.00 0.97	Limitations Ponding (any duration) Saturation from 3.5 to 5' depth Rare flooding	1.00 0.52 0.50
108: Tuscan gravelly loam-----	45	Limitations Depth to pan < 40" Saturation < 4' depth Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Depth to pan < 40"	1.00 1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
108:					
Igo gravelly loam-----	20	Limitations		Limitations	
		Depth to pan < 40"	1.00	Saturation at < 3.5' depth	1.00
		Saturation < 4' depth	1.00	Depth to pan < 40"	1.00
		Restricted permeability due to bedrock or hardpan	1.00		
Anita clay-----	15	Limitations		Limitations	
		Ponding (any duration)	1.00	Saturation at < 3.5' depth	1.00
		Depth to pan < 40"	1.00	Ponding (any duration)	1.00
		Saturation < 4' depth	1.00	Depth to pan < 40"	1.00
109:					
Bosquejo clay loam-----	85	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5' depth	1.00
		Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Saturation < 4' depth	1.00	Rare flooding	0.50
110:					
Bosquejo silt loam, overwash, occasionally flooded-----	90	Limitations		Limitations	
		Flooding	1.00	Saturation at < 3.5' depth	1.00
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Ponding (any duration)	1.00
		Ponding (any duration)	1.00	Frequent or occasional flooding	1.00
111yu:					
Auburn loam-----	40	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%	1.00
		Slopes 8 to 15%	0.63	Permeability .6-2"/hr (some seepage)	0.50
Sobrante loam-----	40	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes 8 to 15%	0.63	Bedrock (soft) < 40" depth	1.00
		Permeability from .6 to 2"/hr (slow perc)	0.50	Slopes > 8%	1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
114yu: Auburn gravelly loam-----	40	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes 8 to 15%	1.00 1.00 0.63	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Sobrante gravelly loam-----	40	Limitations Depth to bedrock < 40" Slopes 8 to 15% Permeability from .6 to 2"/hr (slow perc)	1.00 0.63 0.50	Limitations Bedrock (soft) < 40" depth Slopes > 8% Bedrock (hard) < 40" depth	1.00 1.00 0.99
118: Xerorthents, tailings-----	80	Limitations Flooding Seepage in bottom layer Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00 1.00 1.00	Limitations Frequent or occasional flooding Permeability > 2"/hr (seepage) Slopes 2 to 8%	1.00 1.00 0.17
118co: Clear Lake clay, frequently flooded-----	90	Limitations Flooding Permeability < .6"/hr in 24-60" (slow perc) Saturation < 4' depth	1.00 1.00 0.99	Limitations Frequent or occasional flooding Saturation from 3.5 to 5' depth	1.00 0.71
119: Xerorthents, tailings-----	70	Limitations Flooding Seepage in bottom layer Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00 1.00 1.00	Limitations Frequent or occasional flooding Permeability > 2"/hr (seepage)	1.00 1.00
Urban land-----	30	Not rated		Not rated	
119yu: Auburn gravelly loam-----	30	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
119yu: Sobrante gravelly loam-----	30	Limitations Depth to bedrock < 40" Slopes > 15% Permeability from .6 to 2"/hr (slow perc)	1.00 1.00 0.50	Limitations Bedrock (soft) < 40" depth Slopes > 8% Bedrock (hard) < 40" depth	1.00 1.00 0.99
Rock outcrop-----	20	Not rated		Not rated	
120: Gridley taxadjunct clay loam-----	80	Limitations Ponding (any duration) Depth to pan < 40" Saturation < 4' depth	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00
121: Boga loam-----	45	Limitations Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration) Saturation < 4' depth	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Permeability .6-2"/hr (some seepage)	1.00 1.00 0.01
Loemstone loam-----	40	Limitations Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration) Saturation < 4' depth	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Permeability .6-2"/hr (some seepage)	1.00 1.00 0.02
121su: Columbia fine sandy loam, frequently flooded-----	80	Limitations Flooding Seepage in bottom layer Saturation < 4' depth	1.00 1.00 0.99	Limitations Frequent or occasional flooding Permeability > 2"/hr (seepage) Saturation from 3.5 to 5' depth	1.00 1.00 0.50
125: Gridley taxadjunct loam-----	65	Limitations Ponding (any duration) Depth to pan < 40" Saturation < 4' depth	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
125: Calcic Haploxerolls sandy loam----	20	Limitations Permeability < .6"/hr in 24-60" (slow perc) Saturation < 4' depth Rare flooding	1.00 1.00 0.40	Limitations Saturation at < 3.5' depth Permeability > 2"/hr (seepage) Rare flooding	1.00 1.00 0.50
126: Liveoak sandy loam-----	85	Limitations Saturation < 4' depth Seepage in bottom layer Very rare flooding	1.00 1.00 0.20	Limitations Permeability > 2"/hr (seepage) Saturation from 3.5 to 5' depth	1.00 0.98
127: Gridley taxadjunct loam-----	85	Limitations Ponding (any duration) Depth to pan < 40" Saturation < 4' depth	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00
130: Eastbiggs loam-----	80	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to pan < 40" Saturation < 4' depth	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Depth to pan < 40" Permeability .6-2"/hr (some seepage)	1.00 1.00 0.08
133: Eastbiggs loam-----	50	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to pan < 40" Saturation < 4' depth	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Depth to pan < 40" Permeability .6-2"/hr (some seepage)	1.00 1.00 0.08
Galt clay loam-----	40	Limitations Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
136:					
Duric Xerarents, cut-----	35	Limitations		Limitations	
		Ponding (any duration)	1.00	Saturation at < 3.5' depth	1.00
		Depth to pan < 40"	1.00	Ponding (any duration)	1.00
		Saturation < 4' depth	1.00	Depth to pan < 40"	1.00
Duric Xerarents, fill-----	30	Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Saturation < 4' depth	1.00	Permeability > 2"/hr (seepage)	1.00
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation from 3.5 to 5' depth	0.98
Eastbiggs fine sandy loam, leveled-----	25	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5' depth	1.00
		Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Depth to pan < 40"	1.00	Depth to pan < 40"	1.00
138su:					
Liveoak sandy clay loam-----	85	Limitations		Limitations	
		Saturation < 4' depth	1.00	Saturation at < 3.5' depth	1.00
		Very rare flooding	0.20	Permeability > 2"/hr (seepage)	0.99
		Permeability from .6 to 2"/hr (slow perc)	0.18		
139su:					
Liveoak taxadjunct loam, frequently flooded-----	45	Limitations		Limitations	
		Flooding	1.00	Frequent or occasional flooding	1.00
		Saturation from 4 to 6' depth	0.94	Permeability .6-2"/hr (some seepage)	0.50
		Depth to pan 40 to 72"	0.59	Saturation from 3.5 to 5' depth	0.39
Galt taxadjunct clay loam, frequently flooded-----	40	Limitations		Limitations	
		Flooding	1.00	Saturation at < 3.5' depth	1.00
		Depth to pan < 40"	1.00	Depth to pan < 40"	1.00
		Saturation < 4' depth	1.00	Frequent or occasional flooding	1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
143su: Marcum clay loam-----	45	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72"	1.00 0.98	Limitations Bedrock (soft) from 40 to 60"	0.93
Gridley clay loam-----	40	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock < 40"	1.00 1.00	Limitations Bedrock (soft) < 40" depth	1.00
149yu: Flanly sandy loam-----	80	Limitations Depth to bedrock < 40" Permeability < .6"/hr in 24-60" (slow perc) Slopes 8 to 15%	1.00 1.00 0.63	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
150: Columbia stratified sand to fine sandy loam-----	85	Limitations Flooding Saturation < 4' depth Seepage in bottom layer	1.00 1.00 1.00	Limitations Frequent or occasional flooding Permeability > 2"/hr (seepage) Saturation from 3.5 to 5' depth	1.00 1.00 0.37
150su: Olashes sandy loam-----	85	Limitations Seepage in bottom layer Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00	Limitations Permeability > 2"/hr (seepage)	1.00
151yu: Flanly sandy loam-----	80	Limitations Depth to bedrock < 40" Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
152: Gianella fine sandy loam, frequently flooded-----	85	Limitations Flooding Seepage in bottom layer Permeability from .6 to 2"/hr (slow perc)	1.00 1.00 0.68	Limitations Frequent or occasional flooding Permeability > 2"/hr (seepage)	1.00 1.00
153: Gianella sandy loam, frequently flooded-----	85	Limitations Flooding Seepage in bottom layer	1.00 1.00	Limitations Frequent or occasional flooding Permeability > 2"/hr (seepage)	1.00 1.00
154: Gianella silt loam, frequently flooded-----	85	Limitations Flooding Seepage in bottom layer Permeability from .6 to 2"/hr (slow perc)	1.00 1.00 0.68	Limitations Frequent or occasional flooding Permeability > 2"/hr (seepage)	1.00 1.00
158: Gianella fine sandy loam, occasionally flooded-----	85	Limitations Flooding Seepage in bottom layer	1.00 1.00	Limitations Frequent or occasional flooding Permeability > 2"/hr (seepage)	1.00 1.00
160: Gianella loam, occasionally flooded-----	85	Limitations Flooding Seepage in bottom layer	1.00 1.00	Limitations Frequent or occasional flooding Permeability > 2"/hr (seepage)	1.00 1.00
161: Gianella fine sandy loam, rarely flooded-----	90	Limitations Seepage in bottom layer Rare flooding	1.00 0.40	Limitations Permeability > 2"/hr (seepage) Rare flooding	1.00 0.50

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
162: Gianella loam, rarely flooded-----	90	Limitations Seepage in bottom layer Rare flooding	1.00 0.40	Limitations Permeability > 2"/hr (seepage) Rare flooding	1.00 0.50
163yu: Holillipah loamy sand-----	85	Limitations Flooding Seepage in bottom layer	1.00 1.00	Limitations Frequent or occasional flooding Permeability > 2"/hr (seepage)	1.00 1.00
165yu: Holland loam-----	40	Limitations Slopes > 15% Permeability from .6 to 2"/hr (slow perc)	1.00 0.50	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.50
Hoda loam-----	25	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15%	1.00 1.00	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.50
Hotaw loam-----	20	Limitations Depth to bedrock < 40" Slopes > 15% Permeability from .6 to 2"/hr (slow perc)	1.00 1.00 0.50	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
173yu: Hotaw loam-----	45	Limitations Depth to bedrock < 40" Slopes > 15% Permeability from .6 to 2"/hr (slow perc)	1.00 1.00 0.50	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Chawanakee gravelly sandy loam----	20	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
173yu: Holland loam-----	15	Limitations Slopes > 15% Permeability from .6 to 2"/hr (slow perc)	1.00 0.50	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.50
175: Farwell clay loam, rarely flooded	85	Limitations Permeability < .6"/hr in 24-60" (slow perc) Rare flooding	1.00 0.40	Limitations Rare flooding Permeability .6-2"/hr (some seepage)	0.50 0.01
176: Farwell loam, occasionally flooded-----	85	Limitations Flooding Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00	Limitations Frequent or occasional flooding Permeability .6-2"/hr (some seepage)	1.00 0.92
176yu: Jocal loam-----	80	Limitations Slopes 8 to 15% Permeability from .6 to 2"/hr (slow perc)	0.63 0.50	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.50
177: Farwell silt loam, occasionally flooded-----	85	Limitations Flooding Seepage in bottom layer	1.00 1.00	Limitations Frequent or occasional flooding Permeability > 2"/hr (seepage)	1.00 1.00
178: Arbuckle gravelly loam-----	87	Limitations Permeability from .6 to 2"/hr (slow perc) Rare flooding	0.92 0.40	Limitations Permeability .6-2"/hr (some seepage) Rare flooding	0.68 0.50
179: Moda taxadjunct loam-----	65	Limitations Ponding (any duration) Depth to pan < 40" Saturation < 4' depth	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
179: Arbuckle gravelly loam-----	20	Limitations		Limitations	
		Permeability from .6 to 2"/hr (slow perc)	0.92	Permeability .6-2"/hr (some seepage)	0.68
		Rare flooding	0.40	Rare flooding	0.50
180: Dodgeland silty clay loam, occasionally flooded-----	85	Limitations		Limitations	
		Flooding	1.00	Saturation at < 3.5' depth	1.00
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Ponding (any duration)	1.00
		Ponding (any duration)	1.00	Frequent or occasional flooding	1.00
181: Dodgeland silty clay loam, frequently flooded-----	80	Limitations		Limitations	
		Flooding	1.00	Saturation at < 3.5' depth	1.00
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Ponding (any duration)	1.00
		Ponding (any duration)	1.00	Frequent or occasional flooding	1.00
188yu: Mariposa taxadjunct gravelly loam	80	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Restricted permeability due to bedrock or hardpan	1.00	Permeability .6-2"/hr (some seepage)	0.50
189: Esquon silt loam, overwash-----	90	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5' depth	1.00
		Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Saturation < 4' depth	1.00	Permeability > 2"/hr (seepage)	1.00
189yu: Mariposa taxadjunct gravelly loam	80	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Restricted permeability due to bedrock or hardpan	1.00	Permeability .6-2"/hr (some seepage)	0.50

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
196yu: Mildred cobbly loam-----	80	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8%	1.00 1.00
200: Parrott silt loam, occasionally flooded-----	85	Limitations Flooding Ponding (any duration) Seepage in bottom layer	1.00 1.00 1.00	Limitations Ponding (any duration) Frequent or occasional flooding Permeability .6-2"/hr (some seepage)	1.00 1.00 0.98
201: Parrott silt loam, frequently flooded-----	85	Limitations Flooding Ponding (any duration) Seepage in bottom layer	1.00 1.00 1.00	Limitations Ponding (any duration) Frequent or occasional flooding Permeability .6-2"/hr (some seepage)	1.00 1.00 0.98
203: Kusalslough silty clay loam, occasionally flooded-----	85	Limitations Flooding Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Frequent or occasional flooding	1.00 1.00 1.00
205: Parrott silt loam, frequently flooded-----	50	Limitations Flooding Ponding (any duration) Seepage in bottom layer	1.00 1.00 1.00	Limitations Ponding (any duration) Frequent or occasional flooding Permeability .6-2"/hr (some seepage)	1.00 1.00 0.98

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
205: Vermet silt loam, frequently flooded-----	35	Limitations Flooding Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Frequent or occasional flooding	1.00 1.00 1.00
206: Islandbar sandy loam-----	60	Limitations Seepage in bottom layer Slopes 8 to 15%	1.00 0.01	Limitations Permeability > 2"/hr (seepage) Slopes > 8%	1.00 1.00
Chawanakee gravelly sandy loam----	30	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Permeability > 2"/hr (seepage) Slopes > 8%	1.00 1.00 1.00
207: Islandbar sandy loam-----	60	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
Chawanakee gravelly sandy loam----	30	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
208: Islandbar sandy loam-----	60	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
Chawanakee gravelly sandy loam----	30	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
209:					
Islandbar sandy loam-----	60	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
Chawanakee gravelly sandy loam----	30	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
210:					
Featherfalls sandy loam-----	50	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes 8 to 15%	1.00 0.01	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.68
Islandbar sandy loam-----	35	Limitations Seepage in bottom layer Slopes 8 to 15%	1.00 0.01	Limitations Permeability > 2"/hr (seepage) Slopes > 8%	1.00 1.00
211:					
Featherfalls sandy loam-----	55	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.68
Islandbar sandy loam-----	35	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
212:					
Featherfalls sandy loam-----	55	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.68
Islandbar sandy loam-----	35	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
213:					
Featherfalls sandy loam-----	45	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability .6-2"/hr (some seepage)	0.68
Islandbar sandy loam-----	35	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
214:					
Crystalhill gravelly coarse sandy loam-----	35	Limitations		Limitations	
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Slopes 8 to 15%	0.16	Slopes > 8%	1.00
		Depth to bedrock 40 - 72"	0.06		
Oregongulch gravelly sandy loam---	20	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) < 40" depth	1.00
		Depth to bedrock < 40"	1.00	Permeability > 2"/hr (seepage)	1.00
		Seepage in bottom layer	1.00	Slopes > 8%	1.00
Craigsaddle coarse sandy loam-----	20	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability > 2"/hr (seepage)	1.00
		Depth to bedrock 40 - 72"	0.36	Slopes 2 to 8%	0.83
				Bedrock (soft) from 40 to 60"	0.01
Rock outcrop, trondhemite-----	10	Not rated		Not rated	
215:					
Crystalhill gravelly coarse sandy loam-----	35	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Depth to bedrock 40 - 72"	0.06		
Oregongulch gravelly sandy loam---	20	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) < 40" depth	1.00
		Depth to bedrock < 40"	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Permeability > 2"/hr (seepage)	1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
215:					
Craigsaddle coarse sandy loam-----	20	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Permeability > 2"/hr (seepage)	1.00
		Depth to bedrock 40 - 72"	0.36	Bedrock (soft) from 40 to 60"	0.01
Rock outcrop, trondhemite-----	10	Not rated		Not rated	
216:					
Crystalhill gravelly coarse sandy loam-----	35	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Depth to bedrock 40 - 72"	0.06		
Oregongulch gravelly sandy loam---	20	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) < 40" depth	1.00
		Depth to bedrock < 40"	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Permeability > 2"/hr (seepage)	1.00
Craigsaddle coarse sandy loam-----	20	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Permeability > 2"/hr (seepage)	1.00
		Depth to bedrock 40 - 72"	0.36	Bedrock (soft) from 40 to 60"	0.01
Rock outcrop, trondhemite-----	10	Not rated		Not rated	
217:					
Crystalhill gravelly coarse sandy loam-----	35	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Depth to bedrock 40 - 72"	0.06		
Oregongulch gravelly sandy loam---	20	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) < 40" depth	1.00
		Depth to bedrock < 40"	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Permeability > 2"/hr (seepage)	1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
217:					
Craigsaddle coarse sandy loam-----	20	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Permeability > 2"/hr (seepage)	1.00
		Depth to bedrock 40 - 72"	0.36	Bedrock (soft) from 40 to 60"	0.01
Rock outcrop, trondhjemite-----	10	Not rated		Not rated	
218:					
Rock outcrop, quartz diorite-----	60	Not rated		Not rated	
Lithic Xerorthents gravelly sandy loam-----	20	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00		
Chawanakee gravelly sandy loam----	15	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
219:					
Rock outcrop, quartz diorite-----	60	Not rated		Not rated	
Lithic Xerorthents gravelly sandy loam-----	20	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Restricted permeability due to bedrock or hardpan	1.00		
Chawanakee gravelly sandy loam----	15	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Restricted permeability due to bedrock or hardpan	1.00	Permeability > 2"/hr (seepage)	1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
220: Esquon clay, frequently flooded---	60	Limitations Flooding Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Frequent or occasional flooding	1.00 1.00 1.00
Clear Lake silty clay loam, overwash-----	30	Limitations Flooding Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Frequent or occasional flooding	1.00 1.00 1.00
221yu: Sites loam-----	85	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72"	1.00 0.22	Limitations Slopes 2 to 8% Permeability .6-2"/hr (some seepage)	0.67 0.50
222yu: Sites loam-----	85	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes 8 to 15% Depth to bedrock 40 - 72"	1.00 0.63 0.22	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.50
225yu: Sites gravelly loam, bedrock substratum-----	80	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72"	1.00 0.63	Limitations Slopes 2 to 8% Bedrock (soft) from 40 to 60"	0.67 0.18
226yu: Sites gravelly loam, bedrock substratum-----	80	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72" Slopes 8 to 15%	1.00 0.63 0.63	Limitations Slopes > 8% Bedrock (soft) from 40 to 60"	1.00 0.18

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
227yu: Sites gravelly loam, bedrock substratum-----	80	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72"	1.00 1.00 0.63	Limitations Slopes > 8% Bedrock (soft) from 40 to 60"	1.00 0.18
242yu: Surnuf loam-----	80	Limitations Slopes 8 to 15%	0.63	Limitations Slopes > 8%	1.00
243yu: Surnuf loam-----	80	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
244yu: Surnuf loam-----	80	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
245: Surnuf loam-----	80	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
248yu: Trainer loam-----	85	Limitations Flooding Seepage in bottom layer Saturation < 4' depth	1.00 1.00 0.99	Limitations Frequent or occasional flooding Permeability > 2"/hr (seepage) Saturation from 3.5 to 5' depth	1.00 1.00 0.50
250: Llanoseco, occasionally flooded---	90	Limitations Flooding Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Frequent or occasional flooding	1.00 1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
252: Whitecabin silty clay, occasionally flooded-----	60	Limitations Flooding Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Frequent or occasional flooding	1.00 1.00 1.00
Ordferry silty clay, occasionally flooded-----	25	Limitations Flooding Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00
252yu: Woodleaf gravelly loam-----	80	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock < 40" Slopes 8 to 15%	1.00 1.00 1.00 0.04	Limitations Bedrock (hard) < 40" depth Slopes > 8% Fragments (>3") 20-35%	1.00 1.00 0.26
253yu: Woodleaf gravelly loam-----	80	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Fragments (>3") 20-35%	1.00 1.00 0.26
255: Whitecabin silty clay loam, occasionally flooded-----	60	Limitations Flooding Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Frequent or occasional flooding	1.00 1.00 1.00
Ordferry silty clay, occasionally flooded-----	30	Limitations Flooding Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
256: Whitecabin silt loam, occasionally flooded-----	85	Limitations Flooding Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Frequent or occasional flooding	1.00 1.00 1.00
257: Llanoseco, frequently flooded----	90	Limitations Flooding Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Frequent or occasional flooding	1.00 1.00
258: Codora, occasionally flooded-----	85	Limitations Flooding Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Frequent or occasional flooding	1.00 1.00 1.00
260: Ordferry silty clay, occasionally flooded-----	90	Limitations Flooding Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00
280: Columbia taxadjunct stratified very fine sandy loam-----	80	Limitations Flooding Saturation < 4' depth Seepage in bottom layer	1.00 1.00 1.00	Limitations Frequent or occasional flooding Permeability > 2"/hr (seepage) Saturation from 3.5 to 5' depth	1.00 1.00 0.91
290: Perkins gravelly loam-----	90	Limitations Seepage in bottom layer Saturation from 4 to 6' depth Permeability from .6 to 2"/hr (slow perc)	1.00 0.12 0.08	Limitations Permeability > 2"/hr (seepage)	1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
300: Redsluff gravelly loam-----	80	Limitations		Limitations	
		Saturation < 4' depth	1.00	Permeability > 2"/hr (seepage)	1.00
		Seepage in bottom layer	1.00	Rare flooding	0.50
		Permeability from .6 to 2"/hr (slow perc)	0.82		
301: Wafap gravelly loam-----	70	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5' depth	1.00
		Saturation < 4' depth	1.00	Fragments (>3") > 35%	1.00
		Fragments (>3") >50%	1.00	Depth to pan from 40-60"	0.77
Hamslough clay-----	15	Limitations		Limitations	
		Flooding	1.00	Saturation at < 3.5' depth	1.00
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Ponding (any duration)	1.00
		Ponding (any duration)	1.00	Depth to pan < 40"	1.00
302: Redtough loam-----	50	Limitations		Limitations	
		Depth to pan < 40"	1.00	Saturation at < 3.5' depth	1.00
		Saturation < 4' depth	1.00	Depth to pan < 40"	1.00
		Restricted permeability due to bedrock or hardpan	1.00	Fragments (>3") 20-35%	0.07
Redswale cobbly loam-----	35	Limitations		Limitations	
		Ponding (any duration)	1.00	Saturation at < 3.5' depth	1.00
		Depth to pan < 40"	1.00	Ponding (any duration)	1.00
		Saturation < 4' depth	1.00	Depth to pan < 40"	1.00
303: Munjar gravelly loam-----	60	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5' depth	1.00
		Depth to pan < 40"	1.00	Depth to pan < 40"	1.00
		Saturation < 4' depth	1.00	Permeability .6-2"/hr (some seepage)	0.68

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
303: Tuscan taxadjunct gravelly clay loam-----	20	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to pan < 40" Saturation < 4' depth	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Depth to pan < 40"	1.00 1.00
Galt clay-----	10	Limitations Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00
304: Redtough loam-----	80	Limitations Depth to pan < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Depth to pan < 40" Slopes > 8% Fragments (>3") 20-35%	1.00 1.00 0.07
305: Redtough gravelly loam-----	45	Limitations Depth to pan < 40" Saturation < 4' depth Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Depth to pan < 40" Permeability .6-2"/hr (some seepage)	1.00 1.00 0.01
Redswale loam-----	25	Limitations Ponding (any duration) Depth to pan < 40" Saturation < 4' depth	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00
Anita, gravelly duripan-----	20	Limitations Ponding (any duration) Depth to pan < 40" Saturation < 4' depth	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
306:					
Duric Xerarents, fill-----	50	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Ponding (any duration)	1.00
		Ponding (any duration)	1.00	Saturation at < 3.5' depth	1.00
		Saturation < 4' depth	1.00	Permeability > 2"/hr (seepage)	0.99
Duric Xerarents, cut-----	40	Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Depth to pan < 40"	1.00	Depth to pan < 40"	1.00
		Saturation < 4' depth	1.00	Permeability > 2"/hr (seepage)	1.00
307:					
Duric Xerarents clay loam, leveled-----	70	Limitations		Limitations	
		Ponding (any duration)	1.00	Saturation at < 3.5' depth	1.00
		Depth to pan < 40"	1.00	Ponding (any duration)	1.00
		Saturation < 4' depth	1.00	Depth to pan < 40"	1.00
310:					
Kimball loam-----	85	No limitations		Limitations	
				Permeability .6-2"/hr (some seepage)	0.32
317:					
Thompsonflat loam-----	75	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes 2 to 8%	0.50
		Saturation from 4 to 6' depth	0.43	Permeability .6-2"/hr (some seepage)	0.32
318:					
Thompsonflat fine sandy loam-----	50	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes 2 to 8%	0.50
		Saturation from 4 to 6' depth	0.43		
Oroville gravelly fine sandy loam	40	Limitations		Limitations	
		Ponding (any duration)	1.00	Saturation at < 3.5' depth	1.00
		Depth to pan < 40"	1.00	Ponding (any duration)	1.00
		Saturation < 4' depth	1.00	Depth to pan < 40"	1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
320: Vistarobles sandy loam-----	50	Limitations Ponding (any duration) Depth to pan < 40" Saturation < 4' depth	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00
Redding loam-----	40	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to pan < 40" Saturation < 4' depth	1.00 1.00 1.00	Limitations Depth to pan < 40" Saturation at < 3.5' depth Permeability .6-2"/hr (some seepage)	1.00 1.00 0.68
321: Durixeralfs, fine-loamy, gravelly fine sandy loam-----	50	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to pan < 40" Saturation < 4' depth	1.00 1.00 1.00	Limitations Depth to pan < 40" Saturation at < 3.5' depth Bedrock (soft) from 40 to 60"	1.00 1.00 0.82
Durixeralfs, loamy-skeletal, gravelly fine sandy loam-----	20	Limitations Depth to bedrock < 40" Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00
Typic Petraquepts silty clay-----	15	Limitations Depth to bedrock < 40" Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Bedrock (soft) < 40" depth Ponding (any duration)	1.00 1.00 1.00
330: Wilsoncreek loam, occasionally flooded-----	60	Limitations Flooding Saturation from 4 to 6' depth Permeability from .6 to 2"/hr (slow perc)	1.00 0.97 0.08	Limitations Frequent or occasional flooding Permeability > 2"/hr (seepage) Saturation from 3.5 to 5' depth	1.00 1.00 0.52

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
330: Trainer loam, occasionally flooded-----	25	Limitations Flooding Saturation < 4' depth Seepage in bottom layer	1.00 1.00 1.00	Limitations Frequent or occasional flooding Permeability > 2"/hr (seepage) Saturation from 3.5 to 5' depth	1.00 1.00 0.91
331: Thompsonflat loam-----	85	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15% Saturation from 4 to 6' depth	1.00 1.00 1.00 0.43	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.32
335: Galt clay loam-----	85	Limitations Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00
336: Galt clay-----	90	Limitations Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00
337: Galt clay loam-----	85	Limitations Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00
338: Oxyaquic Xerofluvents silt loam---	90	Limitations Ponding (any duration) Saturation < 4' depth Rare flooding	1.00 1.00 0.40	Limitations Ponding (any duration) Permeability > 2"/hr (seepage) Rare flooding	1.00 1.00 0.50

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
339: Oxyaquic Xerofluvents sandy loam, frequently flooded-----	90	Limitations Flooding Ponding (any duration) Saturation < 4' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Frequent or occasional flooding Permeability > 2"/hr (seepage)	1.00 1.00 1.00
340: Rock outcrop, Lovejoy basalt-----	35	Not rated		Not rated	
Thermalrocks very gravelly loam---	25	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Bedrock (hard) < 40" depth Slopes 2 to 8% Fragments (>3") 20-35%	1.00 0.50 0.22
Campbellhills gravelly loam-----	20	Limitations Saturation < 4' depth Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72"	1.00 1.00 0.78	Limitations Saturation at < 3.5' depth Slopes 2 to 8% Bedrock (hard) from 40 to 60"	1.00 0.50 0.42
341: Elsej loam-----	25	Limitations Depth to bedrock < 40" Saturation < 4' depth Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00 0.99	Limitations Saturation at < 3.5' depth Bedrock (hard) < 40" depth Slopes 2 to 8%	1.00 1.00 0.17
Beatsonhollow gravelly loam-----	25	Limitations Depth to bedrock < 40" Ponding (any duration) Saturation < 4' depth	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Bedrock (hard) < 40" depth Ponding (any duration)	1.00 1.00 1.00
Campbellhills gravelly loam-----	20	Limitations Saturation < 4' depth Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72"	1.00 1.00 0.78	Limitations Saturation at < 3.5' depth Bedrock (hard) from 40 to 60"	1.00 0.42
Rock outcrop, Lovejoy basalt-----	20	Not rated		Not rated	

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
342:					
Thermalrocks very gravelly loam---	40	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Fragments (>3") 20-35%	0.22
Beatsonhollow taxadjunct fine sandy loam-----	35	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Saturation at < 3.5' depth	1.00
		Saturation < 4' depth	1.00	Bedrock (hard) < 40" depth	1.00
		Restricted permeability due to bedrock or hardpan	1.00	Permeability .6-2"/hr (some seepage)	0.32
Rock outcrop, Lovejoy basalt-----	15	Not rated		Not rated	
343:					
Coalcanyon very cobbly loam-----	50	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%	1.00
		Fragments (>3") >50%	0.99	Fragments (>3") > 35%	1.00
		Slopes 8 to 15%	0.16	Permeability .6-2"/hr (some seepage)	0.08
Coonhollow gravelly loam-----	35	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") > 35%	1.00
		Depth to bedrock 40 - 72"	0.94	Bedrock (soft) from 40 to 60"	0.84
344:					
Coalcanyon very cobbly loam-----	45	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Fragments (>3") > 35%	1.00
		Fragments (>3") >50%	0.99	Permeability .6-2"/hr (some seepage)	0.08
Coonhollow gravelly loam-----	30	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Fragments (>3") > 35%	1.00
		Fragments (>3") >50%	1.00	Bedrock (soft) from 40 to 60"	0.84
Rock outcrop, Lovejoy basalt-----	15	Not rated		Not rated	

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
346: Cherotable loam-----	50	Limitations Permeability < .6"/hr in 24-60" (slow perc) Saturation < 4' depth Depth to bedrock 40 - 72"	1.00 1.00 0.94	Limitations Saturation at < 3.5' depth Bedrock (hard) from 40 to 60" Slopes 2 to 8%	0.99 0.84 0.50
Elsely loam-----	35	Limitations Depth to bedrock < 40" Saturation < 4' depth Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00 0.99	Limitations Saturation at < 3.5' depth Bedrock (hard) < 40" depth Slopes 2 to 8%	1.00 1.00 0.50
347: Haplic Palexeralfs loam-----	90	Limitations Flooding Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00	Limitations Frequent or occasional flooding Slopes 2 to 8%	1.00 0.50
353: Cherokeespring gravelly silt loam	80	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes 8 to 15%	1.00 0.63	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.01
355: Coalcanyon very cobbly loam-----	55	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Fragments (>3") >50%	1.00 1.00 0.99	Limitations Slopes > 8% Fragments (>3") > 35% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.08
Talus-----	35	Not rated		Not rated	
356: Coalcanyon very cobbly loam-----	45	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Fragments (>3") >50%	1.00 1.00 0.99	Limitations Slopes > 8% Fragments (>3") > 35% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.08
Rock outcrop, basalt cliffs-----	20	Not rated		Not rated	

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
356: Talus-----	20	Not rated		Not rated	
Coonhollow gravelly loam-----	10	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Fragments (>3") > 35%	1.00
		Fragments (>3") >50%	1.00	Bedrock (soft) from 40 to 60"	0.84
360: Typic Xerofluvents, coarse-loamy--	45	Limitations		Limitations	
		Saturation < 4' depth	1.00	Permeability > 2"/hr (seepage)	1.00
		Seepage in bottom layer	1.00	Rare flooding	0.50
		Rare flooding	0.40		
Typic Xerofluvents, sandy-skeletal	40	Limitations		Limitations	
		Saturation < 4' depth	1.00	Permeability > 2"/hr (seepage)	1.00
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Rare flooding	0.50
		Seepage in bottom layer	1.00		
361: Typic Xerofluvents, sandy-skeletal	85	Limitations		Limitations	
		Saturation < 4' depth	1.00	Permeability > 2"/hr (seepage)	1.00
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Rare flooding	0.50
		Seepage in bottom layer	1.00		
362: Ultic Haploxeralfs, sandstone, low elevation, very deep-----	60	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability > 2"/hr (seepage)	1.00
		Seepage in bottom layer	1.00	Slopes 2 to 8%	0.17
Ultic Haploxeralfs, sandstone, low elevation, deep-----	25	Limitations		Limitations	
		Depth to bedrock 40 - 72"	0.99	Permeability > 2"/hr (seepage)	1.00
		Permeability from .6 to 2"/hr (slow perc)	0.32	Bedrock (soft) from 40 to 60"	0.99
				Slopes 2 to 8%	0.17

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
363: Ultic Haploxeralfs, sandstone, low elevation, very deep-----	60	Limitations Permeability < .6"/hr in 24-60" (slow perc) Seepage in bottom layer	1.00 1.00	Limitations Permeability > 2"/hr (seepage) Slopes 2 to 8%	1.00 0.50
Ultic Haploxeralfs, sandstone, low elevation, deep-----	30	Limitations Depth to bedrock 40 - 72" Slopes 8 to 15% Permeability from .6 to 2"/hr (slow perc)	0.99 0.63 0.32	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Bedrock (soft) from 40 to 60"	1.00 1.00 0.99
364: Ultic Haploxeralfs, sandstone, low elevation, deep-----	50	Limitations Slopes > 15% Depth to bedrock 40 - 72" Permeability from .6 to 2"/hr (slow perc)	1.00 0.99 0.32	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Bedrock (soft) from 40 to 60"	1.00 1.00 0.99
Ultic Haploxeralfs, sandstone, low elevation, very deep-----	40	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
365: Palexerults gravelly loam-----	80	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15% Depth to bedrock 40 - 72"	1.00 1.00 0.09	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.01
366: Palexerults gravelly loam-----	80	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15% Depth to bedrock 40 - 72"	1.00 1.00 0.09	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.01

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
370: Palexerults gravelly loam-----	80	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72"	1.00 0.09	Limitations Slopes 2 to 8% Permeability .6-2"/hr (some seepage)	0.83 0.01
375: Wicksorner loam-----	80	Limitations Permeability < .6"/hr in 24-60" (slow perc) Saturation from 4 to 6' depth	1.00 0.43	Limitations Slopes 2 to 8%	0.50
376: Flagcanyon gravelly loam-----	50	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to pan < 40" Saturation < 4' depth	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Depth to pan < 40" Slopes 2 to 8%	1.00 1.00 0.33
Wicksorner loam-----	35	Limitations Permeability < .6"/hr in 24-60" (slow perc) Saturation from 4 to 6' depth	1.00 0.43	Limitations Slopes 2 to 8%	0.17
377: Flagcanyon taxadjunct fine sandy loam-----	55	Limitations Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00
Durixeralfs, clayey-skeletal, loam	20	Limitations Ponding (any duration) Depth to pan < 40" Saturation < 4' depth	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00
Duraquerts gravelly clay-----	15	Limitations Ponding (any duration) Depth to pan < 40" Saturation < 4' depth	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
400: Subaco taxadjunct clay-----	85	Limitations Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00
415: Ignord fine sandy loam-----	90	Limitations Seepage in bottom layer Rare flooding	1.00 0.40	Limitations Permeability > 2"/hr (seepage) Rare flooding	1.00 0.50
416: Calcic Haploxerolls sandy loam---	90	Limitations Permeability < .6"/hr in 24-60" (slow perc) Saturation < 4' depth Rare flooding	1.00 1.00 0.40	Limitations Saturation at < 3.5' depth Permeability > 2"/hr (seepage) Rare flooding	1.00 1.00 0.50
418: Almendra loam-----	85	Limitations Permeability from .6 to 2"/hr (slow perc)	0.82	Limitations Permeability .6-2"/hr (some seepage)	0.68
419: Conejo fine sandy loam, overwash--	85	Limitations Permeability < .6"/hr in 24-60" (slow perc)	1.00	Limitations Permeability > 2"/hr (seepage)	1.00
420: Conejo clay loam-----	85	Limitations Permeability < .6"/hr in 24-60" (slow perc)	1.00	Limitations Permeability > 2"/hr (seepage)	0.99
425: Vina fine sandy loam-----	85	Limitations Seepage in bottom layer Rare flooding	1.00 0.40	Limitations Permeability > 2"/hr (seepage) Rare flooding	1.00 0.50
426: Vina loam-----	85	Limitations Permeability from .6 to 2"/hr (slow perc)	0.50	Limitations Permeability .6-2"/hr (some seepage)	0.92

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
439: Oxyaquic Xerofluvents clay-----	85	Limitations Flooding Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Frequent or occasional flooding	1.00 1.00 1.00
440: Oxyaquic Xerofluvents silt loam, frequently flooded-----	80	Limitations Flooding Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Frequent or occasional flooding Permeability > 2"/hr (seepage)	1.00 1.00 1.00
441: Oxyaquic Xerofluvents very fine sandy loam-----	90	Limitations Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration) Saturation < 4' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Permeability > 2"/hr (seepage) Saturation at < 3.5' depth	1.00 1.00 1.00
442: Durixerolls clay loam-----	55	Limitations Ponding (any duration) Depth to pan < 40" Saturation < 4' depth	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00
Haploxerolls clay loam-----	30	Limitations Saturation < 4' depth Permeability from .6 to 2"/hr (slow perc) Depth to pan 40 to 72"	1.00 0.92 0.41	Limitations Saturation at < 3.5' depth Rare flooding Permeability .6-2"/hr (some seepage)	1.00 0.50 0.32
443: Durixerolls loam-----	60	Limitations Depth to pan < 40" Saturation < 4' depth Rare flooding	1.00 1.00 0.40	Limitations Saturation at < 3.5' depth Depth to pan < 40" Permeability .6-2"/hr (some seepage)	1.00 1.00 0.87

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
443: Haploxerolls loam-----	25	Limitations Saturation < 4' depth Seepage in bottom layer Depth to pan 40 to 72"	1.00 1.00 0.69	Limitations Saturation at < 3.5' depth Permeability > 2"/hr (seepage) Rare flooding	1.00 1.00 0.50
445: Chico loam-----	85	Limitations Permeability < .6"/hr in 24-60" (slow perc)	1.00	Limitations Permeability .6-2"/hr (some seepage)	0.01
447: Charger fine sandy loam-----	80	Limitations Saturation < 4' depth Seepage in bottom layer Rare flooding	1.00 1.00 0.40	Limitations Permeability > 2"/hr (seepage) Saturation from 3.5 to 5' depth Rare flooding	1.00 0.88 0.50
448: Haploxerolls clay loam-----	75	Limitations Permeability < .6"/hr in 24-60" (slow perc) Saturation from 4 to 6' depth Rare flooding	1.00 0.43 0.40	Limitations Rare flooding Permeability .6-2"/hr (some seepage)	0.50 0.08
449: Haploxerolls loam-----	75	Limitations Seepage in bottom layer Saturation from 4 to 6' depth Rare flooding	1.00 0.43 0.40	Limitations Permeability > 2"/hr (seepage) Rare flooding	1.00 0.50
500: Lofgren clay-----	45	Limitations Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration) Saturation < 4' depth	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Depth to pan from 40-60"	1.00 1.00 0.71
Blavo clay-----	40	Limitations Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
501: Lofgren clay, occasionally flooded-----	45	Limitations Flooding Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Frequent or occasional flooding	1.00 1.00 1.00
Blavo clay, occasionally flooded--	40	Limitations Flooding Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00
502: Blavo silt loam, overwash, occasionally flooded-----	80	Limitations Flooding Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00
519: Edjobe silty clay-----	85	Limitations Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration) Saturation < 4' depth	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration)	1.00 1.00
520: Esquon clay-----	60	Limitations Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration) Saturation < 4' depth	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Rare flooding	1.00 1.00 0.50
Neerdobe clay-----	30	Limitations Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
521: Neerdobe silt loam, overwash-----	85	Limitations Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration) Saturation < 4' depth	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Permeability > 2"/hr (seepage)	1.00 1.00 1.00
522: Clear Lake silty clay loam, overwash-----	80	Limitations Flooding Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Frequent or occasional flooding	1.00 1.00 1.00
523: Esquon silty clay loam, overwash--	80	Limitations Flooding Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Frequent or occasional flooding	1.00 1.00 1.00
525: Govstanford loam-----	85	Limitations Saturation < 4' depth Permeability from .6 to 2"/hr (slow perc)	1.00 0.50	Limitations Permeability > 2"/hr (seepage) Saturation at < 3.5' depth	1.00 1.00
526: Govstanford loam, occasionally flooded-----	85	Limitations Flooding Saturation < 4' depth Permeability from .6 to 2"/hr (slow perc)	1.00 1.00 0.50	Limitations Frequent or occasional flooding Permeability > 2"/hr (seepage) Saturation at < 3.5' depth	1.00 1.00 1.00
528: Neerdobe clay loam-----	90	Limitations Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
550: Dunstone loam, dry-----	60	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan	1.00 1.00	Limitations Bedrock (soft) < 40" depth Permeability .6-2"/hr (some seepage) Slopes 2 to 8%	1.00 0.68 0.67
Loafercreek silt loam, dry-----	20	Limitations Depth to bedrock < 40" Permeability from .6 to 2"/hr (slow perc) Slopes 8 to 15%	1.00 0.08 0.01	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 0.99
551: Dunstone loam, dry-----	35	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.68
Lomarica loam-----	15	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8%	1.00 1.00
Argonaut taxadjunct loam-----	15	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8%	1.00 1.00
552: Dunstone gravelly loam-----	45	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes 8 to 15%	1.00 1.00 0.01	Limitations Bedrock (hard) < 40" depth Bedrock (soft) < 40" depth Slopes > 8%	1.00 1.00 1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
552: Loafercreek gravelly loam-----	40	Limitations Depth to bedrock < 40" Permeability from .6 to 2"/hr (slow perc) Slopes 8 to 15%	 1.00 0.02 0.01	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	 1.00 1.00 1.00
553: Dunstone gravelly loam-----	45	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	 1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Bedrock (soft) < 40" depth Slopes > 8%	 1.00 1.00 1.00
Loafercreek gravelly loam-----	40	Limitations Depth to bedrock < 40" Slopes > 15% Permeability from .6 to 2"/hr (slow perc)	 1.00 1.00 0.02	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	 1.00 1.00 1.00
554: Dunstone gravelly loam-----	45	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	 1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Bedrock (soft) < 40" depth Slopes > 8%	 1.00 1.00 1.00
Loafercreek gravelly loam-----	40	Limitations Depth to bedrock < 40" Slopes > 15% Permeability from .6 to 2"/hr (slow perc)	 1.00 1.00 0.02	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	 1.00 1.00 1.00
555: Dunstone gravelly loam-----	45	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	 1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Bedrock (soft) < 40" depth Slopes > 8%	 1.00 1.00 1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
555: Loafercreek gravelly loam-----	40	Limitations Depth to bedrock < 40" Slopes > 15% Permeability from .6 to 2"/hr (slow perc)	1.00 1.00 0.02	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
556: Mounthope loam-----	50	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72" Slopes 8 to 15%	1.00 0.69 0.01	Limitations Slopes > 8% Bedrock (soft) from 40 to 60" Permeability .6-2"/hr (some seepage)	1.00 0.26 0.01
Hartsmill gravelly loam-----	40	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72" Fragments (>3") 25 to 50%	1.00 0.18 0.02	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.92
557: Mounthope loam-----	50	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72"	1.00 1.00 0.69	Limitations Slopes > 8% Bedrock (soft) from 40 to 60" Permeability .6-2"/hr (some seepage)	1.00 0.26 0.01
Hartsmill gravelly loam-----	40	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72"	1.00 1.00 0.18	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.92
558: Hartsmill gravelly loam-----	55	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72"	1.00 1.00 0.18	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.92

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
558:					
Mounthope loam-----	30	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) from 40 to 60"	0.26
		Depth to bedrock 40 - 72"	0.69	Permeability .6-2"/hr (some seepage)	0.01
559:					
Hartsmill gravelly loam-----	55	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability .6-2"/hr (some seepage)	0.92
		Depth to bedrock 40 - 72"	0.18		
Mounthope loam-----	30	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) from 40 to 60"	0.26
		Depth to bedrock 40 - 72"	0.69	Permeability .6-2"/hr (some seepage)	0.01
560:					
Hartsmill gravelly loam-----	50	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability .6-2"/hr (some seepage)	0.92
		Depth to bedrock 40 - 72"	0.18		
Mounthope loam-----	30	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) from 40 to 60"	0.26
		Depth to bedrock 40 - 72"	0.69	Permeability .6-2"/hr (some seepage)	0.01
561:					
Bigridge loam-----	50	Limitations		Limitations	
		Depth to bedrock 40 - 72"	0.75	Slopes > 8%	1.00
		Permeability from .6 to 2"/hr (slow perc)	0.02	Permeability > 2"/hr (seepage)	0.99
		Slopes 8 to 15%	0.01	Bedrock (soft) from 40 to 60"	0.35

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
561: Minniecreek loam-----	35	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock < 40" Slopes 8 to 15%	1.00 1.00 0.01	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.01
562: Bigridge loam-----	50	Limitations Slopes > 15% Depth to bedrock 40 - 72" Permeability from .6 to 2"/hr (slow perc)	1.00 0.75 0.02	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Bedrock (soft) from 40 to 60"	1.00 0.99 0.35
Minniecreek loam-----	35	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.01
563: Bigridge loam-----	50	Limitations Slopes > 15% Depth to bedrock 40 - 72" Permeability from .6 to 2"/hr (slow perc)	1.00 0.75 0.02	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Bedrock (soft) from 40 to 60"	1.00 0.99 0.35
Minniecreek loam-----	35	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.01
564: Bigridge loam-----	50	Limitations Slopes > 15% Depth to bedrock 40 - 72" Permeability from .6 to 2"/hr (slow perc)	1.00 0.75 0.02	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Bedrock (soft) from 40 to 60"	1.00 0.99 0.35

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
564: Minniecreek loam-----	35	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.01
565: Dunstone loam, dry-----	35	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan	1.00 1.00	Limitations Bedrock (soft) < 40" depth Permeability .6-2"/hr (some seepage) Slopes 2 to 8%	1.00 0.68 0.67
Argonaut taxadjunct loam-----	30	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock < 40" Slopes 8 to 15%	1.00 1.00 0.01	Limitations Bedrock (soft) < 40" depth Slopes > 8%	1.00 1.00
Sunnyslope loam-----	20	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan	1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes 2 to 8%	1.00 0.83
566: Dunstone loam, dry-----	45	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan	1.00 1.00	Limitations Bedrock (soft) < 40" depth Permeability .6-2"/hr (some seepage) Slopes 2 to 8%	1.00 0.68 0.67
Loafercreek silt loam, dry-----	20	Limitations Depth to bedrock < 40" Permeability from .6 to 2"/hr (slow perc) Slopes 8 to 15%	1.00 0.08 0.01	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 0.99
Katskillhill loam-----	15	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72" Slopes 8 to 15%	1.00 0.99 0.01	Limitations Slopes > 8% Bedrock (hard) from 40 to 60"	1.00 0.96

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
567:					
Dunstone loam, dry-----	40	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan	1.00 1.00	Limitations Bedrock (soft) < 40" depth Permeability .6-2"/hr (some seepage) Slopes 2 to 8%	1.00 0.68 0.67
Loafercreek silt loam, dry-----	25	Limitations Depth to bedrock < 40" Permeability from .6 to 2"/hr (slow perc) Slopes 8 to 15%	1.00 0.08 0.01	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 0.99
Argonaut taxadjunct loam-----	20	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock < 40" Slopes 8 to 15%	1.00 1.00 0.01	Limitations Bedrock (soft) < 40" depth Slopes > 8%	1.00 1.00
577:					
Parkshill coarse sandy loam-----	40	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes 8 to 15%	0.99 0.01	Limitations Permeability > 2"/hr (seepage) Slopes > 8%	1.00 1.00
Flanly loam-----	25	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes 8 to 15%	1.00 1.00 0.01	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.82
Hurleton gravelly sandy loam-----	20	Limitations Depth to bedrock < 40" Permeability from .6 to 2"/hr (slow perc) Slopes 8 to 15%	1.00 0.18 0.04	Limitations Bedrock (hard) < 40" depth Permeability > 2"/hr (seepage) Slopes > 8%	1.00 1.00 1.00
578:					
Flanly loam-----	45	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes 8 to 15%	1.00 1.00 0.01	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.82

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
578: Swedesflat cobbly fine sandy loam	35	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes 8 to 15%	1.00 1.00 0.16	Limitations Bedrock (soft) < 40" depth Slopes > 8%	1.00 1.00
580: Surnuf taxadjunct loam-----	40	Limitations Permeability from .6 to 2"/hr (slow perc) Slopes 8 to 15%	0.92 0.01	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.32
Griffgulch very gravelly silt loam	25	Limitations Permeability < .6"/hr in 24-60" (slow perc) Fragments (>3") 25 to 50% Depth to bedrock 40 - 72"	1.00 0.94 0.36	Limitations Slopes > 8% Fragments (>3") > 35% Bedrock (hard) from 40 to 60"	1.00 1.00 0.01
Rock outcrop, metavolcanic-----	20	Not rated		Not rated	
581: Surnuf taxadjunct loam-----	65	Limitations Slopes > 15% Permeability from .6 to 2"/hr (slow perc)	1.00 0.92	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.32
Griffgulch very gravelly silt loam	20	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.94	Limitations Slopes > 8% Fragments (>3") > 35% Bedrock (hard) from 40 to 60"	1.00 1.00 0.01
582: Surnuf taxadjunct loam-----	50	Limitations Slopes > 15% Permeability from .6 to 2"/hr (slow perc)	1.00 0.92	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.32
Griffgulch very gravelly silt loam	35	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.94	Limitations Slopes > 8% Fragments (>3") > 35% Bedrock (hard) from 40 to 60"	1.00 1.00 0.01

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
583:					
Surnuf taxadjunct loam-----	50	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability from .6 to 2"/hr (slow perc)	0.92	Permeability .6-2"/hr (some seepage)	0.32
Griffgulch very gravelly silt loam	35	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Fragments (>3") > 35%	1.00
		Fragments (>3") 25 to 50%	0.94	Bedrock (hard) from 40 to 60"	0.01
584:					
Flanly loam-----	35	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Restricted permeability due to bedrock or hardpan	1.00	Permeability .6-2"/hr (some seepage)	0.82
Swedesflat cobbly fine sandy loam	30	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Restricted permeability due to bedrock or hardpan	1.00		
Rackerby very gravelly sandy loam	25	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Restricted permeability due to bedrock or hardpan	1.00	Permeability .6-2"/hr (some seepage)	0.92
585:					
Flanly loam-----	45	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%	1.00
		Slopes 8 to 15%	0.01	Permeability .6-2"/hr (some seepage)	0.82
Sommeyflat loam-----	35	Limitations		Limitations	
		Seepage in bottom layer	1.00	Permeability .6-2"/hr (some seepage)	0.98
		Permeability from .6 to 2"/hr (slow perc)	0.92	Slopes 2 to 8%	0.50
		Depth to bedrock 40 - 72"	0.01		

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
586: Sommeyleft loam-----	45	Limitations Slopes > 15% Seepage in bottom layer Permeability from .6 to 2"/hr (slow perc)	1.00 1.00 0.92	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.98
Mounthope loam-----	40	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72"	1.00 1.00 0.69	Limitations Slopes > 8% Bedrock (soft) from 40 to 60" Permeability .6-2"/hr (some seepage)	1.00 0.26 0.01
587: Sommeyleft loam-----	35	Limitations Slopes > 15% Seepage in bottom layer Permeability from .6 to 2"/hr (slow perc)	1.00 1.00 0.92	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.98
Mounthope loam-----	30	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72"	1.00 1.00 0.69	Limitations Slopes > 8% Bedrock (soft) from 40 to 60" Permeability .6-2"/hr (some seepage)	1.00 0.26 0.01
Hurleton gravelly sandy loam-----	25	Limitations Depth to bedrock < 40" Slopes > 15% Permeability from .6 to 2"/hr (slow perc)	1.00 1.00 0.18	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
588: Ultic Haploxeralfs, thermic, high terrace-----	95	Limitations Saturation < 4' depth Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00	Limitations Saturation at < 3.5' depth Slopes 2 to 8% Permeability .6-2"/hr (some seepage)	1.00 0.83 0.08

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
589: Ultic Haploxeralfs, thermic, high terrace-----	95	Limitations Saturation < 4' depth Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.08
590: Vistarobles sandy loam-----	30	Limitations Ponding (any duration) Depth to pan < 40" Saturation < 4' depth	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00
Redding loam-----	25	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to pan < 40" Saturation < 4' depth	1.00 1.00 1.00	Limitations Depth to pan < 40" Saturation at < 3.5' depth Permeability .6-2"/hr (some seepage)	1.00 1.00 0.68
Argonaut taxadjunct loam-----	20	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock < 40"	1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes 2 to 8%	1.00 0.33
Haploxererts gravelly silty clay--	15	Limitations Permeability < .6"/hr in 24-60" (slow perc) Ponding (any duration) Saturation < 4' depth	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Bedrock (soft) from 40 to 60"	1.00 1.00 0.99
603: Oroville gravelly fine sandy loam	30	Limitations Ponding (any duration) Depth to pan < 40" Saturation < 4' depth	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00
Thermalito sandy loam-----	25	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to pan < 40" Saturation < 4' depth	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Depth to pan < 40" Slopes 2 to 8%	1.00 1.00 0.17

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
603: Fernandez sandy loam-----	15	Limitations Permeability < .6"/hr in 24-60" (slow perc) Saturation < 4' depth	1.00 1.00	Limitations Saturation at < 3.5' depth	1.00
Thompsonflat fine sandy loam-----	15	Limitations Permeability < .6"/hr in 24-60" (slow perc) Saturation from 4 to 6' depth	1.00 0.43	Limitations Slopes 2 to 8%	0.50
605: Duric Xerarents fine sandy loam, leveled-----	75	Limitations Ponding (any duration) Depth to pan < 40" Saturation < 4' depth	1.00 1.00 1.00	Limitations Ponding (any duration) Depth to pan < 40" Saturation from 3.5 to 5' depth	1.00 1.00 0.91
Oroville gravelly fine sandy loam	20	Limitations Ponding (any duration) Depth to pan < 40" Saturation < 4' depth	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00
606: Redtough loam-----	45	Limitations Depth to pan < 40" Saturation < 4' depth Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Depth to pan < 40" Fragments (>3") 20-35%	1.00 1.00 0.07
Fallager loam-----	30	Limitations Ponding (any duration) Depth to pan < 40" Saturation < 4' depth	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00
Anita, gravelly duripan-----	15	Limitations Ponding (any duration) Depth to pan < 40" Saturation < 4' depth	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
609: Anita, gravelly duripan-----	50	Limitations Ponding (any duration) Depth to pan < 40" Saturation < 4' depth	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Ponding (any duration) Depth to pan < 40"	1.00 1.00 1.00
Tuscan taxadjunct gravelly clay loam-----	40	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to pan < 40" Saturation < 4' depth	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Depth to pan < 40"	1.00 1.00
614: Doemill gravelly loam-----	50	Limitations Depth to bedrock < 40" Saturation < 4' depth Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Bedrock (hard) < 40" depth Permeability .6-2"/hr (some seepage)	1.00 1.00 0.32
Jokerst very cobbly loam-----	40	Limitations Flooding Depth to bedrock < 40" Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Bedrock (hard) < 40" depth Ponding (any duration)	1.00 1.00 1.00
615: Doemill gravelly loam-----	50	Limitations Depth to bedrock < 40" Saturation < 4' depth Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Bedrock (hard) < 40" depth Permeability .6-2"/hr (some seepage)	1.00 1.00 0.32
Jokerst very cobbly loam-----	40	Limitations Flooding Depth to bedrock < 40" Ponding (any duration)	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Bedrock (hard) < 40" depth Ponding (any duration)	1.00 1.00 1.00
616: Jokerst very cobbly loam-----	35	Limitations Depth to bedrock < 40" Saturation < 4' depth Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Bedrock (hard) < 40" depth Slopes > 8%	1.00 1.00 1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
616: Doemill gravelly loam-----	35	Limitations Depth to bedrock < 40" Saturation < 4' depth Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Bedrock (hard) < 40" depth Slopes > 8%	1.00 1.00 1.00
Typic Haploxeralfs gravelly loam--	15	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes 8 to 15%	1.00 0.84	Limitations Slopes > 8% Bedrock (soft) < 40" depth	1.00 0.99
617: Doemill gravelly loam-----	35	Limitations Depth to bedrock < 40" Saturation < 4' depth Slopes > 15%	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Bedrock (hard) < 40" depth Slopes > 8%	1.00 1.00 1.00
Jokerst very cobbly loam-----	30	Limitations Depth to bedrock < 40" Saturation < 4' depth Slopes > 15%	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Bedrock (hard) < 40" depth Slopes > 8%	1.00 1.00 1.00
Typic Haploxeralfs gravelly loam--	20	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00	Limitations Slopes > 8% Bedrock (soft) < 40" depth	1.00 0.99
619: Carhart taxadjunct clay-----	90	Limitations Depth to bedrock < 40" Ponding (any duration) Saturation < 4' depth	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Bedrock (hard) < 40" depth Ponding (any duration)	1.00 1.00 1.00
620: Doemill gravelly loam-----	40	Limitations Depth to bedrock < 40" Saturation < 4' depth Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Bedrock (hard) < 40" depth Slopes 2 to 8%	1.00 1.00 0.50

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
620: Jokerst very cobbly loam-----	25	Limitations Depth to bedrock < 40" Ponding (any duration) Saturation < 4' depth	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Bedrock (hard) < 40" depth Ponding (any duration)	1.00 1.00 1.00
Ultic Haploxeralfs, thermic, gravelly loam-----	20	Limitations Depth to bedrock < 40" Saturation < 4' depth Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Bedrock (hard) < 40" depth Bedrock (soft) < 40" depth	1.00 1.00 1.00
621: Doemill gravelly loam-----	30	Limitations Depth to bedrock < 40" Saturation < 4' depth Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Bedrock (hard) < 40" depth Slopes > 8%	1.00 1.00 1.00
Jokerst very cobbly loam-----	30	Limitations Depth to bedrock < 40" Saturation < 4' depth Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Bedrock (hard) < 40" depth Slopes > 8%	1.00 1.00 1.00
Ultic Haploxeralfs, thermic, gravelly loam-----	20	Limitations Depth to bedrock < 40" Saturation < 4' depth Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Bedrock (hard) < 40" depth Bedrock (soft) < 40" depth	1.00 1.00 1.00
622: Xerorthents, shallow-----	40	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Bedrock (soft) < 40" depth Slopes > 8%	1.00 1.00 1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
622: Typic Haploxeralfs gravelly loam--	30	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72"	1.00 1.00 0.99	Limitations Slopes > 8% Bedrock (hard) < 40" depth Bedrock (soft) < 40" depth	1.00 0.99 0.99
Rock outcrop, mudflow-breccia cliffs-----	15	Not rated		Not rated	
623: Xerorthents, shallow-----	40	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Bedrock (soft) < 40" depth Slopes > 8%	1.00 1.00 1.00
Typic Haploxeralfs gravelly loam--	25	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72"	1.00 1.00 0.99	Limitations Slopes > 8% Bedrock (hard) < 40" depth Bedrock (soft) < 40" depth	1.00 0.99 0.99
Rock outcrop, mudflow-breccia cliffs-----	20	Not rated		Not rated	
624: Ultic Haploxeralfs, mesic, gravelly loam-----	60	Limitations Permeability < .6"/hr in 24-60" (slow perc) Fragments (>3") >50% Depth to bedrock 40 - 72"	1.00 0.99 0.99	Limitations Fragments (>3") > 35% Bedrock (hard) from 40 to 60" Bedrock (soft) from 40 to 60"	1.00 0.96 0.96
Rockstripe very gravelly loam----	25	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Bedrock (hard) < 40" depth Slopes 2 to 8% Fragments (>3") 20-35%	1.00 0.50 0.32

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
625: Ultic Haploxeralfs, mesic, gravelly loam-----	50	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15% Fragments (>3") >50%	1.00 1.00 0.99	Limitations Slopes > 8% Fragments (>3") > 35% Bedrock (hard) from 40 to 60"	1.00 1.00 0.96
Rockstripe very gravelly loam----	35	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Fragments (>3") 20-35%	1.00 1.00 0.32
626: Ultic Haploxeralfs gravelly loam--	40	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15% Depth to bedrock 40 - 72"	1.00 1.00 0.86	Limitations Slopes > 8% Bedrock (hard) from 40 to 60" Bedrock (soft) from 40 to 60"	1.00 0.61 0.61
Rockstripe very gravelly loam----	35	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Fragments (>3") 20-35%	1.00 1.00 0.32
Rock outcrop, mudflow-breccia cliffs-----	15	Not rated		Not rated	
627: Ultic Haploxeralfs gravelly loam--	40	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15% Depth to bedrock 40 - 72"	1.00 1.00 0.86	Limitations Slopes > 8% Bedrock (hard) from 40 to 60" Bedrock (soft) from 40 to 60"	1.00 0.61 0.61
Rockstripe very gravelly loam----	35	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Fragments (>3") 20-35%	1.00 1.00 0.32

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
627: Rock outcrop, mudflow-breccia cliffs-----	15	Not rated		Not rated	
628: Rockstripe very gravelly loam----	40	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Fragments (>3") 20-35%	1.00 1.00 0.32
Ultic Haploxeralfs gravelly loam--	35	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15% Depth to bedrock 40 - 72"	1.00 1.00 0.86	Limitations Slopes > 8% Bedrock (hard) from 40 to 60" Bedrock (soft) from 40 to 60"	1.00 0.61 0.61
Rock outcrop, mudflow-breccia cliffs-----	20	Not rated		Not rated	
629: Slideland gravelly loam-----	80	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes 8 to 15%	1.00 0.37	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.01
630: Slideland gravelly loam-----	80	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15%	1.00 1.00	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.01
631: Slideland gravelly loam-----	80	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15%	1.00 1.00	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.01

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
632: Ultic Haploxeralfs, conglomerate, very deep-----	50	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes 8 to 15%	1.00 0.84	Limitations Slopes > 8%	1.00
Ultic Haploxeralfs, conglomerate, moderately deep-----	40	Limitations Depth to bedrock < 40" Permeability < .6"/hr in 24-60" (slow perc) Fragments (>3") 25 to 50%	1.00 1.00 0.32	Limitations Bedrock (soft) < 40" depth Fragments (>3") 20-35% Slopes 2 to 8%	1.00 0.92 0.67
633: Ultic Haploxeralfs, conglomerate, very deep-----	60	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15%	1.00 1.00	Limitations Slopes > 8%	1.00
Ultic Haploxeralfs, conglomerate, moderately deep-----	30	Limitations Depth to bedrock < 40" Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Fragments (>3") 20-35%	1.00 1.00 0.92
634: Ultic Haploxeralfs, conglomerate, very deep-----	60	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15%	1.00 1.00	Limitations Slopes > 8%	1.00
Ultic Haploxeralfs, conglomerate, moderately deep-----	30	Limitations Depth to bedrock < 40" Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Fragments (>3") 20-35%	1.00 1.00 0.92

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
635: Ultic Haploxeralfs, conglomerate, very deep-----	50	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15%	1.00 1.00	Limitations Slopes > 8%	1.00
Ultic Haploxeralfs, conglomerate, moderately deep-----	40	Limitations Depth to bedrock < 40" Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Fragments (>3") 20-35%	1.00 1.00 0.92
636: Ultic Haploxeralfs, conglomerate, moderately deep-----	50	Limitations Depth to bedrock < 40" Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Fragments (>3") 20-35%	1.00 1.00 0.92
Ultic Haploxeralfs, conglomerate, very deep-----	40	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15%	1.00 1.00	Limitations Slopes > 8%	1.00
637: Ultic Haploxeralfs, sandstone----	80	Limitations Permeability < .6"/hr in 24-60" (slow perc) Permeability > 6"/hr in 24-60" (seepage and poor filter) Depth to bedrock 40 - 72"	1.00 1.00 0.09	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.50
638: Ultic Haploxeralfs, sandstone----	80	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00 1.00 1.00	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.50

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
639: Ultic Haploxeralfs, sandstone-----	75	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00 1.00 1.00	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.50
640: Ultic Haploxeralfs, sandstone-----	75	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00 1.00 1.00	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.50
641: Ultic Haploxeralfs, sandstone-----	75	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00 1.00 1.00	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.50
642: Chinacamp gravelly loam-----	70	Limitations Permeability < .6"/hr in 24-60" (slow perc)	1.00	Limitations Slopes 2 to 8%	0.50
643: Chinacamp gravelly loam-----	70	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00	Limitations Slopes > 8%	1.00
644: Chinacamp gravelly loam-----	70	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00	Limitations Slopes > 8%	1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
645: Chinacamp gravelly loam-----	70	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00	Limitations Slopes > 8%	1.00
646: Coalcanyon taxadjunct very gravelly loam-----	80	Limitations Permeability < .6"/hr in 24-60" (slow perc) Fragments (>3") 25 to 50%	1.00 0.30	Limitations Slopes 2 to 8% Fragments (>3") 20-35% Permeability .6-2"/hr (some seepage)	0.50 0.22 0.01
647: Coalcanyon taxadjunct very gravelly loam-----	75	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.30	Limitations Slopes > 8% Fragments (>3") 20-35% Permeability .6-2"/hr (some seepage)	1.00 0.22 0.01
648: Coalcanyon taxadjunct very gravelly loam-----	80	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.30	Limitations Slopes > 8% Fragments (>3") 20-35% Permeability .6-2"/hr (some seepage)	1.00 0.22 0.01
649: Coalcanyon taxadjunct very gravelly loam-----	75	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.30	Limitations Slopes > 8% Fragments (>3") 20-35% Permeability .6-2"/hr (some seepage)	1.00 0.22 0.01
650: Schott very gravelly loam-----	65	Limitations Permeability < .6"/hr in 24-60" (slow perc) Fragments (>3") 25 to 50% Depth to bedrock 40 - 72"	1.00 0.97 0.78	Limitations Fragments (>3") > 35% Slopes 2 to 8% Bedrock (hard) from 40 to 60"	0.99 0.50 0.42

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
651: Schott very gravelly loam-----	65	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Fragments (>3") 25 to 50%	 1.00 1.00 0.97	Limitations Slopes > 8% Fragments (>3") > 35% Bedrock (hard) from 40 to 60"	 1.00 0.99 0.42
652: Schott very gravelly loam-----	65	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Fragments (>3") 25 to 50%	 1.00 1.00 0.97	Limitations Slopes > 8% Fragments (>3") > 35% Bedrock (hard) from 40 to 60"	 1.00 0.99 0.42
Rock outcrop, mudflow breccia-----	20	Not rated		Not rated	
654: Coridge bouldery loam-----	70	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock < 40" Saturation < 4' depth	 1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Bedrock (hard) < 40" depth Slopes 2 to 8%	 1.00 1.00 0.83
Rock outcrop, Cohasset basalt-----	20	Not rated		Not rated	
655: Coridge bouldery loam-----	70	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock < 40" Saturation < 4' depth	 1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Bedrock (hard) < 40" depth Slopes > 8%	 1.00 1.00 1.00
Rock outcrop, Cohasset basalt-----	20	Not rated		Not rated	
656: Rock outcrop, basalt cliffs-----	40	Not rated		Not rated	
Coalcanyon taxadjunct very gravelly loam-----	40	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15% Fragments (>3") 25 to 50%	 1.00 1.00 0.30	Limitations Slopes > 8% Fragments (>3") 20-35% Permeability .6-2"/hr (some seepage)	 1.00 0.22 0.01

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
657:					
Bonneyridge sandy loam-----	35	Limitations Seepage in bottom layer	1.00	Limitations Permeability > 2"/hr (seepage) Slopes 2 to 8%	1.00 0.83
Chawanakee gravelly sandy loam----	30	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Permeability > 2"/hr (seepage) Slopes 2 to 8%	1.00 1.00 0.83
Rock outcrop, quartz diorite-----	20	Not rated		Not rated	
658:					
Bonneyridge sandy loam-----	35	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
Chawanakee gravelly sandy loam----	30	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Rock outcrop, quartz diorite-----	25	Not rated		Not rated	
659:					
Bonneyridge sandy loam-----	35	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
Chawanakee gravelly sandy loam----	30	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Rock outcrop, quartz diorite-----	25	Not rated		Not rated	
660:					
Bonneyridge sandy loam-----	30	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
660: Chawanakee gravelly sandy loam----	30	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Rock outcrop, quartz diorite-----	30	Not rated		Not rated	
661: Millerridge gravelly sandy clay loam-----	45	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock < 40"	1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes 2 to 8% Fragments (>3") 20-35%	1.00 0.50 0.11
Boxrobber cobbly sandy clay loam--	40	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Fragments (>3") 25 to 50%	1.00 1.00 0.02	Limitations Bedrock (hard) < 40" depth Bedrock (soft) < 40" depth Slopes 2 to 8%	1.00 1.00 0.50
662: Millerridge gravelly sandy clay loam-----	45	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Fragments (>3") 20-35%	1.00 1.00 0.11
Boxrobber cobbly sandy clay loam--	40	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Bedrock (soft) < 40" depth Slopes > 8%	1.00 1.00 1.00
663: Millerridge gravelly sandy clay loam-----	45	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Fragments (>3") 20-35%	1.00 1.00 0.11

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
663: Boxrobber cobbly sandy clay loam--	40	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Bedrock (soft) < 40" depth Slopes > 8%	1.00 1.00 1.00
664: Millerridge gravelly sandy clay loam-----	45	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Fragments (>3") 20-35%	1.00 1.00 0.11
Boxrobber cobbly sandy clay loam--	40	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Bedrock (soft) < 40" depth Slopes > 8%	1.00 1.00 1.00
665: Surnuf gravelly loam-----	40	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes 8 to 15%	1.00 0.01	Limitations Slopes > 8%	1.00
Bigridge loam-----	40	Limitations Depth to bedrock 40 - 72" Permeability from .6 to 2"/hr (slow perc) Slopes 8 to 15%	0.75 0.02 0.01	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Bedrock (soft) from 40 to 60"	1.00 0.99 0.35
666: Surnuf gravelly loam-----	40	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15%	1.00 1.00	Limitations Slopes > 8%	1.00
Bigridge loam-----	40	Limitations Slopes > 15% Depth to bedrock 40 - 72" Permeability from .6 to 2"/hr (slow perc)	1.00 0.75 0.02	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Bedrock (soft) from 40 to 60"	1.00 0.99 0.35

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
667:					
Surnuf gravelly loam-----	40	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00		
Bigridge loam-----	40	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock 40 - 72"	0.75	Permeability > 2"/hr (seepage)	0.99
		Permeability from .6 to 2"/hr (slow perc)	0.02	Bedrock (soft) from 40 to 60"	0.35
668:					
Surnuf gravelly loam-----	40	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00		
Bigridge loam-----	40	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock 40 - 72"	0.75	Permeability > 2"/hr (seepage)	0.99
		Permeability from .6 to 2"/hr (slow perc)	0.02	Bedrock (soft) from 40 to 60"	0.35
669:					
Oroshore gravelly loam-----	35	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.03	Fragments (>3") 20-35%	0.44
Mounthope loam-----	25	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%	1.00
		Depth to bedrock 40 - 72"	0.69	Bedrock (soft) from 40 to 60"	0.26
		Slopes 8 to 15%	0.01	Permeability .6-2"/hr (some seepage)	0.01
Dunstone gravelly loam-----	20	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Restricted permeability due to bedrock or hardpan	1.00	Bedrock (soft) < 40" depth	1.00
		Slopes 8 to 15%	0.01	Slopes > 8%	1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
670:					
Oroshore gravelly loam-----	35	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Fragments (>3") 20-35%	0.44
Mounthope loam-----	25	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) from 40 to 60"	0.26
		Depth to bedrock 40 - 72"	0.69	Permeability .6-2"/hr (some seepage)	0.01
Dunstone gravelly loam-----	20	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Bedrock (soft) < 40" depth	1.00
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%	1.00
671:					
Oroshore gravelly loam-----	35	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Fragments (>3") 20-35%	0.44
Mounthope loam-----	25	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) from 40 to 60"	0.26
		Depth to bedrock 40 - 72"	0.69	Permeability .6-2"/hr (some seepage)	0.01
Dunstone gravelly loam-----	20	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Bedrock (soft) < 40" depth	1.00
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%	1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
672:					
Oroshore gravelly loam-----	30	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Fragments (>3") 20-35%	0.44
Mounthope loam-----	25	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) from 40 to 60"	0.26
		Depth to bedrock 40 - 72"	0.69	Permeability .6-2"/hr (some seepage)	0.01
Dunstone gravelly loam-----	25	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Bedrock (soft) < 40" depth	1.00
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%	1.00
674:					
Chawanakee gravelly sandy loam----	30	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Restricted permeability due to bedrock or hardpan	1.00	Permeability > 2"/hr (seepage)	1.00
Bonneyridge sandy loam-----	30	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
Rock outcrop, quartz diorite-----	30	Not rated		Not rated	
675:					
Clearhayes sandy clay loam-----	70	Limitations		Limitations	
		Flooding	1.00	Frequent or occasional flooding	1.00
		Saturation < 4' depth	1.00	Permeability > 2"/hr (seepage)	1.00
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) from 40 to 60"	0.77
Hamslough clay-----	15	Limitations		Limitations	
		Flooding	1.00	Saturation at < 3.5' depth	1.00
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Ponding (any duration)	1.00
		Ponding (any duration)	1.00	Depth to pan < 40"	1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
676:					
Carhart clay-----	50	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5' depth	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Ponding (any duration)	1.00	Ponding (any duration)	1.00
Anita taxadjunct clay-----	40	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Saturation at < 3.5' depth	1.00
		Ponding (any duration)	1.00	Bedrock (soft) < 40" depth	1.00
		Saturation < 4' depth	1.00	Ponding (any duration)	1.00
677:					
Tuscan gravelly loam-----	40	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Saturation at < 3.5' depth	1.00
		Depth to pan < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Saturation < 4' depth	1.00	Depth to pan < 40"	1.00
Fallager loam-----	25	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Saturation at < 3.5' depth	1.00
		Ponding (any duration)	1.00	Bedrock (soft) < 40" depth	1.00
		Depth to pan < 40"	1.00	Ponding (any duration)	1.00
Anita, gravelly duripan-----	15	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Saturation at < 3.5' depth	1.00
		Ponding (any duration)	1.00	Bedrock (soft) < 40" depth	1.00
		Depth to pan < 40"	1.00	Ponding (any duration)	1.00
679:					
Lucksev loam-----	40	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Saturation at < 3.5' depth	1.00
		Saturation < 4' depth	1.00	Bedrock (soft) < 40" depth	1.00
		Restricted permeability due to bedrock or hardpan	1.00	Slopes 2 to 8%	0.17
Butteside gravelly loam-----	35	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes 2 to 8%	0.83

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
679: Carhart clay-----	15	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock < 40" Saturation < 4' depth	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Bedrock (soft) < 40" depth Slopes 2 to 8%	1.00 1.00 0.50
680: Lucksev loam-----	45	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8%	1.00 1.00
Butteside gravelly loam-----	40	Limitations Depth to bedrock < 40" Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8%	1.00 1.00
683: Typic Haploxeralfs, magnesian, low elevation-----	50	Limitations Depth to bedrock < 40" Permeability < .6"/hr in 24-60" (slow perc) Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Bedrock (hard) < 40" depth Slopes > 8% Fragments (>3") 20-35%	1.00 1.00 0.23
Earlial very gravelly loam-----	20	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Fragments (>3") 25 to 50%	1.00 1.00 0.44	Limitations Bedrock (hard) < 40" depth Fragments (>3") > 35% Slopes > 8%	1.00 1.00 1.00
Rock outcrop, serpentinite-----	15	Not rated		Not rated	
684: Typic Haploxeralfs, magnesian, low elevation-----	50	Limitations Depth to bedrock < 40" Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Fragments (>3") 20-35%	1.00 1.00 0.23

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
684:					
Earlal very gravelly loam-----	20	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Restricted permeability due to bedrock or hardpan	1.00	Fragments (>3") > 35%	1.00
Rock outcrop, serpentinite-----	15	Not rated		Not rated	
685:					
Bosquejo taxadjunct, gravelly substratum-----	70	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5' depth	1.00
		Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Saturation < 4' depth	1.00	Rare flooding	0.50
686:					
Redsluff taxadjunct clay loam-----	70	Limitations		Limitations	
		Saturation < 4' depth	1.00	Saturation at < 3.5' depth	1.00
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Rare flooding	0.50
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00		
687:					
Xerorthents, shallow-----	45	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Restricted permeability due to bedrock or hardpan	1.00	Bedrock (soft) < 40" depth	1.00
				Slopes 2 to 8%	0.50
Typic Haploxeralfs gravelly loam--	40	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%	1.00
		Depth to bedrock 40 - 72"	0.99	Bedrock (hard) < 40" depth	0.99
		Slopes 8 to 15%	0.63	Bedrock (soft) < 40" depth	0.99
700:					
Retsongulch very gravelly sandy loam-----	40	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
700: Flumewall gravelly sandy loam-----	25	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Fragments (>3") > 35%	1.00 1.00 1.00
701: Powellton gravelly loam-----	40	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.50
Obstruction gravelly sandy loam---	30	Limitations Slopes > 15% Seepage in bottom layer Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00 0.99	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
702: Cerpone gravelly loam-----	50	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72" Slopes 8 to 15%	1.00 0.43 0.37	Limitations Slopes > 8% Bedrock (hard) from 40 to 60" Permeability .6-2"/hr (some seepage)	1.00 0.03 0.01
Typic Haploxeralfs, magnesian, very gravelly loam-----	20	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72" Slopes 8 to 15%	1.00 0.59 0.16	Limitations Slopes > 8% Bedrock (hard) from 40 to 60"	1.00 0.13
Earlall very gravelly loam-----	15	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Fragments (>3") 25 to 50%	1.00 1.00 0.44	Limitations Bedrock (hard) < 40" depth Fragments (>3") > 35% Slopes > 8%	1.00 1.00 1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
703:					
Cerpone gravelly loam-----	30	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72"	1.00 1.00 0.43	Limitations Slopes > 8% Bedrock (hard) from 40 to 60" Permeability .6-2"/hr (some seepage)	1.00 0.03 0.01
Typic Haploxeralfs, magnesian, very gravelly loam-----	30	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15% Depth to bedrock 40 - 72"	1.00 1.00 0.59	Limitations Slopes > 8% Bedrock (hard) from 40 to 60"	1.00 0.13
Earlal very gravelly loam-----	15	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Fragments (>3") > 35%	1.00 1.00 1.00
Rock outcrop, serpentinite-----	15	Not rated		Not rated	
704:					
Typic Haploxeralfs, magnesian, very gravelly loam-----	40	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15% Depth to bedrock 40 - 72"	1.00 1.00 0.59	Limitations Slopes > 8% Bedrock (hard) from 40 to 60"	1.00 0.13
Earlal very gravelly loam-----	20	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Fragments (>3") > 35%	1.00 1.00 1.00
Cerpone gravelly loam-----	15	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72"	1.00 1.00 0.43	Limitations Slopes > 8% Bedrock (hard) from 40 to 60" Permeability .6-2"/hr (some seepage)	1.00 0.03 0.01
Rock outcrop, serpentinite-----	15	Not rated		Not rated	

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
705:					
Typic Haploxeralfs, magnesian, very gravelly loam-----	35	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15% Depth to bedrock 40 - 72"	1.00 1.00 0.59	Limitations Slopes > 8% Bedrock (hard) from 40 to 60"	1.00 0.13
Earlial very gravelly loam-----	25	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Fragments (>3") > 35%	1.00 1.00 1.00
Cerpone gravelly loam-----	15	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72"	1.00 1.00 0.43	Limitations Slopes > 8% Bedrock (hard) from 40 to 60" Permeability .6-2"/hr (some seepage)	1.00 0.03 0.01
Rock outcrop, serpentinite-----	15	Not rated		Not rated	
711:					
Dixmine very gravelly loam-----	45	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72" Fragments (>3") 25 to 50%	1.00 0.61 0.01	Limitations Slopes > 8% Bedrock (soft) from 40 to 60" Permeability .6-2"/hr (some seepage)	1.00 0.15 0.08
Toadtown loam-----	40	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes 8 to 15%	1.00 0.01	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.68
712:					
Dixmine very gravelly loam-----	50	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72"	1.00 1.00 0.61	Limitations Slopes > 8% Bedrock (soft) from 40 to 60" Permeability .6-2"/hr (some seepage)	1.00 0.15 0.08

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
712: Toadtown loam-----	40	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.68
713: Dixmine very gravelly loam-----	50	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72"	1.00 1.00 0.61	Limitations Slopes > 8% Bedrock (soft) from 40 to 60" Permeability .6-2"/hr (some seepage)	1.00 0.15 0.08
Toadtown loam-----	35	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.68
714: Dixmine very gravelly loam-----	50	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72"	1.00 1.00 0.61	Limitations Slopes > 8% Bedrock (soft) from 40 to 60" Permeability .6-2"/hr (some seepage)	1.00 0.15 0.08
Toadtown loam-----	35	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.68
715: Logtrain gravelly loam-----	40	Limitations Slopes > 15% Permeability from .6 to 2"/hr (slow perc) Depth to bedrock 40 - 72"	1.00 0.98 0.59	Limitations Slopes > 8% Bedrock (hard) from 40 to 60" Permeability .6-2"/hr (some seepage)	1.00 0.13 0.08
Bottlehill very gravelly loam-----	30	Limitations Depth to bedrock < 40" Slopes > 15%	1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.08

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
715: Walkermine very gravelly loam-----	20	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Restricted permeability due to bedrock or hardpan	1.00	Fragments (>3") 20-35%	0.34
716: Griffgulch very gravelly silt loam	40	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Fragments (>3") > 35%	1.00
		Fragments (>3") 25 to 50%	0.94	Slopes 2 to 8%	0.83
		Depth to bedrock 40 - 72"	0.36	Bedrock (hard) from 40 to 60"	0.01
Surnuf gravelly loam-----	40	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%	1.00
		Slopes 8 to 15%	0.01		
717: Griffgulch very gravelly silt loam	40	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Fragments (>3") > 35%	1.00
		Fragments (>3") 25 to 50%	0.94	Bedrock (hard) from 40 to 60"	0.01
Surnuf gravelly loam-----	40	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00		
718: Griffgulch very gravelly silt loam	35	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Fragments (>3") > 35%	1.00
		Fragments (>3") 25 to 50%	0.94	Bedrock (hard) from 40 to 60"	0.01
Surnuf gravelly loam-----	35	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00		

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
718: Spine taxadjunct very cobbly loam	15	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Fragments (>3") > 35%	1.00 1.00 1.00
719: Griffgulch very gravelly silt loam	35	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.94	Limitations Slopes > 8% Fragments (>3") > 35% Bedrock (hard) from 40 to 60"	1.00 1.00 0.01
Surnuf gravelly loam-----	30	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15%	1.00 1.00	Limitations Slopes > 8%	1.00
Spine taxadjunct very cobbly loam	20	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Fragments (>3") > 35%	1.00 1.00 1.00
720: Dystroxerepts extremely gravelly loam-----	40	Limitations Depth to bedrock < 40" Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00 0.99	Limitations Bedrock (hard) < 40" depth Slopes > 8% Fragments (>3") > 35%	1.00 1.00 1.00
Haploxeralfs very gravelly loam--	30	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Fragments (>3") 25 to 50%	1.00 1.00 0.99	Limitations Slopes > 8% Fragments (>3") 20-35% Bedrock (hard) from 40 to 60"	1.00 0.99 0.71
Rock outcrop, metavolcanic-----	15	Not rated		Not rated	

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
721: Haploxerands, granitic till, medial sandy loam-----	70	Limitations Seepage in bottom layer Slopes 8 to 15%	1.00 0.96	Limitations Permeability > 2"/hr (seepage) Slopes > 8%	1.00 1.00
722: Haploxerands, granitic till, medial sandy loam-----	70	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
723: Haploxerands, granitic till, medial sandy loam-----	70	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
724: Haploxerands, volcanic till, cobble medial sandy loam-----	75	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes 8 to 15%	1.00 0.16	Limitations Permeability > 2"/hr (seepage) Slopes > 8% Fragments (>3") 20-35%	1.00 1.00 0.01
725: Haploxerands, volcanic till, cobble medial sandy loam-----	75	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15%	1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Fragments (>3") 20-35%	1.00 1.00 0.01
726: Haploxerands, volcanic till, cobble medial sandy loam-----	75	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15%	1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Fragments (>3") 20-35%	1.00 1.00 0.01
727: Bonneyridge sandy loam-----	85	Limitations Seepage in bottom layer	1.00	Limitations Permeability > 2"/hr (seepage) Slopes 2 to 8%	1.00 0.50

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
728: Bonneyridge sandy loam-----	85	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
729: Bonneyridge sandy loam-----	85	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
730: Tusccoll gravelly loam-----	60	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.01
Schott very gravelly loam-----	25	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Fragments (>3") 25 to 50%	1.00 1.00 0.97	Limitations Slopes > 8% Fragments (>3") > 35% Bedrock (hard) from 40 to 60"	1.00 0.99 0.42
731: Tusccoll gravelly loam-----	50	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.01
Schott very gravelly loam-----	35	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Fragments (>3") 25 to 50%	1.00 1.00 0.97	Limitations Slopes > 8% Fragments (>3") > 35% Bedrock (soft) from 40 to 60"	1.00 0.99 0.42
732: Bonpile taxadjunct, duripan substratum-----	90	Limitations Saturation < 4' depth Permeability < .6"/hr in 24-60" (slow perc) Depth to pan 40 to 72"	1.00 1.00 0.89	Limitations Saturation at < 3.5' depth Permeability > 2"/hr (seepage) Depth to pan from 40-60"	1.00 1.00 0.71

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
733: Haploxeralfs, terrace, gravelly loam-----	75	Limitations Permeability < .6"/hr in 24-60" (slow perc) Fragments (>3") 25 to 50%	1.00 0.99	Limitations Fragments (>3") 20-35% Permeability .6-2"/hr (some seepage)	0.05 0.01
734: Haploxerands medial sandy loam----	55	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Permeability > 2"/hr (seepage) Slopes > 8%	1.00 1.00
Aquic Xerofluvents peaty very fine sandy loam-----	35	Limitations Flooding Saturation < 4' depth Permeability from .6 to 2"/hr (slow perc)	1.00 1.00 0.08	Limitations Frequent or occasional flooding Permeability > 2"/hr (seepage) Saturation at < 3.5' depth	1.00 1.00 1.00
735: Fluvaquents, loamy-----	80	Limitations Saturation < 4' depth Permeability < .6"/hr in 24-60" (slow perc) Rare flooding	1.00 1.00 0.40	Limitations Saturation at < 3.5' depth Permeability > 2"/hr (seepage) Rare flooding	1.00 1.00 0.50
801: Obstruction gravelly sandy loam---	70	Limitations Seepage in bottom layer Permeability < .6"/hr in 24-60" (slow perc) Slopes 8 to 15%	1.00 0.99 0.16	Limitations Permeability > 2"/hr (seepage) Slopes > 8%	1.00 1.00
802: Obskel very gravelly sandy loam---	40	Limitations Slopes > 15% Depth to bedrock 40 - 72" Permeability from .6 to 2"/hr (slow perc)	1.00 0.50 0.50	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Bedrock (soft) from 40 to 60"	1.00 1.00 0.06

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
802: Obstruction gravelly sandy loam---	40	Limitations Slopes > 15% Seepage in bottom layer Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00 0.99	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
803: Obskel very gravelly sandy loam---	40	Limitations Slopes > 15% Depth to bedrock 40 - 72" Permeability from .6 to 2"/hr (slow perc)	1.00 0.50 0.50	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Bedrock (soft) from 40 to 60"	1.00 1.00 0.06
Obstruction gravelly sandy loam---	40	Limitations Slopes > 15% Seepage in bottom layer Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00 0.99	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
804: Obskel very gravelly sandy loam---	35	Limitations Slopes > 15% Depth to bedrock 40 - 72" Permeability from .6 to 2"/hr (slow perc)	1.00 0.50 0.50	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Bedrock (soft) from 40 to 60"	1.00 1.00 0.06
Obstruction gravelly sandy loam---	25	Limitations Slopes > 15% Seepage in bottom layer Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00 0.99	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
Retsongulch very gravelly sandy loam-----	20	Limitations Depth to bedrock < 40" Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
805:					
Bottlehill very gravelly loam-----	50	Limitations Depth to bedrock < 40"	1.00	Limitations Bedrock (hard) < 40" depth Slopes 2 to 8% Permeability .6-2"/hr (some seepage)	1.00 0.83 0.08
Walkermine very gravelly loam-----	20	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes 8 to 15%	1.00 1.00 0.84	Limitations Bedrock (hard) < 40" depth Slopes > 8% Fragments (>3") 20-35%	1.00 1.00 0.34
Logtrain gravelly loam-----	20	Limitations Permeability from .6 to 2"/hr (slow perc) Depth to bedrock 40 - 72"	0.98 0.59	Limitations Slopes 2 to 8% Bedrock (hard) from 40 to 60" Permeability .6-2"/hr (some seepage)	0.83 0.13 0.08
806:					
Bottlehill very gravelly loam-----	50	Limitations Depth to bedrock < 40" Slopes > 15%	1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.08
Walkermine very gravelly loam-----	20	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Fragments (>3") 20-35%	1.00 1.00 0.34
Logtrain gravelly loam-----	20	Limitations Slopes > 15% Permeability from .6 to 2"/hr (slow perc) Depth to bedrock 40 - 72"	1.00 0.98 0.59	Limitations Slopes > 8% Bedrock (hard) from 40 to 60" Permeability .6-2"/hr (some seepage)	1.00 0.13 0.08

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
807:					
Bottlehill very gravelly loam-----	35	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
				Permeability .6-2"/hr (some seepage)	0.08
Logtrain gravelly loam-----	30	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability from .6 to 2"/hr (slow perc)	0.98	Bedrock (hard) from 40 to 60"	0.13
		Depth to bedrock 40 - 72"	0.59	Permeability .6-2"/hr (some seepage)	0.08
Walkermine very gravelly loam-----	25	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Restricted permeability due to bedrock or hardpan	1.00	Fragments (>3") 20-35%	0.34
808:					
Bottlehill very gravelly loam-----	45	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
				Permeability .6-2"/hr (some seepage)	0.08
Walkermine very gravelly loam-----	20	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Restricted permeability due to bedrock or hardpan	1.00	Fragments (>3") 20-35%	0.34
Logtrain gravelly loam-----	20	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability from .6 to 2"/hr (slow perc)	0.98	Bedrock (hard) from 40 to 60"	0.13
		Depth to bedrock 40 - 72"	0.59	Permeability .6-2"/hr (some seepage)	0.08
809:					
Walkermine very gravelly loam-----	45	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Restricted permeability due to bedrock or hardpan	1.00	Fragments (>3") 20-35%	0.34

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
809:					
Bottlehill very gravelly loam-----	15	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
				Permeability .6-2"/hr (some seepage)	0.08
Logtrain gravelly loam-----	15	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability from .6 to 2"/hr (slow perc)	0.98	Bedrock (hard) from 40 to 60"	0.13
		Depth to bedrock 40 - 72"	0.59	Permeability .6-2"/hr (some seepage)	0.08
Rock outcrop, metavolcanic-----	15	Not rated		Not rated	
810:					
Dixmine very gravelly loam-----	35	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) from 40 to 60"	0.15
		Depth to bedrock 40 - 72"	0.61	Permeability .6-2"/hr (some seepage)	0.08
Mac gravelly loam-----	25	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-60" (slow perc)	0.99	Permeability .6-2"/hr (some seepage)	0.01
Spine very gravelly loam-----	25	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Restricted permeability due to bedrock or hardpan	1.00	Permeability .6-2"/hr (some seepage)	0.01
811:					
Powellton gravelly loam-----	50	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Permeability .6-2"/hr (some seepage)	0.50
Toadtown loam-----	40	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes 2 to 8%	0.83
				Permeability .6-2"/hr (some seepage)	0.68

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
812:					
Powellton gravelly loam-----	50	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability .6-2"/hr (some seepage)	0.50
Toadtown loam-----	40	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability .6-2"/hr (some seepage)	0.68
813:					
Powellton gravelly loam-----	50	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability .6-2"/hr (some seepage)	0.50
Toadtown loam-----	40	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability .6-2"/hr (some seepage)	0.68
814:					
Mountyana gravelly loam-----	80	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%	1.00
		Slopes 8 to 15%	0.16	Permeability .6-2"/hr (some seepage)	0.08
		Depth to bedrock 40 - 72"	0.08		
815:					
Mountyana gravelly loam-----	80	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability .6-2"/hr (some seepage)	0.08
		Depth to bedrock 40 - 72"	0.08		
817:					
Lydon very gravelly medial coarse sandy loam-----	80	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") 25 to 50%	0.02	Slopes 2 to 8%	0.50

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
818: Lydon very gravelly medial coarse sandy loam-----	75	Limitations Depth to bedrock < 40" Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
819: Lydon very gravelly medial coarse sandy loam-----	65	Limitations Depth to bedrock < 40" Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Rock outcrop, mudflow breccia----	20	Not rated		Not rated	
820: Lydon very gravelly medial coarse sandy loam-----	60	Limitations Depth to bedrock < 40" Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Rock outcrop, mudflow breccia----	25	Not rated		Not rated	
821: Lydon very gravelly medial coarse sandy loam-----	55	Limitations Depth to bedrock < 40" Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Rock outcrop, mudflow breccia----	30	Not rated		Not rated	
822: Bonpile gravelly medial loam----	85	Limitations Permeability from .6 to 2"/hr (slow perc) Depth to bedrock 40 - 72"	0.98 0.96	Limitations Bedrock (soft) from 40 to 60" Permeability .6-2"/hr (some seepage) Slopes 2 to 8%	0.88 0.68 0.50
823: Bonpile gravelly medial loam----	85	Limitations Slopes > 15% Permeability from .6 to 2"/hr (slow perc) Depth to bedrock 40 - 72"	1.00 0.98 0.96	Limitations Slopes > 8% Bedrock (soft) from 40 to 60" Permeability .6-2"/hr (some seepage)	1.00 0.88 0.68

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
824: Beecee very gravelly medial loam--	85	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 0.99	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.50
825: Beecee very gravelly medial loam--	60	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 0.99	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.50
Lydon very gravelly medial coarse sandy loam-----	20	Limitations Depth to bedrock < 40" Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
826: Redbone gravelly medial sandy loam	80	Limitations Seepage in bottom layer Depth to bedrock 40 - 72" Slopes 8 to 15%	1.00 0.57 0.16	Limitations Permeability > 2"/hr (seepage) Slopes > 8% Bedrock (soft) from 40 to 60"	1.00 1.00 0.11
827: Redbone gravelly medial sandy loam	80	Limitations Slopes > 15% Seepage in bottom layer Depth to bedrock 40 - 72"	1.00 1.00 0.57	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Bedrock (soft) from 40 to 60"	1.00 1.00 0.11
829: Paradiso loam-----	80	Limitations Permeability < .6"/hr in 24-60" (slow perc)	1.00	Limitations Slopes 2 to 8% Permeability .6-2"/hr (some seepage)	0.50 0.01
830: Paradiso loam-----	75	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15%	1.00 1.00	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.01

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
831: Surnuf gravelly loam-----	40	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes 8 to 15%	1.00 0.01	Limitations Slopes > 8%	1.00
Bigridge loam-----	30	Limitations Depth to bedrock 40 - 72" Permeability from .6 to 2"/hr (slow perc) Slopes 8 to 15%	0.75 0.02 0.01	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Bedrock (soft) from 40 to 60"	1.00 0.99 0.35
Spine very gravelly loam-----	15	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes 8 to 15%	1.00 1.00 0.04	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.01
832: Surnuf gravelly loam-----	40	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15%	1.00 1.00	Limitations Slopes > 8%	1.00
Bigridge loam-----	30	Limitations Slopes > 15% Depth to bedrock 40 - 72" Permeability from .6 to 2"/hr (slow perc)	1.00 0.75 0.02	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Bedrock (soft) from 40 to 60"	1.00 0.99 0.35
Spine very gravelly loam-----	15	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.01
833: Surnuf gravelly loam-----	60	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15%	1.00 1.00	Limitations Slopes > 8%	1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
833: Bigridge loam-----	15	Limitations Slopes > 15% Depth to bedrock 40 - 72" Permeability from .6 to 2"/hr (slow perc)	1.00 0.75 0.02	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Bedrock (soft) from 40 to 60"	1.00 0.99 0.35
Spine very gravelly loam-----	15	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.01
834: Hietanen gravelly loam-----	50	Limitations Permeability from .6 to 2"/hr (slow perc) Depth to bedrock 40 - 72"	0.98 0.78	Limitations Slopes 2 to 8% Bedrock (soft) from 40 to 60" Permeability .6-2"/hr (some seepage)	0.50 0.42 0.02
Mac gravelly loam-----	30	Limitations Depth to bedrock < 40" Permeability < .6"/hr in 24-60" (slow perc)	1.00 0.99	Limitations Bedrock (soft) < 40" depth Slopes 2 to 8% Permeability .6-2"/hr (some seepage)	1.00 0.83 0.01
835: Hietanen gravelly loam-----	60	Limitations Slopes > 15% Permeability from .6 to 2"/hr (slow perc) Depth to bedrock 40 - 72"	1.00 0.98 0.78	Limitations Slopes > 8% Bedrock (soft) from 40 to 60" Permeability .6-2"/hr (some seepage)	1.00 0.42 0.02
Mac gravelly loam-----	20	Limitations Depth to bedrock < 40" Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00 0.99	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.01

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
836:					
Hietanen gravelly loam-----	50	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability from .6 to 2"/hr (slow perc)	0.98	Bedrock (soft) from 40 to 60"	0.42
		Depth to bedrock 40 - 72"	0.78	Permeability .6-2"/hr (some seepage)	0.02
Mac gravelly loam-----	20	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-60" (slow perc)	0.99	Permeability .6-2"/hr (some seepage)	0.01
Spine very gravelly loam-----	15	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Restricted permeability due to bedrock or hardpan	1.00	Permeability .6-2"/hr (some seepage)	0.01
837:					
Hietanen gravelly loam-----	35	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability from .6 to 2"/hr (slow perc)	0.98	Bedrock (soft) from 40 to 60"	0.42
		Depth to bedrock 40 - 72"	0.78	Permeability .6-2"/hr (some seepage)	0.02
Spine very gravelly loam-----	25	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Restricted permeability due to bedrock or hardpan	1.00	Permeability .6-2"/hr (some seepage)	0.01
Mac gravelly loam-----	20	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-60" (slow perc)	0.99	Permeability .6-2"/hr (some seepage)	0.01

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
838:					
Dixmine very gravelly loam-----	35	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72"	1.00 1.00 0.61	Limitations Slopes > 8% Bedrock (soft) from 40 to 60" Permeability .6-2"/hr (some seepage)	1.00 0.15 0.08
Spine very gravelly loam-----	25	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.01
Mac gravelly loam-----	25	Limitations Depth to bedrock < 40" Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00 0.99	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.01
839:					
Chawanakee gravelly sandy loam----	55	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Permeability > 2"/hr (seepage) Slopes > 8%	1.00 1.00 1.00
Billscabin gravelly sandy loam----	35	Limitations Seepage in bottom layer Slopes 8 to 15%	1.00 0.16	Limitations Permeability > 2"/hr (seepage) Slopes > 8%	1.00 1.00
841:					
Billscabin gravelly sandy loam----	50	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
Bonneyridge sandy loam-----	35	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
842:					
Billscabin gravelly sandy loam----	60	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
Bonneyridge sandy loam-----	25	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
846:					
Bonneyridge sandy loam-----	60	Limitations Seepage in bottom layer Slopes 8 to 15%	1.00 0.01	Limitations Permeability > 2"/hr (seepage) Slopes > 8%	1.00 1.00
Lewisflat loam-----	20	Limitations Seepage in bottom layer Permeability from .6 to 2"/hr (slow perc) Slopes 8 to 15%	1.00 0.32 0.01	Limitations Permeability > 2"/hr (seepage) Slopes > 8%	1.00 1.00
847:					
Bonneyridge sandy loam-----	60	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
Lewisflat loam-----	20	Limitations Slopes > 15% Seepage in bottom layer Permeability from .6 to 2"/hr (slow perc)	1.00 1.00 0.32	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
848:					
Bonneyridge sandy loam-----	60	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
Lewisflat loam-----	20	Limitations Slopes > 15% Seepage in bottom layer Permeability from .6 to 2"/hr (slow perc)	1.00 1.00 0.32	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
850: Lewisflat loam-----	85	Limitations Seepage in bottom layer Permeability from .6 to 2"/hr (slow perc)	1.00 0.32	Limitations Permeability > 2"/hr (seepage) Slopes 2 to 8%	1.00 0.17
851: Lewisflat loam-----	80	Limitations Slopes > 15% Seepage in bottom layer Permeability from .6 to 2"/hr (slow perc)	1.00 1.00 0.32	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
852: Lewisflat loam-----	75	Limitations Slopes > 15% Seepage in bottom layer Permeability from .6 to 2"/hr (slow perc)	1.00 1.00 0.32	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
860: Toadtown gravelly loam-----	60	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes 8 to 15%	1.00 0.01	Limitations Slopes > 8%	1.00
Powellton silt loam-----	20	Limitations Permeability < .6"/hr in 24-60" (slow perc) Seepage in bottom layer Slopes 8 to 15%	1.00 1.00 0.01	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.32
861: Toadtown gravelly loam-----	60	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15%	1.00 1.00	Limitations Slopes > 8%	1.00
Powellton silt loam-----	20	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.32

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
862: Toadtown gravelly loam-----	60	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15%	1.00 1.00	Limitations Slopes > 8%	1.00
Powellton silt loam-----	20	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.32
863: Toadtown gravelly loam-----	60	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15%	1.00 1.00	Limitations Slopes > 8%	1.00
Powellton silt loam-----	20	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.32
880: Sites taxadjunct gravelly loam----	50	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes 8 to 15%	1.00 0.01	Limitations Slopes > 8%	1.00
Jocal taxadjunct gravelly loam----	35	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72" Slopes 8 to 15%	0.99 0.69 0.01	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage) Bedrock (soft) from 40 to 60"	1.00 0.82 0.26
881: Sites taxadjunct gravelly loam----	50	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00	Limitations Slopes > 8%	1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
881: Jocal taxadjunct gravelly loam----	35	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72"	1.00 0.99 0.69	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage) Bedrock (soft) from 40 to 60"	1.00 0.82 0.26
882: Sites taxadjunct gravelly loam----	50	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00	Limitations Slopes > 8%	1.00
Jocal taxadjunct gravelly loam----	35	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72"	1.00 0.99 0.69	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage) Bedrock (soft) from 40 to 60"	1.00 0.82 0.26
883: Sites taxadjunct gravelly loam----	50	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00	Limitations Slopes > 8%	1.00
Jocal taxadjunct gravelly loam----	40	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72"	1.00 0.99 0.69	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage) Bedrock (soft) from 40 to 60"	1.00 0.82 0.26
885: Rogerville silt loam-----	75	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72" Slopes 8 to 15%	1.00 0.73 0.01	Limitations Slopes > 8% Bedrock (soft) from 40 to 60" Permeability .6-2"/hr (some seepage)	1.00 0.32 0.01
886: Rogerville silt loam-----	80	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15% Depth to bedrock 40 - 72"	1.00 1.00 0.73	Limitations Slopes > 8% Bedrock (soft) from 40 to 60" Permeability .6-2"/hr (some seepage)	1.00 0.32 0.01

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
892: Rogerville silt loam-----	85	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15% Depth to bedrock 40 - 72"	1.00 1.00 0.73	Limitations Slopes > 8% Bedrock (soft) from 40 to 60" Permeability .6-2"/hr (some seepage)	1.00 0.32 0.01
893: Rogerville silt loam-----	85	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15% Depth to bedrock 40 - 72"	1.00 1.00 0.73	Limitations Slopes > 8% Bedrock (soft) from 40 to 60" Permeability .6-2"/hr (some seepage)	1.00 0.32 0.01
902: Lava flows, Lovejoy basalt-----	50	Not rated		Not rated	
Lumpkin gravelly medial sandy loam	40	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Fragments (>3") >50%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Permeability > 2"/hr (seepage) Fragments (>3") > 35%	1.00 1.00 1.00
903: Mudwash gravelly medial sandy loam	45	Limitations Permeability < .6"/hr in 24-60" (slow perc) Permeability > 6"/hr in 24-60" (seepage and poor filter) Slopes 8 to 15%	1.00 1.00 0.01	Limitations Permeability > 2"/hr (seepage) Slopes > 8%	1.00 1.00
Timberisland very gravelly medial sandy loam-----	25	Limitations Slopes > 15% Seepage in bottom layer Depth to bedrock 40 - 72"	1.00 1.00 0.86	Limitations Permeability > 2"/hr (seepage) Slopes > 8% Bedrock (hard) from 40 to 60"	1.00 1.00 0.61
Lavatop gravelly medial fine sandy loam-----	20	Limitations Depth to bedrock < 40" Fragments (>3") 25 to 50% Slopes 8 to 15%	1.00 0.01 0.01	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 0.99

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
904: Lava flows, Lovejoy basalt-----	60	Not rated		Not rated	
Lavatop gravelly medial fine sandy loam-----	20	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.01	Permeability > 2"/hr (seepage)	0.99
905: Lava flows, Lovejoy basalt-----	60	Not rated		Not rated	
Lumpkin gravelly medial sandy loam	30	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Restricted permeability due to bedrock or hardpan	1.00	Permeability > 2"/hr (seepage)	1.00
906: Lava flows, Lovejoy basalt-----	60	Not rated		Not rated	
Lumpkin gravelly medial sandy loam	30	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Restricted permeability due to bedrock or hardpan	1.00	Permeability > 2"/hr (seepage)	1.00
911: Endoaquolls loam-----	75	Limitations		Limitations	
		Flooding	1.00	Saturation at < 3.5' depth	1.00
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Frequent or occasional flooding	1.00
		Saturation < 4' depth	1.00	Slopes 2 to 8%	0.17
923: Powderhouse medial sandy loam-----	45	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Slopes 8 to 15%	0.01	Slopes > 8%	1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
923:					
McNair medial coarse sandy loam---	25	Limitations		Limitations	
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Depth to bedrock 40 - 72"	0.41	Slopes > 8%	1.00
		Slopes 8 to 15%	0.01	Bedrock (soft) from 40 to 60"	0.02
Greenwell medial sandy loam-----	20	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Slopes 8 to 15%	0.01	Permeability > 2"/hr (seepage)	1.00
				Slopes > 8%	1.00
924:					
Powderhouse medial sandy loam-----	45	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
McNair medial coarse sandy loam---	25	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Depth to bedrock 40 - 72"	0.41	Bedrock (soft) from 40 to 60"	0.02
Greenwell medial sandy loam-----	20	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
925:					
Powderhouse medial sandy loam-----	45	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
McNair medial coarse sandy loam---	25	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Depth to bedrock 40 - 72"	0.41	Bedrock (soft) from 40 to 60"	0.02
Greenwell medial sandy loam-----	20	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
930: Shakeridge gravelly medial coarse sandy loam-----	50	Limitations Slopes 8 to 15%	0.01	Limitations Permeability > 2"/hr (seepage) Slopes > 8%	1.00 1.00
Timberisland very gravelly medial sandy loam-----	40	Limitations Seepage in bottom layer Depth to bedrock 40 - 72" Fragments (>3") 25 to 50%	1.00 0.86 0.05	Limitations Permeability > 2"/hr (seepage) Slopes > 8% Bedrock (hard) from 40 to 60"	1.00 1.00 0.61
931: Shakeridge gravelly medial coarse sandy loam-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
Mudwash gravelly medial sandy loam-----	25	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00 1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
Timberisland very gravelly medial sandy loam-----	15	Limitations Slopes > 15% Seepage in bottom layer Depth to bedrock 40 - 72"	1.00 1.00 0.86	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Bedrock (hard) from 40 to 60"	1.00 1.00 0.61
932: Shakeridge gravelly medial coarse sandy loam-----	50	Limitations Slopes > 15%	1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
932: Mudwash gravelly medial sandy loam-----	35	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00 1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
933: Shakeridge gravelly medial coarse sandy loam-----	80	Limitations Slopes > 15%	1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
934: Mudwash gravelly medial sandy loam-----	80	Limitations Permeability < .6"/hr in 24-60" (slow perc) Permeability > 6"/hr in 24-60" (seepage and poor filter) Slopes 8 to 15%	1.00 1.00 0.01	Limitations Permeability > 2"/hr (seepage) Slopes > 8%	1.00 1.00
939: Fluvaquentic Humaquepts very fine sandy loam-----	85	Limitations Saturation < 4' depth Permeability < .6"/hr in 24-60" (slow perc) Rare flooding	1.00 1.00 0.40	Limitations Saturation at < 3.5' depth Permeability > 2"/hr (seepage) Rare flooding	1.00 1.00 0.50
940: Dejonah gravelly loam-----	50	Limitations Permeability from .6 to 2"/hr (slow perc) Depth to bedrock 40 - 72" Slopes 8 to 15%	0.32 0.01 0.01	Limitations Permeability > 2"/hr (seepage) Slopes > 8%	1.00 1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
940: Stagpoint loam-----	30	Limitations Seepage in bottom layer Permeability < .6"/hr in 24-60" (slow perc) Fragments (>3") 25 to 50%	1.00 0.99 0.46	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.98
941: Dejonah gravelly loam-----	50	Limitations Slopes > 15% Permeability from .6 to 2"/hr (slow perc) Depth to bedrock 40 - 72"	1.00 0.32 0.01	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
Stagpoint loam-----	30	Limitations Slopes > 15% Seepage in bottom layer Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00 0.99	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.98
942: Stagpoint loam-----	50	Limitations Slopes > 15% Seepage in bottom layer Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00 0.99	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.98
Dejonah gravelly loam-----	30	Limitations Slopes > 15% Permeability from .6 to 2"/hr (slow perc) Depth to bedrock 40 - 72"	1.00 0.32 0.01	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
948: Stagpoint loam-----	55	Limitations Slopes > 15% Seepage in bottom layer Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00 0.99	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.98

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
948: Dejonah gravelly loam-----	35	Limitations Slopes > 15% Permeability from .6 to 2"/hr (slow perc) Depth to bedrock 40 - 72"	1.00 0.32 0.01	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
949: Rogerville taxadjunct fine sandy loam-----	80	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72"	1.00 0.99 0.41	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Bedrock (soft) from 40 to 60"	1.00 0.99 0.02
950: Lumpkin taxadjunct very gravelly medial very fine sandy loam-----	40	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8%	1.00 1.00
Rock outcrop, olivine basalt, andesite, or mudflow-----	25	Not rated		Not rated	
Powderhouse medial sandy loam-----	20	Limitations Depth to bedrock < 40" Seepage in bottom layer Slopes 8 to 15%	1.00 1.00 0.01	Limitations Bedrock (soft) < 40" depth Permeability > 2"/hr (seepage) Slopes > 8%	1.00 1.00 1.00
951: Lumpkin taxadjunct very gravelly medial very fine sandy loam-----	40	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8%	1.00 1.00
Rock outcrop, andesite-----	25	Not rated		Not rated	

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
951: Powderhouse medial sandy loam-----	20	Limitations Depth to bedrock < 40" Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
960: Surnuf gravelly loam, high elevation-----	85	Limitations Permeability < .6"/hr in 24-60" (slow perc)	1.00	Limitations Slopes 2 to 8%	0.50
961: Surnuf gravelly loam, high elevation-----	85	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes 8 to 15%	1.00 0.37	Limitations Slopes > 8%	1.00
962: Surnuf gravelly loam, high elevation-----	85	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00	Limitations Slopes > 8%	1.00
963: Surnuf gravelly loam, high elevation-----	85	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00	Limitations Slopes > 8%	1.00
990: Riverwash, frequently flooded-----	100	Limitations Flooding Saturation < 4' depth	1.00 1.00	Limitations Frequent or occasional flooding Saturation at < 3.5' depth	1.00 1.00

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitations	Value	Limitations	Value
991: Xerofluvents sandy loam, frequently flooded-----	75	Limitations Flooding Saturation < 4' depth Seepage in bottom layer	 1.00 1.00 1.00	Limitations Frequent or occasional flooding Permeability > 2"/hr (seepage) Saturation from 3.5 to 5' depth	 1.00 1.00 0.91
995: Pits, gravel-----	100	Not rated		Not rated	
996: Dumps, excavated material-----	100	Not rated		Not rated	
997: Pits-----	95	Not rated		Not rated	
998: Dumps, landfill-----	100	Not rated		Not rated	
999: Water-----	100	Not rated		Not rated	
DAM: Dam, manmade-----	100	Not rated		Not rated	

The interpretation for septic tank absorption fields evaluates the following soil properties at variable depths in the soil: flooding; ponding; wetness; slope; subsidence of organic soils; depth to hard or soft bedrock; depth to a cemented pan; permeability that is too rapid, allowing seepage; and permeability that is too slow or an impermeable layer at a shallow depth.

The interpretation for sewage lagoons evaluates the following soil properties at variable depths in the soil: flooding, ponding, wetness, slope, organic Unified classes for low strength (PT, OL, and OH), depth to hard or soft bedrock, depth to a cemented pan, fragments larger than 3 inches in size, and permeability that is too rapid, allowing seepage.

Table 17b.--Sanitary Facilities

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The rating is based on the limitation with the highest value. Only the three highest value limitations are listed. There may be more limitations. Fine-earth fractions and rock fragments are reported on a weight basis. An explanation of the rating criteria and of the abbreviations used in describing the limitations is given at the end of the table)

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
100: Anita clay-----	60	Limitations Flooding >= occasional Saturation < 6' depth Ponding (any duration)	1.00 1.00 1.00	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00
Galt clay-----	25	Limitations Flooding >= occasional Saturation < 6' depth Ponding (any duration)	1.00 1.00 1.00	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00
104: Bosquejo clay-----	85	Limitations Saturation < 6' depth Ponding (any duration) Rare flooding	1.00 1.00 0.50	Limitations Ponding (any duration) Saturation < 5' depth Rare flooding	1.00 1.00 0.40	Not suited Ponding (any duration) Silty clay or clay 10-60" Saturation from 18 to 40" depth	1.00 1.00 0.01
105: Busacca clay loam-----	85	Limitations Saturation < 6' depth Ponding (any duration) Rare flooding	1.00 1.00 0.50	Limitations Ponding (any duration) Saturation < 5' depth Rare flooding	1.00 1.00 0.40	Not suited Ponding (any duration) Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
108: Tuscan gravelly loam----	45	Limitations Saturation < 6' depth Clay or silty clay	1.00 1.00	Limitations Depth to pan < 40" Saturation < 5' depth	1.00 1.00	Not suited Depth to pan < 40" Saturation < 18" depth Silty clay or clay 10-60"	1.00 1.00 1.00

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
108:							
Igo gravelly loam-----	20	Limitations		Limitations		Not suited	
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pan < 40"	1.00
		Clay loam, silty clay, silty clay loam	0.50	Saturation < 5' depth	1.00	Saturation < 18" depth	1.00
						Silt or clay textures from 10-60"	0.50
Anita clay-----	15	Limitations		Limitations		Not suited	
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pan < 40"	1.00
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Clay or silty clay	1.00	Saturation < 5' depth	1.00	Saturation < 18" depth	1.00
109:							
Bosquejo clay loam-----	85	Limitations		Limitations		Not suited	
		Saturation < 6' depth	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Ponding (any duration)	1.00	Saturation < 5' depth	1.00	Saturation from 18 to 40" depth	0.01
		Rare flooding	0.50	Rare flooding	0.40		
110:							
Bosquejo silt loam, overwash, occasionally flooded-----	90	Limitations		Limitations		Not suited	
		Flooding >= occasional	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Silty clay or clay 10-60"	1.00
		Ponding (any duration)	1.00	Occasional flooding	0.60	Packing (OL, OH, CH, or MH)	1.00
111yu:							
Auburn loam-----	40	Limitations		Limitations		Not suited	
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63
Sobrante loam-----	40	Limitations		Limitations		Not suited	
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay textures from 10-60"	0.50

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
114yu: Auburn gravelly loam----	40	Limitations Lithic or paralithic bedrock < 72" Slopes 8 to 15%	1.00 0.63	Limitations Bedrock depth < 40" Slopes 8 to 15%	1.00 0.63	Not suited Depth to bedrock < 40" Slopes 8 to 15% Fragments (<75mm) 25-50%	1.00 0.63 0.11
Sobrante gravelly loam--	40	Limitations Lithic or paralithic bedrock < 72" Slopes 8 to 15% Clay loam, silty clay, silty clay loam	1.00 0.63 0.50	Limitations Bedrock depth < 40" Slopes 8 to 15%	1.00 0.63	Not suited Depth to bedrock < 40" Slopes 8 to 15% Silt or clay textures from 10-60"	1.00 0.63 0.50
118: Xerorthents, tailings---	80	Not rated		Limitations Seepage in 20-40" depth Occasional flooding	1.00 0.60	Not rated	
118co: Clear Lake clay, frequently flooded-----	90	Limitations Flooding >= occasional Saturation < 6' depth Clay or silty clay	1.00 1.00 1.00	Limitations Saturation < 5' depth Frequent flooding	1.00 0.80	Not suited Silty clay or clay 10-60" Packing (OL, OH, CH, or MH) Clay or silty clay	1.00 1.00 1.00
119: Xerorthents, tailings---	70	Not rated		Limitations Seepage in 20-40" depth Occasional flooding	1.00 0.60	Not rated	
Urban land-----	30	Not rated		Not rated		Not rated	
119yu: Auburn gravelly loam----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.11

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
119yu: Sobrante gravelly loam--	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Silt or clay textures from 10-60"	1.00 1.00 0.50
Rock outcrop-----	20	Not rated		Not rated		Not rated	
120: Gridley taxadjunct clay loam-----	80	Limitations Saturation < 6' depth Ponding (any duration) Rare flooding	1.00 1.00 0.50	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00
121: Boga loam-----	45	Limitations Saturation < 6' depth Ponding (any duration) Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Ponding (any duration) Saturation < 5' depth	1.00 1.00	Not suited Ponding (any duration) Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
Loemstone loam-----	40	Limitations Saturation < 6' depth Ponding (any duration)	1.00 1.00	Limitations Ponding (any duration) Saturation < 5' depth	1.00 1.00	Not suited Ponding (any duration) Saturation from 18 to 40" depth	1.00 0.14
121su: Columbia fine sandy loam, frequently flooded-----	80	Limitations Flooding >= occasional Saturation < 6' depth Seepage in bottom layer	1.00 1.00 1.00	Limitations Saturation < 5' depth Seepage in 20-40" depth Frequent flooding	1.00 1.00 0.80	Suited Permeability > 2.0 in/hr	0.50
125: Gridley taxadjunct loam	65	Limitations Saturation < 6' depth Ponding (any duration) Rare flooding	1.00 1.00 0.50	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
125: Calcic Haploxerolls sandy loam-----	20	Limitations Saturation < 6' depth Rare flooding	1.00 0.50	Limitations Saturation < 5' depth Seepage in 20-40" depth Rare flooding	1.00 1.00 0.40	Suited Saturation from 18 to 40" depth	0.35
126: Liveoak sandy loam-----	85	Limitations Saturation < 6' depth Seepage in bottom layer	1.00 1.00	Limitations Saturation < 5' depth Seepage in 20-40" depth Very rare flooding	1.00 1.00 0.20	Suited Saturation from 18 to 40" depth Permeability > 2.0 in/hr	0.47 0.02
127: Gridley taxadjunct loam	85	Limitations Saturation < 6' depth Ponding (any duration) Rare flooding	1.00 1.00 0.50	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00
130: Eastbiggs loam-----	80	Limitations Saturation < 6' depth Clay or silty clay Depth to thin cemented pan	1.00 1.00 0.50	Limitations Depth to pan < 40" Saturation < 5' depth	1.00 1.00	Not suited Depth to pan < 40" Saturation < 18" depth Silty clay or clay 10-60"	1.00 1.00 1.00
133: Eastbiggs loam-----	50	Limitations Saturation < 6' depth Clay or silty clay Depth to thin cemented pan	1.00 1.00 0.50	Limitations Depth to pan < 40" Saturation < 5' depth	1.00 1.00	Not suited Depth to pan < 40" Saturation < 18" depth Silty clay or clay 10-60"	1.00 1.00 1.00
Galt clay loam-----	40	Limitations Saturation < 6' depth Ponding (any duration) Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00
136: Duric Xerarents, cut----	35	Limitations Saturation < 6' depth Ponding (any duration) Clay or silty clay	1.00 1.00 1.00	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
136: Duric Xerarents, fill---	30	Limitations Saturation < 6' depth Ponding (any duration) Depth to thin cemented pan	1.00 1.00 0.50	Limitations Ponding (any duration) Saturation < 5' depth Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Ponding (any duration) Depth to pan from 40-60" Permeability > 2.0 in/hr	1.00 0.61 0.02
Eastbiggs fine sandy loam, leveled-----	25	Limitations Saturation < 6' depth Ponding (any duration) Depth to thin cemented pan	1.00 1.00 0.50	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00
138su: Liveoak sandy clay loam	85	Limitations Saturation < 6' depth	1.00	Limitations Saturation < 5' depth Very rare flooding	1.00 0.20	Suited Saturation from 18 to 40" depth	0.47
139su: Liveoak taxadjunct loam, frequently flooded-----	45	Limitations Flooding >= occasional Saturation < 6' depth Depth to thin cemented pan	1.00 1.00 0.50	Limitations Saturation < 5' depth Frequent flooding Depth to pan 40-60"	1.00 0.80 0.14	Suited Depth to pan from 40-60"	0.14
Galt taxadjunct clay loam, frequently flooded-----	40	Limitations Flooding >= occasional Saturation < 6' depth Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Depth to pan < 40" Saturation < 5' depth Frequent flooding	1.00 1.00 0.80	Not suited Depth to pan < 40" Saturation < 18" depth Silt or clay textures from 10-60"	1.00 1.00 0.50
143su: Marcum clay loam-----	45	Limitations Lithic or paralithic bedrock < 72" Clay or silty clay	1.00 1.00	Limitations Bedrock depth from 40-60"	0.94	Not suited Silty clay or clay 10-60" Packing (OL, OH, CH, or MH) Clay or silty clay	1.00 1.00 1.00
Gridley clay loam-----	40	Limitations Lithic or paralithic bedrock < 72" Clay or silty clay	1.00 1.00	Limitations Bedrock depth < 40"	1.00	Not suited Depth to bedrock < 40" Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
149yu: Flanly sandy loam-----	80	Limitations Lithic or paralithic bedrock < 72" Slopes 8 to 15%	1.00 0.63	Limitations Bedrock depth < 40" Slopes 8 to 15%	1.00 0.63	Not suited Depth to bedrock < 40" Slopes 8 to 15%	1.00 0.63
150: Columbia stratified sand to fine sandy loam	85	Limitations Flooding >= occasional Saturation < 6' depth Seepage in bottom layer	1.00 1.00 1.00	Limitations Saturation < 5' depth Seepage in 20-40" depth Frequent flooding	1.00 1.00 0.80	Suited Permeability > 2.0 in/hr Saturation from 18 to 40" depth	0.63 0.01
150su: Olashes sandy loam-----	85	Limitations Seepage in bottom layer	1.00	No limitations		Suited	
151yu: Flanly sandy loam-----	80	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15%	1.00 1.00
152: Gianella fine sandy loam, frequently flooded-----	85	Limitations Flooding >= occasional Seepage in bottom layer	1.00 1.00	Limitations Seepage in 20-40" depth Frequent flooding	1.00 0.80	Suited Permeability > 2.0 in/hr	0.12
153: Gianella sandy loam, frequently flooded-----	85	Limitations Flooding >= occasional Seepage in bottom layer	1.00 1.00	Limitations Seepage in 20-40" depth Frequent flooding	1.00 0.80	Suited Permeability > 2.0 in/hr	0.50
154: Gianella silt loam, frequently flooded-----	85	Limitations Flooding >= occasional Seepage in bottom layer	1.00 1.00	Limitations Seepage in 20-40" depth Frequent flooding	1.00 0.80	Not suited Permeability > 2.0 in/hr	1.00

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
158: Gianella fine sandy loam, occasionally flooded-----	85	Limitations Flooding >= occasional Seepage in bottom layer	1.00 1.00	Limitations Seepage in 20-40" depth Occasional flooding	1.00 0.60	Not suited Permeability > 2.0 in/hr	1.00
160: Gianella loam, occasionally flooded---	85	Limitations Flooding >= occasional Seepage in bottom layer	1.00 1.00	Limitations Seepage in 20-40" depth Occasional flooding	1.00 0.60	Suited Permeability > 2.0 in/hr	0.37
161: Gianella fine sandy loam, rarely flooded---	90	Limitations Seepage in bottom layer Rare flooding	1.00 0.50	Limitations Seepage in 20-40" depth Rare flooding	1.00 0.40	Not suited Permeability > 2.0 in/hr	1.00
162: Gianella loam, rarely flooded-----	90	Limitations Seepage in bottom layer Rare flooding	1.00 0.50	Limitations Seepage in 20-40" depth Rare flooding	1.00 0.40	Suited Permeability > 2.0 in/hr	0.37
163yu: Holillipah loamy sand---	85	Limitations Flooding >= occasional Seepage in bottom layer	1.00 1.00	Limitations Seepage in 20-40" depth Frequent flooding	1.00 0.80	Suited Permeability > 2.0 in/hr	0.50
165yu: Holland loam-----	40	Limitations Slopes > 15% Clay loam, silty clay, silty clay loam	1.00 0.50	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
Hoda loam-----	25	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Not suited Packing (OL, OH, CH, or MH) Slopes > 15% Silt or clay textures from 10-60"	1.00 1.00 0.50

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
165yu: Hotaw loam-----	20	Limitations		Limitations		Not suited	
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
173yu: Hotaw loam-----	45	Limitations		Limitations		Not suited	
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
Chawanakee gravelly sandy loam-----	20	Limitations		Limitations		Not suited	
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
		Seepage in bottom layer	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Slopes > 15%	1.00			Permeability > 2.0 in/hr	0.88
Holland loam-----	15	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay textures from 10-60"	0.50
						Clay loam, silty clay, silty clay loam	0.50
175: Farwell clay loam, rarely flooded-----	85	Limitations		Limitations		Suited	
		Rare flooding	0.50	Rare flooding	0.40	Silt or clay textures from 10-60"	0.50
		Clay loam, silty clay, silty clay loam	0.50			Clay loam, silty clay, silty clay loam	0.50
176: Farwell loam, occasionally flooded---	85	Limitations		Limitations		Suited	
		Flooding >= occasional	1.00	Occasional flooding	0.60		

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
176yu: Jocal loam-----	80	Limitations Slopes 8 to 15% Clay loam, silty clay, silty clay loam	0.63 0.50	Limitations Slopes 8 to 15%	0.63	Suited Slopes 8 to 15% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	0.63 0.50 0.50
177: Farwell silt loam, occasionally flooded---	85	Limitations Flooding >= occasional Seepage in bottom layer Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Seepage in 20-40" depth Occasional flooding	1.00 0.60	Suited Clay loam, silty clay, silty clay loam Silt or clay textures from 10-60" Permeability > 2.0 in/hr	0.50 0.50 0.04
178: Arbuckle gravelly loam--	87	Limitations Rare flooding	0.50	Limitations Rare flooding	0.40	Suited Fragments (<75mm) 25-50%	0.47
179: Moda taxadjunct loam----	65	Limitations Saturation < 6' depth Ponding (any duration) Clay or silty clay	1.00 1.00 1.00	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00
Arbuckle gravelly loam--	20	Limitations Rare flooding	0.50	Limitations Rare flooding	0.40	Suited Fragments (<75mm) 25-50%	0.47
180: Dodgeland silty clay loam, occasionally flooded-----	85	Limitations Flooding >= occasional Saturation < 6' depth Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 5' depth Occasional flooding	1.00 1.00 0.60	Not suited Ponding (any duration) Saturation < 18" depth Silty clay or clay 10-60"	1.00 1.00 1.00

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
181: Dodgeland silty clay loam, frequently flooded-----	80	Limitations Flooding >= occasional Saturation < 6' depth Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 5' depth Frequent flooding	1.00 1.00 0.80	Not suited Ponding (any duration) Saturation < 18" depth Silty clay or clay 10-60"	1.00 1.00 1.00
188yu: Mariposa taxadjunct gravelly loam-----	80	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Silt or clay textures from 10-60"	1.00 1.00 0.50
189: Esquon silt loam, overwash-----	90	Limitations Saturation < 6' depth Ponding (any duration) Clay or silty clay	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 5' depth Rare flooding	1.00 1.00 0.40	Not suited Ponding (any duration) Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
189yu: Mariposa taxadjunct gravelly loam-----	80	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Silt or clay textures from 10-60"	1.00 1.00 0.50
196yu: Mildred cobbly loam-----	80	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay or silty clay	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Silty clay or clay 10-60"	1.00 1.00 1.00

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
200: Parrott silt loam, occasionally flooded---	85	Limitations Flooding >= occasional Saturation < 6' depth Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Occasional flooding	1.00 0.60	Not suited Ponding (any duration) Permeability > 2.0 in/hr	1.00 0.01
201: Parrott silt loam, frequently flooded----	85	Limitations Flooding >= occasional Saturation < 6' depth Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Frequent flooding	1.00 0.80	Not suited Ponding (any duration) Permeability > 2.0 in/hr	1.00 0.01
203: Kusalslough silty clay loam, occasionally flooded-----	85	Limitations Flooding >= occasional Saturation < 6' depth Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 5' depth Occasional flooding	1.00 1.00 0.60	Not suited Ponding (any duration) Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
205: Parrott silt loam, frequently flooded----	50	Limitations Flooding >= occasional Saturation < 6' depth Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Frequent flooding	1.00 0.80	Not suited Ponding (any duration) Permeability > 2.0 in/hr	1.00 0.01
Vermet silt loam, frequently flooded----	35	Limitations Flooding >= occasional Saturation < 6' depth Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 5' depth Frequent flooding	1.00 1.00 0.80	Not suited Ponding (any duration) Saturation < 18" depth Silt or clay textures from 10-60"	1.00 1.00 0.50
206: Islandbar sandy loam----	60	Limitations Seepage in bottom layer Slopes 8 to 15%	1.00 0.01	Limitations Seepage in 20-40" depth Slopes 8 to 15%	1.00 0.01	Not suited Permeability > 2.0 in/hr Slopes 8 to 15%	1.00 0.01

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
206: Chawanakee gravelly sandy loam-----	30	Limitations Lithic or paralithic bedrock < 72" Seepage in bottom layer Slopes 8 to 15%	1.00 1.00 0.01	Limitations Bedrock depth < 40" Slopes 8 to 15%	1.00 0.01	Not suited Depth to bedrock < 40" Permeability > 2.0 in/hr Fragments (<75mm) 25-50%	1.00 0.88 0.21
207: Islandbar sandy loam----	60	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Permeability > 2.0 in/hr	1.00 1.00
Chawanakee gravelly sandy loam-----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Permeability > 2.0 in/hr	1.00 1.00 0.88
208: Islandbar sandy loam----	60	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Permeability > 2.0 in/hr	1.00 1.00
Chawanakee gravelly sandy loam-----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Permeability > 2.0 in/hr	1.00 1.00 0.88
209: Islandbar sandy loam----	60	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Permeability > 2.0 in/hr	1.00 1.00
Chawanakee gravelly sandy loam-----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Permeability > 2.0 in/hr	1.00 1.00 0.88

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
210:							
Featherfalls sandy loam	50	Limitations Fragments (3-10") 15-35% Slopes 8 to 15%	0.10 0.01	Limitations Slopes 8 to 15%	0.01	Suited Slopes 8 to 15%	0.01
Islandbar sandy loam----	35	Limitations Seepage in bottom layer Slopes 8 to 15%	1.00 0.01	Limitations Seepage in 20-40" depth Slopes 8 to 15%	1.00 0.01	Not suited Permeability > 2.0 in/hr Slopes 8 to 15%	1.00 0.01
211:							
Featherfalls sandy loam	55	Limitations Slopes > 15% Fragments (3-10") 15-35%	1.00 0.10	Limitations Slopes > 15%	1.00	Not suited Slopes > 15%	1.00
Islandbar sandy loam----	35	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Permeability > 2.0 in/hr	1.00 1.00
212:							
Featherfalls sandy loam	55	Limitations Slopes > 15% Fragments (3-10") 15-35%	1.00 0.10	Limitations Slopes > 15%	1.00	Not suited Slopes > 15%	1.00
Islandbar sandy loam----	35	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Permeability > 2.0 in/hr	1.00 1.00
213:							
Featherfalls sandy loam	45	Limitations Slopes > 15% Fragments (3-10") 15-35%	1.00 0.10	Limitations Slopes > 15%	1.00	Not suited Slopes > 15%	1.00
Islandbar sandy loam----	35	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Permeability > 2.0 in/hr	1.00 1.00
214:							
Crystalhill gravelly coarse sandy loam-----	35	Limitations Lithic or paralithic bedrock < 72" Seepage in bottom layer Slopes 8 to 15%	1.00 1.00 0.16	Limitations Seepage in 20-40" depth Slopes 8 to 15%	1.00 0.16	Not suited Permeability > 2.0 in/hr Slopes 8 to 15%	1.00 0.16

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
214: Oregongulch gravelly sandy loam-----	20	Limitations Lithic or paralithic bedrock < 72" Seepage in bottom layer Slopes 8 to 15%	1.00 1.00 0.16	Limitations Seepage in 20-40" depth Bedrock depth < 40" Slopes 8 to 15%	1.00 1.00 0.16	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes 8 to 15%	1.00 1.00 0.16
Craigsaddle coarse sandy loam-----	20	Limitations Lithic or paralithic bedrock < 72"	1.00	Limitations Seepage in 20-40" depth Bedrock depth from 40-60"	1.00 0.01	Suited Depth to bedrock 40-60"	0.01
Rock outcrop, trondhemite-----	10	Not rated		Not rated		Not rated	
215: Crystalhill gravelly coarse sandy loam-----	35	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Permeability > 2.0 in/hr	1.00 1.00
Oregongulch gravelly sandy loam-----	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth Bedrock depth < 40"	1.00 1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Craigsaddle coarse sandy loam-----	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth Bedrock depth from 40-60"	1.00 1.00 0.01	Not suited Slopes > 15% Depth to bedrock 40-60"	1.00 0.01
Rock outcrop, trondhemite-----	10	Not rated		Not rated		Not rated	

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
216:							
Crystalhill gravelly coarse sandy loam-----	35	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00				
Oregongulch gravelly sandy loam-----	20	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (<75mm) > 50%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Depth to bedrock < 40"	1.00
		Seepage in bottom layer	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00
Craigsaddle coarse sandy loam-----	20	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Depth to bedrock 40-60"	0.01
				Bedrock depth from 40-60"	0.01		
Rock outcrop, trondhjemite-----	10	Not rated		Not rated		Not rated	
217:							
Crystalhill gravelly coarse sandy loam-----	35	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00				
Oregongulch gravelly sandy loam-----	20	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (<75mm) > 50%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Depth to bedrock < 40"	1.00
		Seepage in bottom layer	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
217: Craigsaddle coarse sandy loam-----	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth Bedrock depth from 40-60"	1.00 1.00 0.01	Not suited Slopes > 15% Depth to bedrock 40-60"	1.00 0.01
Rock outcrop, trondhjemite-----	10	Not rated		Not rated		Not rated	
218: Rock outcrop, quartz diorite-----	60	Not rated		Not rated		Not rated	
Lithic Xerorthents gravelly sandy loam---	20	Limitations Lithic or paralithic bedrock < 72" Seepage in bottom layer Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not rated	
Chawanakee gravelly sandy loam-----	15	Limitations Lithic or paralithic bedrock < 72" Seepage in bottom layer Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Permeability > 2.0 in/hr	1.00 1.00 0.88
219: Rock outcrop, quartz diorite-----	60	Not rated		Not rated		Not rated	
Lithic Xerorthents gravelly sandy loam---	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not rated	

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
219: Chawanakee gravelly sandy loam-----	15	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Permeability > 2.0 in/hr	1.00 1.00 0.88
220: Esquon clay, frequently flooded-----	60	Limitations Flooding >= occasional Saturation < 6' depth Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 5' depth Frequent flooding	1.00 1.00 0.80	Not suited Ponding (any duration) Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
Clear Lake silty clay loam, overwash-----	30	Limitations Flooding >= occasional Saturation < 6' depth Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 5' depth Frequent flooding	1.00 1.00 0.80	Not suited Ponding (any duration) Saturation < 18" depth Silty clay or clay 10-60"	1.00 1.00 1.00
221yu: Sites loam-----	85	Limitations Lithic or paralithic bedrock < 72" Clay or silty clay	1.00 1.00	No limitations		Not suited Silty clay or clay 10-60" Packing (OL, OH, CH, or MH) Clay or silty clay	1.00 1.00 1.00
222yu: Sites loam-----	85	Limitations Lithic or paralithic bedrock < 72" Clay or silty clay Slopes 8 to 15%	1.00 1.00 0.63	Limitations Slopes 8 to 15%	0.63	Not suited Silty clay or clay 10-60" Packing (OL, OH, CH, or MH) Clay or silty clay	1.00 1.00 1.00
225yu: Sites gravelly loam, bedrock substratum-----	80	Limitations Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 0.50	Limitations Bedrock depth from 40-60"	0.18	Not suited Packing (OL, OH, CH, or MH) Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
226yu: Sites gravelly loam, bedrock substratum-----	80	Limitations Lithic or paralithic bedrock < 72" Slopes 8 to 15% Clay loam, silty clay, silty clay loam	1.00 0.63 0.50	Limitations Slopes 8 to 15% Bedrock depth from 40-60"	0.63 0.18	Not suited Packing (OL, OH, CH, or MH) Slopes 8 to 15% Silt or clay textures from 10-60"	1.00 0.63 0.50
227yu: Sites gravelly loam, bedrock substratum-----	80	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.18	Not suited Slopes > 15% Packing (OL, OH, CH, or MH) Silt or clay textures from 10-60"	1.00 1.00 0.50
242yu: Surnuf loam-----	80	Limitations Slopes 8 to 15%	0.63	Limitations Slopes 8 to 15%	0.63	Suited Slopes 8 to 15%	0.63
243yu: Surnuf loam-----	80	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15%	1.00
244yu: Surnuf loam-----	80	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15%	1.00
245: Surnuf loam-----	80	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15%	1.00
248yu: Trainer loam-----	85	Limitations Flooding >= occasional Saturation < 6' depth Seepage in bottom layer	1.00 1.00 1.00	Limitations Saturation < 5' depth Seepage in 20-40" depth Occasional flooding	1.00 1.00 0.60	Suited Permeability > 2.0 in/hr	0.50

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
250: Llanoseco, occasionally flooded-----	90	Limitations Flooding >= occasional Saturation < 6' depth Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Occasional flooding	1.00 0.60	Not suited Ponding (any duration) Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
252: Whitecabin silty clay, occasionally flooded---	60	Limitations Flooding >= occasional Saturation < 6' depth Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 5' depth Occasional flooding	1.00 1.00 0.60	Not suited Ponding (any duration) Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
Ordferry silty clay, occasionally flooded---	25	Limitations Flooding >= occasional Saturation < 6' depth Ponding (any duration)	1.00 1.00 1.00	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00
252yu: Woodleaf gravelly loam--	80	Limitations Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35% Clay loam, silty clay, silty clay loam	1.00 0.66 0.50	Limitations Bedrock depth < 40" Slopes 8 to 15%	1.00 0.04	Not suited Depth to bedrock < 40" Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
253yu: Woodleaf gravelly loam--	80	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35%	1.00 1.00 0.66	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Silt or clay textures from 10-60"	1.00 1.00 0.50
255: Whitecabin silty clay loam, occasionally flooded-----	60	Limitations Flooding >= occasional Saturation < 6' depth Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 5' depth Depth to pan 40-60"	1.00 1.00 0.88	Not suited Ponding (any duration) Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
255: Ordferry silty clay, occasionally flooded---	30	Limitations Flooding >= occasional Saturation < 6' depth Ponding (any duration)	1.00 1.00 1.00	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00
256: Whitecabin silt loam, occasionally flooded---	85	Limitations Flooding >= occasional Saturation < 6' depth Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 5' depth Occasional flooding	1.00 1.00 0.60	Not suited Ponding (any duration) Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
257: Llanoseco, frequently flooded-----	90	Limitations Flooding >= occasional Saturation < 6' depth Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Frequent flooding	1.00 0.80	Not suited Ponding (any duration) Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
258: Codora, occasionally flooded-----	85	Limitations Flooding >= occasional Saturation < 6' depth Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 5' depth Occasional flooding	1.00 1.00 0.60	Not suited Ponding (any duration) Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
260: Ordferry silty clay, occasionally flooded---	90	Limitations Flooding >= occasional Saturation < 6' depth Ponding (any duration)	1.00 1.00 1.00	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00
280: Columbia taxadjunct stratified very fine sandy loam-----	80	Limitations Flooding >= occasional Saturation < 6' depth Seepage in bottom layer	1.00 1.00 1.00	Limitations Saturation < 5' depth Seepage in 20-40" depth Frequent flooding	1.00 1.00 0.80	Not suited Saturation < 18" depth Permeability > 2.0 in/hr	1.00 0.09

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
290: Perkins gravelly loam---	90	Limitations Saturation < 6' depth Seepage in bottom layer	1.00 1.00	Limitations Seepage in 20-40" depth	1.00	Not suited Fragments (<75mm) > 50% Permeability > 2.0 in/hr	1.00 0.63
300: Redsluff gravelly loam--	80	Limitations Saturation < 6' depth Seepage in bottom layer Rare flooding	1.00 1.00 0.50	Limitations Saturation < 5' depth Seepage in 20-40" depth Rare flooding	1.00 1.00 0.40	Not suited Permeability > 2.0 in/hr Sandy textures Fragments (<75mm) 25-50%	1.00 0.50 0.30
301: Wafap gravelly loam----	70	Limitations Saturation < 6' depth Fragments (3-10") > 35% Rare flooding	1.00 1.00 0.50	Limitations Saturation < 5' depth Depth to pan 40-60" Rare flooding	1.00 0.77 0.40	Not suited Saturation < 18" depth Packing (OL, OH, CH, or MH) Fragments (>3") > 50%	1.00 1.00 1.00
Hamslough clay-----	15	Limitations Flooding >= occasional Saturation < 6' depth Ponding (any duration)	1.00 1.00 1.00	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00
302: Redtough loam-----	50	Limitations Saturation < 6' depth Fragments (3-10") 15-35%	1.00 0.30	Limitations Depth to pan < 40" Saturation < 5' depth	1.00 1.00	Not suited Depth to pan < 40" Saturation < 18" depth	1.00 1.00
Redswale cobbly loam---	35	Limitations Saturation < 6' depth Ponding (any duration) Fragments (3-10") > 35%	1.00 1.00 1.00	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00
303: Munjar gravelly loam---	60	Limitations Saturation < 6' depth Fragments (3-10") 15-35% Clay loam, silty clay, silty clay loam	1.00 0.61 0.50	Limitations Depth to pan < 40" Saturation < 5' depth	1.00 1.00	Not suited Depth to pan < 40" Saturation from 18 to 40" depth Silt or clay textures from 10-60"	1.00 0.98 0.50

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
303: Tuscan taxadjunct gravelly clay loam-----	20	Limitations Saturation < 6' depth Clay loam, silty clay, silty clay loam	1.00 0.50	Limitations Depth to pan < 40" Saturation < 5' depth	1.00 1.00	Not suited Depth to pan < 40" Saturation < 18" depth Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
Galt clay-----	10	Limitations Saturation < 6' depth Ponding (any duration) Clay or silty clay	1.00 1.00 1.00	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00
304: Redtough loam-----	80	Limitations Slopes > 15% Fragments (3-10") 15-35%	1.00 0.30	Limitations Depth to pan < 40" Slopes > 15%	1.00 1.00	Not suited Depth to pan < 40" Slopes > 15%	1.00 1.00
305: Redtough gravelly loam--	45	Limitations Saturation < 6' depth Clay loam, silty clay, silty clay loam	1.00 0.50	Limitations Depth to pan < 40" Saturation < 5' depth	1.00 1.00	Not suited Depth to pan < 40" Saturation < 18" depth Silt or clay textures from 10-60"	1.00 1.00 0.50
Redswale loam-----	25	Limitations Saturation < 6' depth Ponding (any duration)	1.00 1.00	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00
Anita, gravelly duripan	20	Limitations Saturation < 6' depth Ponding (any duration) Clay or silty clay	1.00 1.00 1.00	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00
306: Duric Xerarents, fill---	50	Not rated		Limitations Ponding (any duration) Saturation < 5' depth Depth to pan < 40"	1.00 1.00 0.99	Not rated	
Duric Xerarents, cut----	40	Not rated		Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not rated	

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
307: Duric Xerarents clay loam, leveled-----	70	Limitations Saturation < 6' depth Ponding (any duration) Clay or silty clay	1.00 1.00 1.00	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00
310: Kimball loam-----	85	No limitations		No limitations		Suited	
317: Thompsonflat loam-----	75	Limitations Saturation < 6' depth	1.00	No limitations		Suited Fragments (<75mm) 25-50%	0.98
318: Thompsonflat fine sandy loam-----	50	Limitations Saturation < 6' depth Fragments (3-10") 15-35%	1.00 0.06	No limitations		Suited Fragments (<75mm) 25-50%	0.90
Oroville gravelly fine sandy loam-----	40	Limitations Saturation < 6' depth Ponding (any duration) Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00
320: Vistarobles sandy loam--	50	Limitations Saturation < 6' depth Ponding (any duration) Clay or silty clay	1.00 1.00 1.00	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00
Redding loam-----	40	Limitations Saturation < 6' depth	1.00	Limitations Depth to pan < 40" Saturation < 5' depth	1.00 1.00	Not suited Depth to pan < 40" Saturation from 18 to 40" depth	1.00 0.86

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
321: Durixeralfs, fine-loamy, gravelly fine sandy loam-----	50	Limitations Saturation < 6' depth Lithic or paralithic bedrock < 72" Depth to thin cemented pan	1.00 1.00 0.50	Limitations Depth to pan < 40" Saturation < 5' depth Bedrock depth from 40-60"	1.00 1.00 0.82	Not suited Depth to pan < 40" Saturation from 18 to 40" depth Depth to bedrock 40-60"	1.00 0.98 0.82
Durixeralfs, loamy- skeletal, gravelly fine sandy loam-----	20	Limitations Saturation < 6' depth Ponding (any duration) Lithic or paralithic bedrock < 72"	1.00 1.00 1.00	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Depth to bedrock < 40" Ponding (any duration)	1.00 1.00 1.00
Typic Petraquepts silty clay-----	15	Limitations Saturation < 6' depth Ponding (any duration) Lithic or paralithic bedrock < 72"	1.00 1.00 1.00	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Depth to bedrock < 40" Ponding (any duration)	1.00 1.00 1.00
330: Wilsoncreek loam, occasionally flooded---	60	Limitations Flooding >= occasional Saturation < 6' depth	1.00 1.00	Limitations Saturation < 5' depth Seepage in 20-40" depth Occasional flooding	1.00 1.00 0.60	Suited	
Trainer loam, occasionally flooded---	25	Limitations Flooding >= occasional Saturation < 6' depth Seepage in bottom layer	1.00 1.00 1.00	Limitations Saturation < 5' depth Seepage in 20-40" depth Occasional flooding	1.00 1.00 0.60	Suited Saturation from 18 to 40" depth Permeability > 2.0 in/hr	0.11 0.09
331: Thompsonflat loam-----	85	Limitations Saturation < 6' depth Slopes > 15%	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Fragments (<75mm) 25-50%	1.00 0.98

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
335: Galt clay loam-----	85	Limitations Saturation < 6' depth Ponding (any duration) Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00
336: Galt clay-----	90	Limitations Saturation < 6' depth Ponding (any duration) Clay or silty clay	1.00 1.00 1.00	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00
337: Galt clay loam-----	85	Limitations Saturation < 6' depth Ponding (any duration) Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00
338: Oxyaquic Xerofluvents silt loam-----	90	Limitations Saturation < 6' depth Ponding (any duration) Rare flooding	1.00 1.00 0.50	Limitations Ponding (any duration) Saturation < 5' depth Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Ponding (any duration) Permeability > 2.0 in/hr Sandy textures	1.00 1.00 0.50
339: Oxyaquic Xerofluvents sandy loam, frequently flooded-----	90	Limitations Flooding >= occasional Saturation < 6' depth Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 5' depth Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Ponding (any duration) Permeability > 2.0 in/hr Saturation from 18 to 40" depth	1.00 1.00 0.01
340: Rock outcrop, Lovejoy basalt-----	35	Not rated		Not rated		Not rated	

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
340: Thermalrocks very gravelly loam-----	25	Limitations Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35%	1.00 0.50	Limitations Bedrock depth < 40"	1.00	Not suited Depth to bedrock < 40" Fragments (<75mm) 25-50%	1.00 0.77
Campbellhills gravelly loam-----	20	Limitations Saturation < 6' depth Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Saturation < 5' depth Bedrock depth from 40-60"	1.00 0.42	Not suited Fragments (<75mm) > 50% Saturation < 18" depth Silt or clay textures from 10-60"	1.00 1.00 0.50
341: Elsely loam-----	25	Limitations Saturation < 6' depth Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35%	1.00 1.00 0.90	Limitations Saturation < 5' depth Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Saturation < 18" depth Fragments (>3") 25-50%	1.00 1.00 0.10
Beatsonhollow gravelly loam-----	25	Limitations Saturation < 6' depth Ponding (any duration) Lithic or paralithic bedrock < 72"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 5' depth Bedrock depth < 40"	1.00 1.00 1.00	Not suited Depth to bedrock < 40" Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00
Campbellhills gravelly loam-----	20	Limitations Saturation < 6' depth Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Saturation < 5' depth Bedrock depth from 40-60"	1.00 0.42	Not suited Fragments (<75mm) > 50% Saturation < 18" depth Silt or clay textures from 10-60"	1.00 1.00 0.50
Rock outcrop, Lovejoy basalt-----	20	Not rated		Not rated		Not rated	

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
342: Thermalrocks very gravelly loam-----	40	Limitations Lithic or paralithic bedrock < 72" Slopes > 15% Fragments (3-10") 15-35%	1.00 1.00 0.50	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.77
Beatsonhollow taxadjunct fine sandy loam-----	35	Limitations Saturation < 6' depth Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Saturation < 5' depth Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Saturation < 18" depth Fragments (<75mm) 25-50%	1.00 1.00 0.22
Rock outcrop, Lovejoy basalt-----	15	Not rated		Not rated		Not rated	
343: Coalcanyon very cobbly loam-----	50	Limitations Fragments (3-10") > 35% Clay loam, silty clay, silty clay loam Slopes 8 to 15%	1.00 0.50 0.16	Limitations Slopes 8 to 15%	0.16	Not suited Fragments (>3") > 50% Clay loam, silty clay, silty clay loam Silt or clay textures from 10-60"	1.00 0.50 0.50
Coonhollow gravelly loam-----	35	Limitations Lithic or paralithic bedrock < 72" Fragments (3-10") > 35% Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Bedrock depth from 40-60" Slopes 8 to 15%	0.84 0.16	Not suited Fragments (>3") > 50% Depth to bedrock 40-60" Silt or clay textures from 10-60"	1.00 0.84 0.50
344: Coalcanyon very cobbly loam-----	45	Limitations Slopes > 15% Fragments (3-10") > 35% Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Fragments (>3") > 50% Clay loam, silty clay, silty clay loam	1.00 1.00 0.50

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
344: Coonhollow gravelly loam-----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") > 35%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.84	Not suited Slopes > 15% Fragments (>3") > 50% Depth to bedrock 40-60"	1.00 1.00 0.84
Rock outcrop, Lovejoy basalt-----	15	Not rated		Not rated		Not rated	
346: Cherotable loam-----	50	Limitations Saturation < 6' depth Lithic or paralithic bedrock < 72" Clay or silty clay	1.00 1.00 1.00	Limitations Saturation < 5' depth Bedrock depth from 40-60"	1.00 0.84	Not suited Silty clay or clay 10-60" Packing (OL, OH, CH, or MH) Clay or silty clay	1.00 1.00 1.00
Elsley loam-----	35	Limitations Saturation < 6' depth Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35%	1.00 1.00 0.90	Limitations Saturation < 5' depth Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Saturation < 18" depth Fragments (>3") 25-50%	1.00 1.00 0.10
347: Haplic Palexeralfs loam	90	Limitations Flooding >= occasional Fragments (3-10") 15-35%	1.00 0.18	Limitations Occasional flooding	0.60	Suited Fragments (>3") 25-50% Fragments (<75mm) 25-50%	0.54 0.05
353: Cherokeespring gravelly silt loam-----	80	Limitations Clay or silty clay Slopes 8 to 15%	1.00 0.63	Limitations Slopes 8 to 15%	0.63	Not suited Silty clay or clay 10-60" Packing (OL, OH, CH, or MH) Clay or silty clay	1.00 1.00 1.00
355: Coalcanyon very cobbly loam-----	55	Limitations Slopes > 15% Fragments (3-10") > 35% Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Fragments (>3") > 50% Clay loam, silty clay, silty clay loam	1.00 1.00 0.50

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
355: Talus-----	35	Not rated		Not rated		Not rated	
356: Coalcanyon very cobbly loam-----	45	Limitations Slopes > 15% Fragments (3-10") > 35% Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Fragments (>3") > 50% Clay loam, silty clay, silty clay loam	1.00 1.00 0.50
Rock outcrop, basalt cliffs-----	20	Not rated		Not rated		Not rated	
Talus-----	20	Not rated		Not rated		Not rated	
Coonhollow gravelly loam-----	10	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") > 35%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.84	Not suited Slopes > 15% Fragments (>3") > 50% Depth to bedrock 40-60"	1.00 1.00 0.84
360: Typic Xerofluvents, coarse-loamy-----	45	Limitations Saturation < 6' depth Seepage in bottom layer Rare flooding	1.00 1.00 0.50	Limitations Saturation < 5' depth Seepage in 20-40" depth Rare flooding	1.00 1.00 0.40	Not suited Permeability > 2.0 in/hr Fragments (<75mm) 25-50% Saturation from 18 to 40" depth	1.00 0.05 0.01
Typic Xerofluvents, sandy-skeletal-----	40	Limitations Saturation < 6' depth Sandy textures Seepage in bottom layer	1.00 1.00 1.00	Limitations Saturation < 5' depth Seepage in 20-40" depth Rare flooding	1.00 1.00 0.40	Not suited Fragments (<75mm) > 50% Sandy textures Permeability > 2.0 in/hr	1.00 1.00 1.00

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
361: Typic Xerofluvents, sandy-skeletal-----	85	Limitations Saturation < 6' depth Sandy textures Seepage in bottom layer	1.00 1.00 1.00	Limitations Saturation < 5' depth Seepage in 20-40" depth Rare flooding	1.00 1.00 0.40	Not suited Fragments (<75mm) > 50% Sandy textures Permeability > 2.0 in/hr	1.00 1.00 1.00
362: Ultic Haploxeralfs, sandstone, low elevation, very deep---	60	Limitations Seepage in bottom layer	1.00	No limitations		Suited Permeability > 2.0 in/hr	0.16
Ultic Haploxeralfs, sandstone, low elevation, deep-----	25	Limitations Lithic or paralithic bedrock < 72"	1.00	Limitations Seepage in 20-40" depth Bedrock depth from 40-60"	1.00 0.99	Suited Depth to bedrock 40-60" Permeability > 2.0 in/hr	0.99 0.31
363: Ultic Haploxeralfs, sandstone, low elevation, very deep---	60	Limitations Seepage in bottom layer	1.00	No limitations		Suited Permeability > 2.0 in/hr	0.16
Ultic Haploxeralfs, sandstone, low elevation, deep-----	30	Limitations Lithic or paralithic bedrock < 72" Slopes 8 to 15%	1.00 0.63	Limitations Seepage in 20-40" depth Bedrock depth from 40-60" Slopes 8 to 15%	1.00 0.99 0.63	Suited Depth to bedrock 40-60" Slopes 8 to 15% Permeability > 2.0 in/hr	0.99 0.63 0.31
364: Ultic Haploxeralfs, sandstone, low elevation, deep-----	50	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth Bedrock depth from 40-60"	1.00 1.00 0.99	Not suited Slopes > 15% Depth to bedrock 40-60" Permeability > 2.0 in/hr	1.00 0.99 0.99

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
364: Ultic Haploxeralfs, sandstone, low elevation, very deep---	40	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Permeability > 2.0 in/hr	1.00 0.16
365: Palexerults gravelly loam-----	80	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Packing (OL, OH, CH, or MH) Silt or clay textures from 10-60"	1.00 1.00 0.50
366: Palexerults gravelly loam-----	80	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Packing (OL, OH, CH, or MH) Silt or clay textures from 10-60"	1.00 1.00 0.50
370: Palexerults gravelly loam-----	80	Limitations Lithic or paralithic bedrock < 72"	1.00	No limitations		Not suited Packing (OL, OH, CH, or MH) Silt or clay textures from 10-60"	1.00 0.50
375: Wicksorner loam-----	80	Limitations Saturation < 6' depth Clay or silty clay	1.00 1.00	No limitations		Not suited Fragments (<75mm) > 50% Silty clay or clay 10-60" Clay or silty clay	1.00 1.00 1.00
376: Flagcanyon gravelly loam-----	50	Limitations Saturation < 6' depth Clay loam, silty clay, silty clay loam Depth to thin cemented pan	1.00 0.50 0.50	Limitations Depth to pan < 40" Saturation < 5' depth	1.00 1.00	Not suited Depth to pan < 40" Saturation from 18 to 40" depth Fragments (<75mm) 25-50%	1.00 0.82 0.58

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
376: Wicks corner loam-----	35	Limitations Saturation < 6' depth Clay or silty clay	1.00 1.00	No limitations		Not suited Fragments (<75mm) > 50% Silty clay or clay 10-60" Clay or silty clay	1.00 1.00 1.00
377: Flagcanyon taxadjunct fine sandy loam-----	55	Limitations Saturation < 6' depth Ponding (any duration) Clay or silty clay	1.00 1.00 1.00	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00
Durixeralfs, clayey- skeletal, loam-----	20	Limitations Saturation < 6' depth Ponding (any duration) Clay or silty clay	1.00 1.00 1.00	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00
Duraquerts gravelly clay-----	15	Limitations Saturation < 6' depth Ponding (any duration) Clay or silty clay	1.00 1.00 1.00	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00
400: Subaco taxadjunct clay--	85	Limitations Saturation < 6' depth Ponding (any duration) Clay or silty clay	1.00 1.00 1.00	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Silty clay or clay 10-60"	1.00 1.00 1.00
415: Ignord fine sandy loam--	90	Limitations Seepage in bottom layer Rare flooding	1.00 0.50	Limitations Seepage in 20-40" depth Rare flooding	1.00 0.40	Suited Permeability > 2.0 in/hr	0.63
416: Calcic Haploxerolls sandy loam-----	90	Limitations Saturation < 6' depth Rare flooding	1.00 0.50	Limitations Saturation < 5' depth Seepage in 20-40" depth Rare flooding	1.00 1.00 0.40	Suited Saturation from 18 to 40" depth	0.35

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
418: Almendra loam-----	85	No limitations		No limitations		Suited	
419: Conejo fine sandy loam, overwash-----	85	Limitations Clay loam, silty clay, silty clay loam	0.50	No limitations		Suited Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	0.50 0.50
420: Conejo clay loam-----	85	No limitations		No limitations		Suited Silt or clay textures from 10-60"	0.50
425: Vina fine sandy loam---	85	Limitations Sandy textures Seepage in bottom layer Rare flooding	1.00 1.00 0.50	Limitations Seepage in 20-40" depth Rare flooding	1.00 0.40	Not suited Sandy textures Permeability > 2.0 in/hr	1.00 1.00
426: Vina loam-----	85	No limitations		No limitations		Suited	
439: Oxyaquic Xerofluvents clay-----	85	Limitations Flooding >= occasional Saturation < 6' depth Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 5' depth Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Ponding (any duration) Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
440: Oxyaquic Xerofluvents silt loam, frequently flooded-----	80	Limitations Flooding >= occasional Saturation < 6' depth Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 5' depth Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Ponding (any duration) Saturation from 18 to 40" depth	1.00 0.47

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
441: Oxyaquic Xerofluvents very fine sandy loam---	90	Limitations Saturation < 6' depth Ponding (any duration) Rare flooding	1.00 1.00 0.50	Limitations Ponding (any duration) Saturation < 5' depth Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Ponding (any duration) Saturation from 18 to 40" depth	1.00 0.47
442: Durixerolls clay loam---	55	Limitations Saturation < 6' depth Ponding (any duration) Rare flooding	1.00 1.00 0.50	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00
Haploxerolls clay loam--	30	Limitations Saturation < 6' depth Rare flooding	1.00 0.50	Limitations Saturation < 5' depth Rare flooding Depth to pan 40-60"	1.00 0.40 0.02	Suited Saturation from 18 to 40" depth Depth to pan from 40-60"	0.47 0.02
443: Durixerolls loam-----	60	Limitations Saturation < 6' depth Rare flooding	1.00 0.50	Limitations Depth to pan < 40" Saturation < 5' depth Rare flooding	1.00 1.00 0.40	Not suited Depth to pan < 40" Saturation < 18" depth	1.00 1.00
Haploxerolls loam-----	25	Limitations Saturation < 6' depth Seepage in bottom layer Rare flooding	1.00 1.00 0.50	Limitations Saturation < 5' depth Rare flooding Depth to pan 40-60"	1.00 0.40 0.26	Suited Saturation from 18 to 40" depth Depth to pan from 40-60"	0.47 0.26
445: Chico loam-----	85	No limitations		No limitations		Suited	
447: Charger fine sandy loam	80	Limitations Saturation < 6' depth Seepage in bottom layer Rare flooding	1.00 1.00 0.50	Limitations Saturation < 5' depth Seepage in 20-40" depth Rare flooding	1.00 1.00 0.40	Not suited Permeability > 2.0 in/hr Saturation from 18 to 40" depth	1.00 0.01
448: Haploxerolls clay loam--	75	Limitations Saturation < 6' depth Rare flooding	1.00 0.50	Limitations Rare flooding	0.40	Suited	

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
449: Haploxerolls loam-----	75	Limitations Saturation < 6' depth Seepage in bottom layer Rare flooding	1.00 1.00 0.50	Limitations Rare flooding	0.40	Suited	
500: Lofgren clay-----	45	Limitations Saturation < 6' depth Ponding (any duration) Clay or silty clay	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 5' depth Depth to pan 40-60"	1.00 1.00 0.71	Not suited Ponding (any duration) Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
Blavo clay-----	40	Limitations Saturation < 6' depth Ponding (any duration) Clay or silty clay	1.00 1.00 1.00	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Silty clay or clay 10-60"	1.00 1.00 1.00
501: Lofgren clay, occasionally flooded---	45	Limitations Flooding >= occasional Saturation < 6' depth Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 5' depth Depth to pan 40-60"	1.00 1.00 0.84	Not suited Ponding (any duration) Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
Blavo clay, occasionally flooded---	40	Limitations Flooding >= occasional Saturation < 6' depth Ponding (any duration)	1.00 1.00 1.00	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Silty clay or clay 10-60"	1.00 1.00 1.00
502: Blavo silt loam, overwash, occasionally flooded-----	80	Limitations Flooding >= occasional Saturation < 6' depth Ponding (any duration)	1.00 1.00 1.00	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Silty clay or clay 10-60"	1.00 1.00 1.00

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
519: Edjobe silty clay-----	85	Limitations Saturation < 6' depth Ponding (any duration) Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Ponding (any duration) Saturation < 5' depth	1.00 1.00	Not suited Ponding (any duration) Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
520: Esquon clay-----	60	Limitations Saturation < 6' depth Ponding (any duration) Clay or silty clay	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 5' depth Rare flooding	1.00 1.00 0.40	Not suited Ponding (any duration) Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
Neerdobe clay-----	30	Limitations Saturation < 6' depth Ponding (any duration) Clay or silty clay	1.00 1.00 1.00	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Silty clay or clay 10-60"	1.00 1.00 1.00
521: Neerdobe silt loam, overwash-----	85	Limitations Saturation < 6' depth Ponding (any duration) Clay or silty clay	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 5' depth Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Ponding (any duration) Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
522: Clear Lake silty clay loam, overwash-----	80	Limitations Flooding >= occasional Saturation < 6' depth Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 5' depth Frequent flooding	1.00 1.00 0.80	Not suited Ponding (any duration) Saturation < 18" depth Silty clay or clay 10-60"	1.00 1.00 1.00
523: Esquon silty clay loam, overwash-----	80	Limitations Flooding >= occasional Saturation < 6' depth Ponding (any duration)	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 5' depth Frequent flooding	1.00 1.00 0.80	Not suited Ponding (any duration) Saturation < 18" depth Silty clay or clay 10-60"	1.00 1.00 1.00
525: Govstanford loam-----	85	Limitations Saturation < 6' depth	1.00	Limitations Saturation < 5' depth	1.00	Suited Saturation from 18 to 40" depth	0.80

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
526: Govstanford loam, occasionally flooded---	85	Limitations Flooding >= occasional Saturation < 6' depth	1.00 1.00	Limitations Saturation < 5' depth Occasional flooding	1.00 0.60	Suited Saturation from 18 to 40" depth	0.80
528: Neerdobe clay loam-----	90	Limitations Saturation < 6' depth Ponding (any duration) Clay or silty clay	1.00 1.00 1.00	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00
550: Dunstone loam, dry-----	60	Limitations Lithic or paralithic bedrock < 72"	1.00	Limitations Bedrock depth < 40"	1.00	Not suited Depth to bedrock < 40"	1.00
Loafercreek silt loam, dry-----	20	Limitations Lithic or paralithic bedrock < 72" Slopes 8 to 15%	1.00 0.01	Limitations Bedrock depth < 40" Slopes 8 to 15%	1.00 0.01	Not suited Depth to bedrock < 40" Slopes 8 to 15%	1.00 0.01
551: Dunstone loam, dry-----	35	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15%	1.00 1.00
Lomarica loam-----	15	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Argonaut taxadjunct loam-----	15	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay or silty clay	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Silty clay or clay 10-60"	1.00 1.00 1.00

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
552: Dunstone gravelly loam--	45	Limitations Lithic or paralithic bedrock < 72" Slopes 8 to 15%	1.00 0.01	Limitations Bedrock depth < 40" Slopes 8 to 15%	1.00 0.01	Not suited Depth to bedrock < 40" Fragments (<75mm) 25-50% Slopes 8 to 15%	1.00 0.69 0.01
Loafercreek gravelly loam-----	40	Limitations Lithic or paralithic bedrock < 72" Slopes 8 to 15%	1.00 0.01	Limitations Bedrock depth < 40" Seepage in 20-40" depth Slopes 8 to 15%	1.00 1.00 0.01	Not suited Depth to bedrock < 40" Fragments (<75mm) 25-50% Permeability > 2.0 in/hr	1.00 0.06 0.01
553: Dunstone gravelly loam--	45	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.69
Loafercreek gravelly loam-----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40" Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.06
554: Dunstone gravelly loam--	45	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.69
Loafercreek gravelly loam-----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40" Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.06
555: Dunstone gravelly loam--	45	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.69

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
555: Loafercreek gravelly loam-----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40" Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.06
556: Mounthope loam-----	50	Limitations Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam Slopes 8 to 15%	1.00 0.50 0.01	Limitations Bedrock depth from 40-60" Slopes 8 to 15%	0.26 0.01	Suited Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam Depth to bedrock 40-60"	0.50 0.50 0.26
Hartsmill gravelly loam	40	Limitations Lithic or paralithic bedrock < 72" Fragments (3-10") > 35% Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes 8 to 15%	0.01	Not suited Packing (OL, OH, CH, or MH) Fragments (>3") 25-50% Silt or clay textures from 10-60"	1.00 0.83 0.50
557: Mounthope loam-----	50	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.26	Not suited Slopes > 15% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
Hartsmill gravelly loam	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") > 35%	1.00 1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Packing (OL, OH, CH, or MH) Fragments (>3") 25-50%	1.00 1.00 0.83
558: Hartsmill gravelly loam	55	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") > 35%	1.00 1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Packing (OL, OH, CH, or MH) Fragments (>3") 25-50%	1.00 1.00 0.83

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
558: Mounthope loam-----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.26	Not suited Slopes > 15% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
559: Hartsmill gravelly loam	55	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") > 35%	1.00 1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Packing (OL, OH, CH, or MH) Fragments (>3") 25-50%	1.00 1.00 0.83
Mounthope loam-----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.26	Not suited Slopes > 15% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
560: Hartsmill gravelly loam	50	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") > 35%	1.00 1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Packing (OL, OH, CH, or MH) Fragments (>3") 25-50%	1.00 1.00 0.83
Mounthope loam-----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.26	Not suited Slopes > 15% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
561: Bigridge loam-----	50	Limitations Lithic or paralithic bedrock < 72" Slopes 8 to 15%	1.00 0.01	Limitations Bedrock depth from 40-60" Slopes 8 to 15%	0.35 0.01	Not suited Fragments (<75mm) > 50% Depth to bedrock 40-60" Slopes 8 to 15%	1.00 0.35 0.01

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
561: Minniecreek loam-----	35	Limitations Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam Slopes 8 to 15%	1.00 0.50 0.01	Limitations Bedrock depth < 40" Slopes 8 to 15%	1.00 0.01	Not suited Depth to bedrock < 40" Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
562: Bigridge loam-----	50	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.35	Not suited Fragments (<75mm) > 50% Slopes > 15% Depth to bedrock 40-60"	1.00 1.00 0.35
Minniecreek loam-----	35	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Silt or clay textures from 10-60"	1.00 1.00 0.50
563: Bigridge loam-----	50	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.35	Not suited Fragments (<75mm) > 50% Slopes > 15% Depth to bedrock 40-60"	1.00 1.00 0.35
Minniecreek loam-----	35	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Silt or clay textures from 10-60"	1.00 1.00 0.50
564: Bigridge loam-----	50	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.35	Not suited Fragments (<75mm) > 50% Slopes > 15% Depth to bedrock 40-60"	1.00 1.00 0.35

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
564: Minniecreek loam-----	35	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Silt or clay textures from 10-60"	1.00 1.00 0.50
565: Dunstone loam, dry-----	35	Limitations Lithic or paralithic bedrock < 72"	1.00	Limitations Bedrock depth < 40"	1.00	Not suited Depth to bedrock < 40"	1.00
Argonaut taxadjunct loam-----	30	Limitations Lithic or paralithic bedrock < 72" Clay or silty clay Slopes 8 to 15%	1.00 1.00 0.01	Limitations Bedrock depth < 40" Slopes 8 to 15%	1.00 0.01	Not suited Depth to bedrock < 40" Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
Sunnyslope loam-----	20	Limitations Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 0.50	Limitations Bedrock depth < 40"	1.00	Not suited Depth to bedrock < 40" Fragments (<75mm) 25-50% Silt or clay textures from 10-60"	1.00 0.79 0.50
566: Dunstone loam, dry-----	45	Limitations Lithic or paralithic bedrock < 72"	1.00	Limitations Bedrock depth < 40"	1.00	Not suited Depth to bedrock < 40"	1.00
Loafercreek silt loam, dry-----	20	Limitations Lithic or paralithic bedrock < 72" Slopes 8 to 15%	1.00 0.01	Limitations Bedrock depth < 40" Slopes 8 to 15%	1.00 0.01	Not suited Depth to bedrock < 40" Slopes 8 to 15%	1.00 0.01
Katskillhill loam-----	15	Limitations Lithic or paralithic bedrock < 72" Clay or silty clay Slopes 8 to 15%	1.00 1.00 0.01	Limitations Bedrock depth from 40-60" Slopes 8 to 15%	0.96 0.01	Not suited Silty clay or clay 10-60" Packing (OL, OH, CH, or MH) Clay or silty clay	1.00 1.00 1.00

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
567: Dunstone loam, dry-----	40	Limitations Lithic or paralithic bedrock < 72"	1.00	Limitations Bedrock depth < 40"	1.00	Not suited Depth to bedrock < 40"	1.00
Loafercreek silt loam, dry-----	25	Limitations Lithic or paralithic bedrock < 72" Slopes 8 to 15%	1.00 0.01	Limitations Bedrock depth < 40" Slopes 8 to 15%	1.00 0.01	Not suited Depth to bedrock < 40" Slopes 8 to 15%	1.00 0.01
Argonaut taxadjunct loam-----	20	Limitations Lithic or paralithic bedrock < 72" Clay or silty clay Slopes 8 to 15%	1.00 1.00 0.01	Limitations Bedrock depth < 40" Slopes 8 to 15%	1.00 0.01	Not suited Depth to bedrock < 40" Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
577: Parkshill coarse sandy loam-----	40	Limitations Slopes 8 to 15%	0.01	Limitations Slopes 8 to 15%	0.01	Suited Slopes 8 to 15%	0.01
Flanly loam-----	25	Limitations Lithic or paralithic bedrock < 72" Slopes 8 to 15%	1.00 0.01	Limitations Bedrock depth < 40" Slopes 8 to 15%	1.00 0.01	Not suited Depth to bedrock < 40" Slopes 8 to 15%	1.00 0.01
Hurleton gravelly sandy loam-----	20	Limitations Lithic or paralithic bedrock < 72" Slopes 8 to 15%	1.00 0.04	Limitations Bedrock depth < 40" Slopes 8 to 15%	1.00 0.04	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes 8 to 15%	1.00 1.00 0.04
578: Flanly loam-----	45	Limitations Lithic or paralithic bedrock < 72" Slopes 8 to 15%	1.00 0.01	Limitations Bedrock depth < 40" Slopes 8 to 15%	1.00 0.01	Not suited Depth to bedrock < 40" Slopes 8 to 15%	1.00 0.01

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
578: Swedesflat cobbly fine sandy loam-----	35	Limitations Lithic or paralithic bedrock < 72" Slopes 8 to 15% Fragments (3-10") 15-35%	1.00 0.16 0.01	Limitations Bedrock depth < 40" Slopes 8 to 15%	1.00 0.16	Not suited Depth to bedrock < 40" Slopes 8 to 15%	1.00 0.16
580: Surnuf taxadjunct loam--	40	Limitations Clay or silty clay Slopes 8 to 15%	1.00 0.01	Limitations Slopes 8 to 15%	0.01	Not suited Silty clay or clay 10-60" Packing (OL, OH, CH, or MH) Clay or silty clay	1.00 1.00 1.00
Griffgulch very gravelly silt loam----	25	Limitations Lithic or paralithic bedrock < 72" Clay or silty clay Fragments (3-10") 15-35%	1.00 1.00 0.97	Limitations Bedrock depth from 40-60" Slopes 8 to 15%	0.01 0.01	Not suited Silty clay or clay 10-60" Packing (OL, OH, CH, or MH) Clay or silty clay	1.00 1.00 1.00
Rock outcrop, metavolcanic-----	20	Not rated		Not rated		Not rated	
581: Surnuf taxadjunct loam--	65	Limitations Slopes > 15% Clay or silty clay	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
Griffgulch very gravelly silt loam----	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay or silty clay	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.01	Not suited Slopes > 15% Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
582: Surnuf taxadjunct loam--	50	Limitations Slopes > 15% Clay or silty clay	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
582: Griffgulch very gravelly silt loam-----	35	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay or silty clay	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.01	Not suited Slopes > 15% Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
583: Surnuf taxadjunct loam--	50	Limitations Slopes > 15% Clay or silty clay	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
Griffgulch very gravelly silt loam-----	35	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay or silty clay	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.01	Not suited Slopes > 15% Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
584: Flanly loam-----	35	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15%	1.00 1.00
Swedesflat cobbly fine sandy loam-----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35%	1.00 1.00 0.01	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15%	1.00 1.00
Rackerby very gravelly sandy loam-----	25	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.96

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
585: Flanly loam-----	45	Limitations Lithic or paralithic bedrock < 72" Slopes 8 to 15%	1.00 0.01	Limitations Bedrock depth < 40" Slopes 8 to 15%	1.00 0.01	Not suited Depth to bedrock < 40" Slopes 8 to 15%	1.00 0.01
Sommeyflat loam-----	35	Limitations Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00	No limitations		Suited	
586: Sommeyflat loam-----	45	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15%	1.00
Mounthope loam-----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.26	Not suited Slopes > 15% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
587: Sommeyflat loam-----	35	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15%	1.00
Mounthope loam-----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.26	Not suited Slopes > 15% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
Hurleton gravelly sandy loam-----	25	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
588: Ultic Haploxeralfs, thermic, high terrace--	95	Not rated		Limitations Saturation < 5' depth	1.00	Not rated	
589: Ultic Haploxeralfs, thermic, high terrace--	95	Not rated		Limitations Slopes > 15% Saturation < 5' depth	1.00 1.00	Not rated	
590: Vistarobles sandy loam--	30	Limitations Saturation < 6' depth Ponding (any duration) Clay or silty clay	1.00 1.00 1.00	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00
Redding loam-----	25	Limitations Saturation < 6' depth	1.00	Limitations Depth to pan < 40" Saturation < 5' depth	1.00 1.00	Not suited Depth to pan < 40" Saturation from 18 to 40" depth	1.00 0.86
Argonaut taxadjunct loam-----	20	Limitations Lithic or paralithic bedrock < 72" Clay or silty clay	1.00 1.00	Limitations Bedrock depth < 40"	1.00	Not suited Depth to bedrock < 40" Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
Haploxererts gravelly silty clay-----	15	Limitations Saturation < 6' depth Ponding (any duration) Lithic or paralithic bedrock < 72"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 5' depth Bedrock depth from 40-60"	1.00 1.00 0.99	Not suited Ponding (any duration) Saturation < 18" depth Silty clay or clay 10-60"	1.00 1.00 1.00
603: Oroville gravelly fine sandy loam-----	30	Limitations Saturation < 6' depth Ponding (any duration) Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
603: Thermalito sandy loam---	25	Limitations Saturation < 6' depth	1.00	Limitations Depth to pan < 40" Saturation < 5' depth	1.00 1.00	Not suited Depth to pan < 40" Saturation < 18" depth Fragments (<75mm) 25-50%	1.00 1.00 0.19
Fernandez sandy loam----	15	Limitations Saturation < 6' depth Clay loam, silty clay, silty clay loam	1.00 0.50	Limitations Saturation < 5' depth	1.00	Suited Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam Saturation from 18 to 40" depth	0.50 0.50 0.01
Thompsonflat fine sandy loam-----	15	Limitations Saturation < 6' depth Fragments (3-10") 15-35%	1.00 0.06	No limitations		Suited Fragments (<75mm) 25-50%	0.90
605: Duric Xerarents fine sandy loam, leveled----	75	Limitations Saturation < 6' depth Ponding (any duration) Depth to thin cemented pan	1.00 1.00 0.50	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00
Oroville gravelly fine sandy loam-----	20	Limitations Saturation < 6' depth Ponding (any duration) Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00
606: Redtough loam-----	45	Limitations Saturation < 6' depth Fragments (3-10") 15-35%	1.00 0.30	Limitations Depth to pan < 40" Saturation < 5' depth	1.00 1.00	Not suited Depth to pan < 40" Saturation < 18" depth	1.00 1.00
Fallager loam-----	30	Limitations Saturation < 6' depth Ponding (any duration) Clay or silty clay	1.00 1.00 1.00	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
606: Anita, gravelly duripan	15	Limitations Saturation < 6' depth Ponding (any duration) Clay or silty clay	 1.00 1.00 1.00	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	 1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Saturation < 18" depth	 1.00 1.00 1.00
609: Anita, gravelly duripan	50	Limitations Saturation < 6' depth Ponding (any duration) Clay or silty clay	 1.00 1.00 1.00	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	 1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Saturation < 18" depth	 1.00 1.00 1.00
Tuscan taxadjunct gravelly clay loam-----	40	Limitations Saturation < 6' depth Clay loam, silty clay, silty clay loam	 1.00 0.50	Limitations Depth to pan < 40" Saturation < 5' depth	 1.00 1.00	Not suited Depth to pan < 40" Saturation < 18" depth Packing (OL, OH, CH, or MH)	 1.00 1.00 1.00
614: Doemill gravelly loam---	50	Limitations Saturation < 6' depth Lithic or paralithic bedrock < 72"	 1.00 1.00	Limitations Saturation < 5' depth Bedrock depth < 40"	 1.00 1.00	Not suited Depth to bedrock < 40" Saturation < 18" depth Fragments (<75mm) 25-50%	 1.00 1.00 0.03
Jokerst very cobbly loam	40	Limitations Flooding >= occasional Saturation < 6' depth Ponding (any duration)	 1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 5' depth Bedrock depth < 40"	 1.00 1.00 1.00	Not suited Depth to bedrock < 40" Ponding (any duration) Saturation < 18" depth	 1.00 1.00 1.00
615: Doemill gravelly loam---	50	Limitations Saturation < 6' depth Lithic or paralithic bedrock < 72"	 1.00 1.00	Limitations Saturation < 5' depth Bedrock depth < 40"	 1.00 1.00	Not suited Depth to bedrock < 40" Saturation < 18" depth Fragments (<75mm) 25-50%	 1.00 1.00 0.03
Jokerst very cobbly loam	40	Limitations Flooding >= occasional Saturation < 6' depth Ponding (any duration)	 1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 5' depth Bedrock depth < 40"	 1.00 1.00 1.00	Not suited Depth to bedrock < 40" Ponding (any duration) Saturation < 18" depth	 1.00 1.00 1.00

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
616:							
Jokerst very cobbly loam	35	Limitations		Limitations		Not suited	
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Saturation < 18" depth	1.00
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16
Doemill gravelly loam---	35	Limitations		Limitations		Not suited	
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Saturation < 18" depth	1.00
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16
Typic Haploxeralfs gravelly loam-----	15	Not rated		Limitations		Not rated	
				Slopes 8 to 15%	0.84		
617:							
Doemill gravelly loam---	35	Limitations		Limitations		Not suited	
		Saturation < 6' depth	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Slopes > 15%	1.00	Saturation < 5' depth	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Saturation < 18" depth	1.00
Jokerst very cobbly loam	30	Limitations		Limitations		Not suited	
		Saturation < 6' depth	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Slopes > 15%	1.00	Saturation < 5' depth	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Saturation < 18" depth	1.00
Typic Haploxeralfs gravelly loam-----	20	Not rated		Limitations		Not rated	
				Slopes > 15%	1.00		
619:							
Carhart taxadjunct clay	90	Limitations		Limitations		Not suited	
		Saturation < 6' depth	1.00	Ponding (any duration)	1.00	Depth to bedrock < 40"	1.00
		Ponding (any duration)	1.00	Saturation < 5' depth	1.00	Ponding (any duration)	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Saturation < 18" depth	1.00

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
620:							
Doemill gravelly loam---	40	Limitations		Limitations		Not suited	
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Saturation < 18" depth	1.00
						Fragments (<75mm) 25-50%	0.03
Jokerst very cobbly loam	25	Limitations		Limitations		Not suited	
		Saturation < 6' depth	1.00	Ponding (any duration)	1.00	Depth to bedrock < 40"	1.00
		Ponding (any duration)	1.00	Saturation < 5' depth	1.00	Ponding (any duration)	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Saturation < 18" depth	1.00
Ultic Haploxeraalfs, thermic, gravelly loam	20	Limitations		Limitations		Not suited	
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Fragments (>3") > 50%	1.00
		Fragments (3-10") > 35%	1.00			Saturation from 18 to 40" depth	0.53
621:							
Doemill gravelly loam---	30	Limitations		Limitations		Not suited	
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Saturation < 18" depth	1.00
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16
Jokerst very cobbly loam	30	Limitations		Limitations		Not suited	
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Saturation < 18" depth	1.00
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16
Ultic Haploxeraalfs, thermic, gravelly loam	20	Limitations		Limitations		Not suited	
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Fragments (>3") > 50%	1.00
		Fragments (3-10") > 35%	1.00	Slopes 8 to 15%	0.37	Silt or clay textures from 10-60"	0.50
622:							
Xerorthents, shallow----	40	Not rated		Limitations		Not rated	
				Slopes > 15%	1.00		
				Bedrock depth < 40"	1.00		

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
622:							
Typic Haploxeralfs gravelly loam-----	30	Not rated		Limitations Slopes > 15% Bedrock depth < 40"	1.00 0.99	Not rated	
Rock outcrop, mudflow- breccia cliffs-----	15	Not rated		Not rated		Not rated	
623:							
Xerorthents, shallow----	40	Not rated		Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not rated	
Typic Haploxeralfs gravelly loam-----	25	Not rated		Limitations Slopes > 15% Bedrock depth < 40"	1.00 0.99	Not rated	
Rock outcrop, mudflow- breccia cliffs-----	20	Not rated		Not rated		Not rated	
624:							
Ultic Haploxeralfs, mesic, gravelly loam---	60	Not rated		Limitations Bedrock depth from 40-60"	0.96	Not rated	
Rockstripe very gravelly loam-----	25	Limitations Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35%	1.00 0.40	Limitations Bedrock depth < 40"	1.00	Not suited Depth to bedrock < 40" Fragments (>3") 25-50%	1.00 0.01
625:							
Ultic Haploxeralfs, mesic, gravelly loam---	50	Not rated		Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.96	Not rated	

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
625: Rockstripe very gravelly loam-----	35	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35%	1.00 1.00 0.40	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (>3") 25-50%	1.00 1.00 0.01
626: Ultic Haploxeralfs gravelly loam-----	40	Not rated		Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.61	Not rated	
Rockstripe very gravelly loam-----	35	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35%	1.00 1.00 0.40	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (>3") 25-50%	1.00 1.00 0.01
Rock outcrop, mudflow- breccia cliffs-----	15	Not rated		Not rated		Not rated	
627: Ultic Haploxeralfs gravelly loam-----	40	Not rated		Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.61	Not rated	
Rockstripe very gravelly loam-----	35	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35%	1.00 1.00 0.40	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (>3") 25-50%	1.00 1.00 0.01
Rock outcrop, mudflow- breccia cliffs-----	15	Not rated		Not rated		Not rated	

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
628: Rockstripe very gravelly loam-----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35%	1.00 1.00 0.40	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (>3") 25-50%	1.00 1.00 0.01
Ultic Haploxeralfs gravelly loam-----	35	Not rated		Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.61	Not rated	
Rock outcrop, mudflow- breccia cliffs-----	20	Not rated		Not rated		Not rated	
629: Slideland gravelly loam	80	Limitations Clay loam, silty clay, silty clay loam Slopes 8 to 15%	0.50 0.37	Limitations Slopes 8 to 15%	0.37	Suited Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam Slopes 8 to 15%	0.50 0.50 0.37
630: Slideland gravelly loam	80	Limitations Slopes > 15% Clay loam, silty clay, silty clay loam	1.00 0.50	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
631: Slideland gravelly loam	80	Limitations Slopes > 15% Clay loam, silty clay, silty clay loam	1.00 0.50	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
632: Ultic Haploxeralfs, conglomerate, very deep	50	Not rated		Limitations Slopes 8 to 15%	0.84	Not rated	
Ultic Haploxeralfs, conglomerate, moderately deep-----	40	Not rated		Limitations Bedrock depth < 40"	1.00	Not rated	
633: Ultic Haploxeralfs, conglomerate, very deep	60	Not rated		Limitations Slopes > 15%	1.00	Not rated	
Ultic Haploxeralfs, conglomerate, moderately deep-----	30	Not rated		Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not rated	
634: Ultic Haploxeralfs, conglomerate, very deep	60	Not rated		Limitations Slopes > 15%	1.00	Not rated	
Ultic Haploxeralfs, conglomerate, moderately deep-----	30	Not rated		Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not rated	
635: Ultic Haploxeralfs, conglomerate, very deep	50	Not rated		Limitations Slopes > 15%	1.00	Not rated	
Ultic Haploxeralfs, conglomerate, moderately deep-----	40	Not rated		Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not rated	

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
636: Ultic Haploxeralfs, conglomerate, moderately deep-----	50	Not rated		Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not rated	
Ultic Haploxeralfs, conglomerate, very deep	40	Not rated		Limitations Slopes > 15%	1.00	Not rated	
637: Ultic Haploxeralfs, sandstone-----	80	Not rated		Limitations Slopes 8 to 15%	0.01	Not rated	
638: Ultic Haploxeralfs, sandstone-----	80	Not rated		Limitations Slopes > 15%	1.00	Not rated	
639: Ultic Haploxeralfs, sandstone-----	75	Not rated		Limitations Slopes > 15%	1.00	Not rated	
640: Ultic Haploxeralfs, sandstone-----	75	Not rated		Limitations Slopes > 15%	1.00	Not rated	
641: Ultic Haploxeralfs, sandstone-----	75	Not rated		Limitations Slopes > 15%	1.00	Not rated	
642: Chinacamp gravelly loam	70	Limitations Clay loam, silty clay, silty clay loam	0.50	No limitations		Suited Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam Fragments (>3") 25-50%	0.50 0.50 0.06

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
643: Chinacamp gravelly loam	70	Limitations Slopes > 15% Clay loam, silty clay, silty clay loam	1.00 0.50	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
644: Chinacamp gravelly loam	70	Limitations Slopes > 15% Clay loam, silty clay, silty clay loam	1.00 0.50	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
645: Chinacamp gravelly loam	70	Limitations Slopes > 15% Clay loam, silty clay, silty clay loam	1.00 0.50	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
646: Coalcanyon taxadjunct very gravelly loam-----	80	Limitations Fragments (3-10") > 35% Clay loam, silty clay, silty clay loam	1.00 0.50	No limitations		Suited Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam Fragments (>3") 25-50%	0.50 0.50 0.33
647: Coalcanyon taxadjunct very gravelly loam-----	75	Limitations Slopes > 15% Fragments (3-10") > 35% Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
648: Coalcanyon taxadjunct very gravelly loam-----	80	Limitations Slopes > 15% Fragments (3-10") > 35% Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
649: Coalcanyon taxadjunct very gravelly loam-----	75	Limitations Slopes > 15% Fragments (3-10") > 35% Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
650: Schott very gravelly loam-----	65	Limitations Lithic or paralithic bedrock < 72" Fragments (3-10") > 35% Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Bedrock depth from 40-60"	0.42	Not suited Fragments (>3") > 50% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	0.99 0.50 0.50
651: Schott very gravelly loam-----	65	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") > 35%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.42	Not suited Slopes > 15% Fragments (>3") > 50% Silt or clay textures from 10-60"	1.00 0.99 0.50
652: Schott very gravelly loam-----	65	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") > 35%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.42	Not suited Slopes > 15% Fragments (>3") > 50% Silt or clay textures from 10-60"	1.00 0.99 0.50

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
652: Rock outcrop, mudflow breccia-----	20	Not rated		Not rated		Not rated	
654: Coridge bouldery loam---	70	Limitations Saturation < 6' depth Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Saturation < 5' depth Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Saturation from 18 to 40" depth Silt or clay textures from 10-60"	1.00 0.99 0.50
Rock outcrop, Cohasset basalt-----	20	Not rated		Not rated		Not rated	
655: Coridge bouldery loam---	70	Limitations Saturation < 6' depth Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Saturation < 5' depth Bedrock depth < 40" Slopes 8 to 15%	1.00 1.00 0.16	Not suited Depth to bedrock < 40" Saturation from 18 to 40" depth Silt or clay textures from 10-60"	1.00 0.88 0.50
Rock outcrop, Cohasset basalt-----	20	Not rated		Not rated		Not rated	
656: Rock outcrop, basalt cliffs-----	40	Not rated		Not rated		Not rated	
Coalcanyon taxadjunct very gravelly loam----	40	Limitations Slopes > 15% Fragments (3-10") > 35% Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
657: Bonneyridge sandy loam--	35	Limitations Seepage in bottom layer Sandy textures	1.00 0.50	Limitations Seepage in 20-40" depth	1.00	Not suited Permeability > 2.0 in/hr Sandy textures	1.00 0.50

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
657: Chawanakee gravelly sandy loam-----	30	Limitations Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00	Limitations Bedrock depth < 40"	1.00	Not suited Depth to bedrock < 40" Permeability > 2.0 in/hr Fragments (<75mm) 25-50%	1.00 0.88 0.21
Rock outcrop, quartz diorite-----	20	Not rated		Not rated		Not rated	
658: Bonneyridge sandy loam--	35	Limitations Slopes > 15% Seepage in bottom layer Sandy textures	1.00 1.00 0.50	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Permeability > 2.0 in/hr Sandy textures	1.00 1.00 0.50
Chawanakee gravelly sandy loam-----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Permeability > 2.0 in/hr	1.00 1.00 0.88
Rock outcrop, quartz diorite-----	25	Not rated		Not rated		Not rated	
659: Bonneyridge sandy loam--	35	Limitations Slopes > 15% Seepage in bottom layer Sandy textures	1.00 1.00 0.50	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Permeability > 2.0 in/hr Sandy textures	1.00 1.00 0.50
Chawanakee gravelly sandy loam-----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Permeability > 2.0 in/hr	1.00 1.00 0.88
Rock outcrop, quartz diorite-----	25	Not rated		Not rated		Not rated	

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
660:							
Bonneyridge sandy loam--	30	Limitations Slopes > 15% Seepage in bottom layer Sandy textures	1.00 1.00 0.50	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Permeability > 2.0 in/hr Sandy textures	1.00 1.00 0.50
Chawanakee gravelly sandy loam-----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Permeability > 2.0 in/hr	1.00 1.00 0.88
Rock outcrop, quartz diorite-----	30	Not rated		Not rated		Not rated	
661:							
Millerridge gravelly sandy clay loam-----	45	Limitations Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 0.50	Limitations Bedrock depth < 40"	1.00	Not suited Depth to bedrock < 40" Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
Boxrobber cobbly sandy clay loam-----	40	Limitations Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35% Clay loam, silty clay, silty clay loam	1.00 0.72 0.50	Limitations Bedrock depth < 40"	1.00	Not suited Depth to bedrock < 40" Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
662:							
Millerridge gravelly sandy clay loam-----	45	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Silt or clay textures from 10-60"	1.00 1.00 0.50

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
662: Boxrobbler cobbly sandy clay loam-----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35%	1.00 1.00 0.72	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Silt or clay textures from 10-60"	1.00 1.00 0.50
663: Millerridge gravelly sandy clay loam-----	45	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Silt or clay textures from 10-60"	1.00 1.00 0.50
Boxrobbler cobbly sandy clay loam-----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35%	1.00 1.00 0.72	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Silt or clay textures from 10-60"	1.00 1.00 0.50
664: Millerridge gravelly sandy clay loam-----	45	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Silt or clay textures from 10-60"	1.00 1.00 0.50
Boxrobbler cobbly sandy clay loam-----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35%	1.00 1.00 0.72	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Silt or clay textures from 10-60"	1.00 1.00 0.50

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
665: Surnuf gravelly loam----	40	Limitations Clay or silty clay Slopes 8 to 15%	1.00 0.01	Limitations Slopes 8 to 15%	0.01	Not suited Silty clay or clay 10-60" Packing (OL, OH, CH, or MH) Clay or silty clay	1.00 1.00 1.00
Bigridge loam-----	40	Limitations Lithic or paralithic bedrock < 72" Slopes 8 to 15%	1.00 0.01	Limitations Bedrock depth from 40-60" Slopes 8 to 15%	0.35 0.01	Not suited Fragments (<75mm) > 50% Depth to bedrock 40-60" Slopes 8 to 15%	1.00 0.35 0.01
666: Surnuf gravelly loam----	40	Limitations Slopes > 15% Clay or silty clay	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
Bigridge loam-----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.35	Not suited Fragments (<75mm) > 50% Slopes > 15% Depth to bedrock 40-60"	1.00 1.00 0.35
667: Surnuf gravelly loam----	40	Limitations Slopes > 15% Clay or silty clay	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
Bigridge loam-----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.35	Not suited Fragments (<75mm) > 50% Slopes > 15% Depth to bedrock 40-60"	1.00 1.00 0.35
668: Surnuf gravelly loam----	40	Limitations Slopes > 15% Clay or silty clay	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
668: Bigridge loam-----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.35	Not suited Fragments (<75mm) > 50% Slopes > 15% Depth to bedrock 40-60"	1.00 1.00 0.35
669: Oroshore gravelly loam--	35	Limitations Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35% Clay loam, silty clay, silty clay loam	1.00 0.77 0.50	Limitations Bedrock depth < 40" Slopes 8 to 15%	1.00 0.01	Not suited Depth to bedrock < 40" Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
Mounthope loam-----	25	Limitations Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam Slopes 8 to 15%	1.00 0.50 0.01	Limitations Bedrock depth from 40-60" Slopes 8 to 15%	0.26 0.01	Suited Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam Depth to bedrock 40-60"	0.50 0.50 0.26
Dunstone gravelly loam--	20	Limitations Lithic or paralithic bedrock < 72" Slopes 8 to 15%	1.00 0.01	Limitations Bedrock depth < 40" Slopes 8 to 15%	1.00 0.01	Not suited Depth to bedrock < 40" Fragments (<75mm) 25-50% Slopes 8 to 15%	1.00 0.69 0.01
670: Oroshore gravelly loam--	35	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35%	1.00 1.00 0.77	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Silt or clay textures from 10-60"	1.00 1.00 0.50
Mounthope loam-----	25	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.26	Not suited Slopes > 15% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
Dunstone gravelly loam--	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.69

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
671:							
Oroshore gravelly loam--	35	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35%	1.00 1.00 0.77	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Silt or clay textures from 10-60"	1.00 1.00 0.50
Mounthope loam-----	25	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.26	Not suited Slopes > 15% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
Dunstone gravelly loam--	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.69
672:							
Oroshore gravelly loam--	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35%	1.00 1.00 0.77	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Silt or clay textures from 10-60"	1.00 1.00 0.50
Mounthope loam-----	25	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.26	Not suited Slopes > 15% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
Dunstone gravelly loam--	25	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.69

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
674: Chawanakee gravelly sandy loam-----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Permeability > 2.0 in/hr	1.00 1.00 0.88
Bonneyridge sandy loam--	30	Limitations Slopes > 15% Seepage in bottom layer Sandy textures	1.00 1.00 0.50	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Permeability > 2.0 in/hr Sandy textures	1.00 1.00 0.50
Rock outcrop, quartz diorite-----	30	Not rated		Not rated		Not rated	
675: Clearhayes sandy clay loam-----	70	Limitations Flooding >= occasional Saturation < 6' depth Lithic or paralithic bedrock < 72"	1.00 1.00 1.00	Limitations Saturation < 5' depth Seepage in 20-40" depth Bedrock depth from 40-60"	1.00 1.00 0.77	Not suited Permeability > 2.0 in/hr Saturation < 18" depth Depth to bedrock 40-60"	1.00 0.99 0.77
Hamslough clay-----	15	Limitations Flooding >= occasional Saturation < 6' depth Ponding (any duration)	1.00 1.00 1.00	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00
676: Carhart clay-----	50	Limitations Saturation < 6' depth Ponding (any duration) Lithic or paralithic bedrock < 72"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 5' depth Bedrock depth < 40"	1.00 1.00 1.00	Not suited Depth to bedrock < 40" Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00
Anita taxadjunct clay---	40	Limitations Saturation < 6' depth Ponding (any duration) Lithic or paralithic bedrock < 72"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 5' depth Bedrock depth < 40"	1.00 1.00 1.00	Not suited Depth to bedrock < 40" Ponding (any duration) Saturation < 18" depth	1.00 1.00 1.00

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
677:							
Tuscan gravelly loam----	40	Limitations Saturation < 6' depth Lithic or paralithic bedrock < 72" Clay or silty clay	1.00 1.00 1.00	Limitations Depth to pan < 40" Saturation < 5' depth Bedrock depth < 40"	1.00 1.00 1.00	Not suited Depth to pan < 40" Depth to bedrock < 40" Saturation < 18" depth	1.00 1.00 1.00
Fallager loam-----	25	Limitations Saturation < 6' depth Ponding (any duration) Lithic or paralithic bedrock < 72"	1.00 1.00 1.00	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Depth to bedrock < 40" Ponding (any duration)	1.00 1.00 1.00
Anita, gravelly duripan	15	Limitations Saturation < 6' depth Ponding (any duration) Lithic or paralithic bedrock < 72"	1.00 1.00 1.00	Limitations Depth to pan < 40" Ponding (any duration) Saturation < 5' depth	1.00 1.00 1.00	Not suited Depth to pan < 40" Depth to bedrock < 40" Ponding (any duration)	1.00 1.00 1.00
679:							
Lucksev loam-----	40	Limitations Saturation < 6' depth Lithic or paralithic bedrock < 72" Clay or silty clay	1.00 1.00 1.00	Limitations Saturation < 5' depth Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Saturation < 18" depth Silty clay or clay 10-60"	1.00 1.00 1.00
Butteside gravelly loam	35	Limitations Lithic or paralithic bedrock < 72" Clay or silty clay	1.00 1.00	Limitations Bedrock depth < 40"	1.00	Not suited Depth to bedrock < 40" Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
Carhart clay-----	15	Limitations Saturation < 6' depth Lithic or paralithic bedrock < 72" Clay or silty clay	1.00 1.00 1.00	Limitations Saturation < 5' depth Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Saturation < 18" depth Silty clay or clay 10-60"	1.00 1.00 1.00
680:							
Lucksev loam-----	45	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay or silty clay	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Silty clay or clay 10-60"	1.00 1.00 1.00

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
680: Butteside gravelly loam	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay or silty clay	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Silty clay or clay 10-60"	1.00 1.00 1.00
683: Typic Haploxeraalfs, magnesian, low elevation	50	Limitations Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35% Clay loam, silty clay, silty clay loam	1.00 0.66 0.50	Limitations Bedrock depth < 40" Slopes 8 to 15%	1.00 0.01	Not suited Depth to bedrock < 40" Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
Earlal very gravelly loam-----	20	Limitations Lithic or paralithic bedrock < 72" Fragments (3-10") > 35% Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Bedrock depth < 40" Slopes 8 to 15%	1.00 0.16	Not suited Depth to bedrock < 40" Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
Rock outcrop, serpentinite-----	15	Not rated		Not rated		Not rated	
684: Typic Haploxeraalfs, magnesian, low elevation	50	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35%	1.00 1.00 0.66	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Silt or clay textures from 10-60"	1.00 1.00 0.50
Earlal very gravelly loam-----	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") > 35%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Silt or clay textures from 10-60"	1.00 1.00 0.50
Rock outcrop, serpentinite-----	15	Not rated		Not rated		Not rated	

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
685: Bosquejo taxadjunct gravelly substratum----	70	Limitations Saturation < 6' depth Ponding (any duration) Rare flooding	1.00 1.00 0.50	Limitations Ponding (any duration) Saturation < 5' depth Rare flooding	1.00 1.00 0.40	Not suited Ponding (any duration) Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
686: Redsluff taxadjunct clay loam-----	70	Limitations Saturation < 6' depth Lithic or paralithic bedrock < 72" Rare flooding	1.00 1.00 0.50	Limitations Saturation < 5' depth Rare flooding	1.00 0.40	Suited Silt or clay textures from 10-60" Saturation from 18 to 40" depth	0.50 0.11
687: Xerorthents, shallow----	45	Not rated		Limitations Bedrock depth < 40"	1.00	Not rated	
Typic Haploxeralfs gravelly loam-----	40	Not rated		Limitations Bedrock depth < 40" Slopes 8 to 15%	0.99 0.63	Not rated	
700: Retsongulch very gravelly sandy loam----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40" Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (>3") 25-50%	1.00 1.00 0.55
Flumewall gravelly sandy loam-----	25	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35%	1.00 1.00 0.38	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (>3") 25-50%	1.00 1.00 0.83

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
701: Powellton gravelly loam	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15%	1.00
Obstruction gravelly sandy loam-----	30	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Permeability > 2.0 in/hr	1.00 0.50
702: Cerpone gravelly loam---	50	Limitations Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam Slopes 8 to 15%	1.00 0.50 0.37	Limitations Slopes 8 to 15% Bedrock depth from 40-60"	0.37 0.03	Suited Fragments (<75mm) 25-50% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	0.84 0.50 0.50
Typic Haploxeralfs, magnesian, very gravelly loam-----	20	Limitations Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35% Clay loam, silty clay, silty clay loam	1.00 0.82 0.50	Limitations Slopes 8 to 15% Bedrock depth from 40-60"	0.16 0.14	Suited Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam Fragments (<75mm) 25-50%	0.50 0.50 0.23
Earlal very gravelly loam-----	15	Limitations Lithic or paralithic bedrock < 72" Fragments (3-10") > 35% Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Bedrock depth < 40" Slopes 8 to 15%	1.00 0.16	Not suited Depth to bedrock < 40" Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
703: Cerpone gravelly loam---	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.03	Not suited Slopes > 15% Fragments (<75mm) 25-50% Silt or clay textures from 10-60"	1.00 0.84 0.50

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
703: Typic Haploxeralfs, magnesian, very gravelly loam-----	30	Limitations Slopes > 15% Lithic or paralythic bedrock < 72" Fragments (3-10") 15-35%	1.00 1.00 0.82	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.14	Not suited Slopes > 15% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
Earlial very gravelly loam-----	15	Limitations Slopes > 15% Lithic or paralythic bedrock < 72" Fragments (3-10") > 35%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Silt or clay textures from 10-60"	1.00 1.00 0.50
Rock outcrop, serpentinite-----	15	Not rated		Not rated		Not rated	
704: Typic Haploxeralfs, magnesian, very gravelly loam-----	40	Limitations Slopes > 15% Lithic or paralythic bedrock < 72" Fragments (3-10") 15-35%	1.00 1.00 0.82	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.14	Not suited Slopes > 15% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
Earlial very gravelly loam-----	20	Limitations Slopes > 15% Lithic or paralythic bedrock < 72" Fragments (3-10") > 35%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Silt or clay textures from 10-60"	1.00 1.00 0.50
Cerpone gravelly loam---	15	Limitations Slopes > 15% Lithic or paralythic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.03	Not suited Slopes > 15% Fragments (<75mm) 25-50% Silt or clay textures from 10-60"	1.00 0.84 0.50

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
704: Rock outcrop, serpentinite-----	15	Not rated		Not rated		Not rated	
705: Typic Haploxeralfs, magnesian, very gravelly loam-----	35	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35%	1.00 1.00 0.82	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.14	Not suited Slopes > 15% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
Earlial very gravelly loam-----	25	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") > 35%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Silt or clay textures from 10-60"	1.00 1.00 0.50
Cerpone gravelly loam---	15	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.03	Not suited Slopes > 15% Fragments (<75mm) 25-50% Silt or clay textures from 10-60"	1.00 0.84 0.50
Rock outcrop, serpentinite-----	15	Not rated		Not rated		Not rated	
711: Dixmine very gravelly loam-----	45	Limitations Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35% Clay loam, silty clay, silty clay loam	1.00 0.96 0.50	Limitations Bedrock depth from 40-60" Slopes 8 to 15%	0.16 0.01	Suited Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam Fragments (>3") 25-50%	0.50 0.50 0.17

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
711: Toadtown loam-----	40	Limitations Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam Slopes 8 to 15%	1.00 0.50 0.01	Limitations Slopes 8 to 15%	0.01	Suited Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam Slopes 8 to 15%	0.50 0.50 0.01
712: Dixmine very gravelly loam-----	50	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35%	1.00 1.00 0.96	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.16	Not suited Slopes > 15% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
Toadtown loam-----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
713: Dixmine very gravelly loam-----	50	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35%	1.00 1.00 0.96	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.16	Not suited Slopes > 15% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
Toadtown loam-----	35	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
714:							
Dixmine very gravelly loam-----	50	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35%	1.00 1.00 0.96	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.16	Not suited Slopes > 15% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
Toadtown loam-----	35	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
715:							
Logtrain gravelly loam--	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35%	1.00 1.00 0.54	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.14	Not suited Slopes > 15% Fragments (>3") 25-50% Depth to bedrock 40-60"	1.00 0.27 0.14
Bottlehill very gravelly loam-----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Walkermine very gravelly loam-----	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35%	1.00 1.00 0.61	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.37

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
716: Griffgulch very gravelly silt loam-----	40	Limitations Lithic or paralithic bedrock < 72" Clay or silty clay Fragments (3-10") 15-35%	1.00 1.00 0.97	Limitations Bedrock depth from 40-60"	0.01	Not suited Silty clay or clay 10-60" Packing (OL, OH, CH, or MH) Clay or silty clay	1.00 1.00 1.00
Surnuf gravelly loam----	40	Limitations Clay or silty clay Slopes 8 to 15%	1.00 0.01	Limitations Slopes 8 to 15%	0.01	Not suited Silty clay or clay 10-60" Packing (OL, OH, CH, or MH) Clay or silty clay	1.00 1.00 1.00
717: Griffgulch very gravelly silt loam-----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay or silty clay	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.01	Not suited Slopes > 15% Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
Surnuf gravelly loam----	40	Limitations Slopes > 15% Clay or silty clay	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
718: Griffgulch very gravelly silt loam-----	35	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay or silty clay	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.01	Not suited Slopes > 15% Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
Surnuf gravelly loam----	35	Limitations Slopes > 15% Clay or silty clay	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
718: Spine taxadjunct very cobble loam-----	15	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") > 35%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (>3") 25-50%	1.00 1.00 0.84
719: Griffgulch very gravelly silt loam----	35	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay or silty clay	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.01	Not suited Slopes > 15% Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
Surnuf gravelly loam----	30	Limitations Slopes > 15% Clay or silty clay	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
Spine taxadjunct very cobble loam-----	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") > 35%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (>3") 25-50%	1.00 1.00 0.84
720: Dystoxerepts extremely gravelly loam-----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") > 35%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (>3") 25-50%	1.00 1.00 0.90
Haploxerales very gravelly loam-----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") > 35%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.71	Not suited Slopes > 15% Fragments (>3") > 50% Depth to bedrock 40-60"	1.00 1.00 0.71

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
720: Rock outcrop, metavolcanic-----	15	Not rated		Not rated		Not rated	
721: Haploxerands, granitic till, medial sandy loam	70	Not rated		Limitations Seepage in 20-40" depth Slopes 8 to 15%	1.00 0.96	Not rated	
722: Haploxerands, granitic till, medial sandy loam	70	Not rated		Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not rated	
723: Haploxerands, granitic till, medial sandy loam	70	Not rated		Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not rated	
724: Haploxerands, volcanic till, cobbly medial sandy loam-----	75	Not rated		Limitations Seepage in 20-40" depth Slopes 8 to 15%	1.00 0.16	Not rated	
725: Haploxerands, volcanic till, cobbly medial sandy loam-----	75	Not rated		Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not rated	
726: Haploxerands, volcanic till, cobbly medial sandy loam-----	75	Not rated		Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not rated	

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
727: Bonneyridge sandy loam--	85	Limitations Seepage in bottom layer Sandy textures	1.00 0.50	Limitations Seepage in 20-40" depth	1.00	Not suited Permeability > 2.0 in/hr Sandy textures	1.00 0.50
728: Bonneyridge sandy loam--	85	Limitations Slopes > 15% Seepage in bottom layer Sandy textures	1.00 1.00 0.50	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Permeability > 2.0 in/hr Sandy textures	1.00 1.00 0.50
729: Bonneyridge sandy loam--	85	Limitations Slopes > 15% Seepage in bottom layer Sandy textures	1.00 1.00 0.50	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Permeability > 2.0 in/hr Sandy textures	1.00 1.00 0.50
730: Tusccoll gravelly loam--	60	Limitations Slopes > 15% Clay loam, silty clay, silty clay loam	1.00 0.50	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
Schott very gravelly loam-----	25	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") > 35%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.42	Not suited Slopes > 15% Fragments (>3") > 50% Silt or clay textures from 10-60"	1.00 0.99 0.50
731: Tusccoll gravelly loam--	50	Limitations Slopes > 15% Clay loam, silty clay, silty clay loam	1.00 0.50	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
731: Schott very gravelly loam-----	35	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") > 35%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.42	Not suited Slopes > 15% Fragments (>3") > 50% Silt or clay textures from 10-60"	1.00 0.99 0.50
732: Bonepile taxadjunct, duripan substratum-----	90	Limitations Saturation < 6' depth Fragments (3-10") 15-35%	1.00 0.82	Limitations Saturation < 5' depth Depth to pan 40-60"	1.00 0.71	Suited Depth to pan from 40-60" Fragments (>3") 25-50% Fragments (<75mm) 25-50%	0.71 0.29 0.20
733: Haploxeralfs, terrace, gravelly loam-----	75	Not rated		No limitations		Not rated	
734: Haploxerands medial sandy loam-----	55	Not rated		Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not rated	
Aquic Xerofluvents peaty very fine sandy loam-----	35	Limitations Flooding >= occasional Saturation < 6' depth Organic matter (PT, OL, or OH)	1.00 1.00 1.00	Limitations Saturation < 5' depth Seepage in 20-40" depth Frequent flooding	1.00 1.00 0.80	Not suited Saturation < 18" depth Packing (OL, OH, CH, or MH)	1.00 1.00
735: Fluvaquents, loamy-----	80	Not rated		Limitations Saturation < 5' depth Seepage in 20-40" depth Rare flooding	1.00 1.00 0.40	Not rated	
801: Obstruction gravelly sandy loam-----	70	Limitations Seepage in bottom layer Slopes 8 to 15%	1.00 0.16	Limitations Seepage in 20-40" depth Slopes 8 to 15%	1.00 0.16	Suited Permeability > 2.0 in/hr Slopes 8 to 15%	0.50 0.16

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
802: Obskel very gravelly sandy loam-----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.06	Not suited Slopes > 15% Fragments (<75mm) 25-50% Depth to bedrock 40-60"	1.00 0.65 0.06
Obstruction gravelly sandy loam-----	40	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Permeability > 2.0 in/hr	1.00 0.50
803: Obskel very gravelly sandy loam-----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.06	Not suited Slopes > 15% Fragments (<75mm) 25-50% Depth to bedrock 40-60"	1.00 0.65 0.06
Obstruction gravelly sandy loam-----	40	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Permeability > 2.0 in/hr	1.00 0.50
804: Obskel very gravelly sandy loam-----	35	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.06	Not suited Slopes > 15% Fragments (<75mm) 25-50% Depth to bedrock 40-60"	1.00 0.65 0.06
Obstruction gravelly sandy loam-----	25	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Permeability > 2.0 in/hr	1.00 0.50
Retsongulch very gravelly sandy loam----	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40" Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (>3") 25-50%	1.00 1.00 0.55

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
805: Bottlehill very gravelly loam-----	50	Limitations Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 0.50	Limitations Bedrock depth < 40"	1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Silt or clay textures from 10-60"	1.00 1.00 0.50
Walkermine very gravelly loam-----	20	Limitations Lithic or paralithic bedrock < 72" Slopes 8 to 15% Fragments (3-10") 15-35%	1.00 0.84 0.61	Limitations Bedrock depth < 40" Slopes 8 to 15%	1.00 0.84	Not suited Depth to bedrock < 40" Slopes 8 to 15% Fragments (<75mm) 25-50%	1.00 0.84 0.37
Logtrain gravelly loam--	20	Limitations Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35%	1.00 0.54	Limitations Bedrock depth from 40-60"	0.14	Suited Fragments (>3") 25-50% Depth to bedrock 40-60"	0.27 0.14
806: Bottlehill very gravelly loam-----	50	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Walkermine very gravelly loam-----	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35%	1.00 1.00 0.61	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.37
Logtrain gravelly loam--	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35%	1.00 1.00 0.54	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.14	Not suited Slopes > 15% Fragments (>3") 25-50% Depth to bedrock 40-60"	1.00 0.27 0.14

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
807: Bottlehill very gravelly loam-----	35	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Logtrain gravelly loam--	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35%	1.00 1.00 0.54	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.14	Not suited Slopes > 15% Fragments (>3") 25-50% Depth to bedrock 40-60"	1.00 0.27 0.14
Walkermine very gravelly loam-----	25	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35%	1.00 1.00 0.61	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.37
808: Bottlehill very gravelly loam-----	45	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Walkermine very gravelly loam-----	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35%	1.00 1.00 0.61	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.37
Logtrain gravelly loam--	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35%	1.00 1.00 0.54	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.14	Not suited Slopes > 15% Fragments (>3") 25-50% Depth to bedrock 40-60"	1.00 0.27 0.14

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
809: Walkermine very gravelly loam-----	45	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35%	1.00 1.00 0.61	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.37
Bottlehill very gravelly loam-----	15	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Logtrain gravelly loam--	15	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35%	1.00 1.00 0.54	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.14	Not suited Slopes > 15% Fragments (>3") 25-50% Depth to bedrock 40-60"	1.00 0.27 0.14
Rock outcrop, metavolcanic-----	15	Not rated		Not rated		Not rated	
810: Dixmine very gravelly loam-----	35	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35%	1.00 1.00 0.96	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.16	Not suited Slopes > 15% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
Mac gravelly loam-----	25	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.90

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
810: Spine very gravelly loam-----	25	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
811: Powellton gravelly loam	50	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15%	1.00
Toadtown loam-----	40	Limitations Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 0.50	No limitations		Suited Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	0.50 0.50
812: Powellton gravelly loam	50	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15%	1.00
Toadtown loam-----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
813: Powellton gravelly loam	50	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15%	1.00
Toadtown loam-----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
814: Mountyana gravelly loam	80	Limitations Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam Slopes 8 to 15%	1.00 0.50 0.16	Limitations Slopes 8 to 15%	0.16	Suited Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam Slopes 8 to 15%	0.50 0.50 0.16
815: Mountyana gravelly loam	80	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
817: Lydon very gravelly medial coarse sandy loam-----	80	Limitations Lithic or paralithic bedrock < 72" Seepage in bottom layer Fragments (3-10") 15-35%	1.00 1.00 0.73	Limitations Bedrock depth < 40" Seepage in 20-40" depth	1.00 1.00	Not suited Depth to bedrock < 40" Fragments (<75mm) 25-50% Permeability > 2.0 in/hr	1.00 0.35 0.12
818: Lydon very gravelly medial coarse sandy loam-----	75	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40" Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.35
819: Lydon very gravelly medial coarse sandy loam-----	65	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40" Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.35
Rock outcrop, mudflow breccia-----	20	Not rated		Not rated		Not rated	

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
820: Lydon very gravelly medial coarse sandy loam-----	60	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40" Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.35
Rock outcrop, mudflow breccia-----	25	Not rated		Not rated		Not rated	
821: Lydon very gravelly medial coarse sandy loam-----	55	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40" Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.35
Rock outcrop, mudflow breccia-----	30	Not rated		Not rated		Not rated	
822: Bonepile gravelly medial loam-----	85	Limitations Lithic or paralithic bedrock < 72"	1.00	Limitations Bedrock depth from 40-60"	0.88	Suited Depth to bedrock 40-60" Fragments (<75mm) 25-50%	0.88 0.16
823: Bonepile gravelly medial loam-----	85	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.88	Not suited Slopes > 15% Depth to bedrock 40-60" Fragments (<75mm) 25-50%	1.00 0.88 0.16
824: Beecee very gravelly medial loam-----	85	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Not suited Fragments (<75mm) > 50% Slopes > 15%	1.00 1.00

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
825: Beecee very gravelly medial loam-----	60	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Not suited Fragments (<75mm) > 50% Slopes > 15%	1.00 1.00
Lydon very gravelly medial coarse sandy loam-----	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40" Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.35
826: Redbone gravelly medial sandy loam-----	80	Limitations Lithic or paralithic bedrock < 72" Seepage in bottom layer Slopes 8 to 15%	1.00 1.00 1.00 0.16	Limitations Seepage in 20-40" depth Slopes 8 to 15% Bedrock depth from 40-60"	1.00 0.16 0.12	Not suited Fragments (<75mm) > 50% Slopes 8 to 15% Permeability > 2.0 in/hr	1.00 0.16 0.12
827: Redbone gravelly medial sandy loam-----	80	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth Bedrock depth from 40-60"	1.00 1.00 0.12	Not suited Fragments (<75mm) > 50% Slopes > 15% Permeability > 2.0 in/hr	1.00 1.00 0.12
829: Paradiso loam-----	80	Limitations Clay or silty clay	1.00	No limitations		Not suited Silty clay or clay 10-60" Packing (OL, OH, CH, or MH) Clay or silty clay	1.00 1.00 1.00
830: Paradiso loam-----	75	Limitations Slopes > 15% Clay or silty clay	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
831: Surnuf gravelly loam----	40	Limitations Clay or silty clay Slopes 8 to 15%	1.00 0.01	Limitations Slopes 8 to 15%	0.01	Not suited Silty clay or clay 10-60" Packing (OL, OH, CH, or MH) Clay or silty clay	1.00 1.00 1.00
Bigridge loam-----	30	Limitations Lithic or paralithic bedrock < 72" Slopes 8 to 15%	1.00 0.01	Limitations Bedrock depth from 40-60" Slopes 8 to 15%	0.35 0.01	Not suited Fragments (<75mm) > 50% Depth to bedrock 40-60" Slopes 8 to 15%	1.00 0.35 0.01
Spine very gravelly loam-----	15	Limitations Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam Slopes 8 to 15%	1.00 0.50 0.04	Limitations Bedrock depth < 40" Slopes 8 to 15%	1.00 0.04	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Silt or clay textures from 10-60"	1.00 1.00 0.50
832: Surnuf gravelly loam----	40	Limitations Slopes > 15% Clay or silty clay	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
Bigridge loam-----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.35	Not suited Fragments (<75mm) > 50% Slopes > 15% Depth to bedrock 40-60"	1.00 1.00 0.35
Spine very gravelly loam-----	15	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
833: Surnuf gravelly loam----	60	Limitations Slopes > 15% Clay or silty clay	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
833: Bigridge loam-----	15	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.35	Not suited Fragments (<75mm) > 50% Slopes > 15% Depth to bedrock 40-60"	1.00 1.00 0.35
Spine very gravelly loam-----	15	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
834: Hietanen gravelly loam--	50	Limitations Lithic or paralithic bedrock < 72"	1.00	Limitations Bedrock depth from 40-60"	0.42	Suited Depth to bedrock 40-60"	0.42
Mac gravelly loam-----	30	Limitations Lithic or paralithic bedrock < 72"	1.00	Limitations Bedrock depth < 40"	1.00	Not suited Depth to bedrock < 40" Fragments (<75mm) 25-50%	1.00 0.90
835: Hietanen gravelly loam--	60	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.42	Not suited Slopes > 15% Depth to bedrock 40-60"	1.00 0.42
Mac gravelly loam-----	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.90
836: Hietanen gravelly loam--	50	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.42	Not suited Slopes > 15% Depth to bedrock 40-60"	1.00 0.42

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
836: Mac gravelly loam-----	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.90
Spine very gravelly loam-----	15	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
837: Hietanen gravelly loam--	35	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.42	Not suited Slopes > 15% Depth to bedrock 40-60"	1.00 0.42
Spine very gravelly loam-----	25	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Mac gravelly loam-----	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.90
838: Dixmine very gravelly loam-----	35	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35%	1.00 1.00 0.96	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.16	Not suited Slopes > 15% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
838: Spine very gravelly loam-----	25	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Mac gravelly loam-----	25	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.90
839: Chawanakee gravelly sandy loam-----	55	Limitations Lithic or paralithic bedrock < 72" Seepage in bottom layer Slopes 8 to 15%	1.00 1.00 1.00 0.16	Limitations Bedrock depth < 40" Slopes 8 to 15%	1.00 0.16	Not suited Depth to bedrock < 40" Permeability > 2.0 in/hr Fragments (<75mm) 25-50%	1.00 0.88 0.21
Billscabin gravelly sandy loam-----	35	Limitations Seepage in bottom layer Sandy textures Slopes 8 to 15%	1.00 0.50 0.16	Limitations Seepage in 20-40" depth Slopes 8 to 15%	1.00 0.16	Not suited Permeability > 2.0 in/hr Fragments (<75mm) 25-50% Sandy textures	1.00 0.98 0.50
841: Billscabin gravelly sandy loam-----	50	Limitations Slopes > 15% Seepage in bottom layer Sandy textures	1.00 1.00 0.50	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Permeability > 2.0 in/hr Fragments (<75mm) 25-50%	1.00 1.00 0.98
Bonneyridge sandy loam--	35	Limitations Slopes > 15% Seepage in bottom layer Sandy textures	1.00 1.00 0.50	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Permeability > 2.0 in/hr Sandy textures	1.00 1.00 0.50

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
842: Billscabin gravelly sandy loam-----	60	Limitations Slopes > 15% Seepage in bottom layer Sandy textures	1.00 1.00 0.50	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Permeability > 2.0 in/hr Fragments (<75mm) 25-50%	1.00 1.00 0.98
Bonneyr ridge sandy loam--	25	Limitations Slopes > 15% Seepage in bottom layer Sandy textures	1.00 1.00 0.50	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Permeability > 2.0 in/hr Sandy textures	1.00 1.00 0.50
846: Bonneyr ridge sandy loam--	60	Limitations Seepage in bottom layer Sandy textures Slopes 8 to 15%	1.00 0.50 0.01	Limitations Seepage in 20-40" depth Slopes 8 to 15%	1.00 0.01	Not suited Permeability > 2.0 in/hr Sandy textures Slopes 8 to 15%	1.00 0.50 0.01
Lewisflat loam-----	20	Limitations Seepage in bottom layer Slopes 8 to 15%	1.00 0.01	Limitations Slopes 8 to 15%	0.01	Suited Permeability > 2.0 in/hr Slopes 8 to 15%	0.09 0.01
847: Bonneyr ridge sandy loam--	60	Limitations Slopes > 15% Seepage in bottom layer Sandy textures	1.00 1.00 0.50	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Permeability > 2.0 in/hr Sandy textures	1.00 1.00 0.50
Lewisflat loam-----	20	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Permeability > 2.0 in/hr	1.00 0.09
848: Bonneyr ridge sandy loam--	60	Limitations Slopes > 15% Seepage in bottom layer Sandy textures	1.00 1.00 0.50	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Permeability > 2.0 in/hr Sandy textures	1.00 1.00 0.50
Lewisflat loam-----	20	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Permeability > 2.0 in/hr	1.00 0.09

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
850: Lewisflat loam-----	85	Limitations Seepage in bottom layer	1.00	No limitations		Suited Permeability > 2.0 in/hr	0.09
851: Lewisflat loam-----	80	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Permeability > 2.0 in/hr	1.00 0.09
852: Lewisflat loam-----	75	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Permeability > 2.0 in/hr	1.00 0.09
860: Toadtown gravelly loam--	60	Limitations Clay or silty clay Slopes 8 to 15%	1.00 0.01	Limitations Slopes 8 to 15%	0.01	Not suited Silty clay or clay 10-60" Packing (OL, OH, CH, or MH) Clay or silty clay	1.00 1.00 1.00
Powellton silt loam-----	20	Limitations Seepage in bottom layer Slopes 8 to 15%	1.00 0.01	Limitations Slopes 8 to 15%	0.01	Suited Slopes 8 to 15%	0.01
861: Toadtown gravelly loam--	60	Limitations Slopes > 15% Clay or silty clay	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
Powellton silt loam-----	20	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15%	1.00
862: Toadtown gravelly loam--	60	Limitations Slopes > 15% Clay or silty clay	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
Powellton silt loam-----	20	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15%	1.00

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
863: Toadtown gravelly loam--	60	Limitations Slopes > 15% Clay or silty clay	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
Powellton silt loam----	20	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15%	1.00
880: Sites taxadjunct gravelly loam-----	50	Limitations Clay or silty clay Slopes 8 to 15%	1.00 0.01	Limitations Slopes 8 to 15%	0.01	Not suited Silty clay or clay 10-60" Packing (OL, OH, CH, or MH) Clay or silty clay	1.00 1.00 1.00
Jocal taxadjunct gravelly loam-----	35	Limitations Lithic or paralithic bedrock < 72" Slopes 8 to 15%	1.00 0.01	Limitations Bedrock depth from 40-60" Slopes 8 to 15%	0.26 0.01	Not suited Fragments (<75mm) > 50% Depth to bedrock 40-60"	1.00 0.26
881: Sites taxadjunct gravelly loam-----	50	Limitations Slopes > 15% Clay or silty clay	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
Jocal taxadjunct gravelly loam-----	35	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.26	Not suited Fragments (<75mm) > 50% Slopes > 15% Depth to bedrock 40-60"	1.00 1.00 0.26
882: Sites taxadjunct gravelly loam-----	50	Limitations Slopes > 15% Clay or silty clay	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
882: Jocal taxadjunct gravelly loam-----	35	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.26	Not suited Fragments (<75mm) > 50% Slopes > 15% Depth to bedrock 40-60"	1.00 1.00 0.26
883: Sites taxadjunct gravelly loam-----	50	Limitations Slopes > 15% Clay or silty clay	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
Jocal taxadjunct gravelly loam-----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.26	Not suited Fragments (<75mm) > 50% Slopes > 15% Depth to bedrock 40-60"	1.00 1.00 0.26
885: Rogerville silt loam----	75	Limitations Lithic or paralithic bedrock < 72" Clay or silty clay Slopes 8 to 15%	1.00 1.00 0.01	Limitations Bedrock depth from 40-60" Slopes 8 to 15%	0.32 0.01	Not suited Silty clay or clay 10-60" Packing (OL, OH, CH, or MH) Clay or silty clay	1.00 1.00 1.00
886: Rogerville silt loam----	80	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay or silty clay	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.32	Not suited Slopes > 15% Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
892: Rogerville silt loam----	85	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay or silty clay	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.32	Not suited Slopes > 15% Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
893: Rogerville silt loam----	85	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay or silty clay	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.32	Not suited Slopes > 15% Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
902: Lava flows, Lovejoy basalt-----	50	Not rated		Not rated		Not rated	
Lumpkin gravelly medial sandy loam-----	40	Limitations Lithic or paralithic bedrock < 72" Seepage in bottom layer Fragments (3-10") > 35%	1.00 1.00 1.00	Limitations Bedrock depth < 40"	1.00	Not rated	
903: Mudwash gravelly medial sandy loam-----	45	Limitations Lithic or paralithic bedrock < 72" Slopes 8 to 15%	1.00 0.01	Limitations Seepage in 20-40" depth Slopes 8 to 15%	1.00 0.01	Suited Fragments (<75mm) 25-50% Slopes 8 to 15%	0.91 0.01
Timberisland very gravelly medial sandy loam-----	25	Limitations Lithic or paralithic bedrock < 72" Fragments (3-10") > 35% Slopes > 15%	1.00 1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth Bedrock depth from 40-60"	1.00 1.00 0.61	Not suited Organic matter (PT) Slopes > 15% Fragments (>3") 25-50%	1.00 1.00 0.69
Lavatop gravelly medial fine sandy loam-----	20	Limitations Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35% Slopes 8 to 15%	1.00 0.59 0.01	Limitations Bedrock depth < 40" Slopes 8 to 15%	1.00 0.01	Not suited Depth to bedrock < 40" Organic matter (PT) Fragments (<75mm) 25-50%	1.00 1.00 0.43
904: Lava flows, Lovejoy basalt-----	60	Not rated		Not rated		Not rated	

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
904: Lavatop gravelly medial fine sandy loam-----	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35%	1.00 1.00 0.59	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Organic matter (PT)	1.00 1.00 1.00
905: Lava flows, Lovejoy basalt-----	60	Not rated		Not rated		Not rated	
Lumpkin gravelly medial sandy loam-----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not rated	
906: Lava flows, Lovejoy basalt-----	60	Not rated		Not rated		Not rated	
Lumpkin gravelly medial sandy loam-----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not rated	
911: Endoaquolls loam-----	75	Not rated		Limitations Saturation < 5' depth Occasional flooding	1.00 0.60	Not rated	
923: Powderhouse medial sandy loam-----	45	Limitations Lithic or paralithic bedrock < 72" Seepage in bottom layer Fragments (3-10") 15-35%	1.00 1.00 1.00 0.40	Limitations Bedrock depth < 40" Seepage in 20-40" depth Slopes 8 to 15%	1.00 1.00 0.01	Not suited Depth to bedrock < 40" Organic matter (PT) Permeability > 2.0 in/hr	1.00 1.00 0.31

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
923: McNair medial coarse sandy loam-----	25	Limitations Lithic or paralithic bedrock < 72" Seepage in bottom layer Slopes 8 to 15%	1.00 1.00 0.01	Limitations Seepage in 20-40" depth Bedrock depth from 40-60" Slopes 8 to 15%	1.00 0.02 0.01	Suited Fragments (<75mm) 25-50% Permeability > 2.0 in/hr Depth to bedrock 40-60"	0.79 0.09 0.02
Greenwell medial sandy loam-----	20	Limitations Lithic or paralithic bedrock < 72" Slopes 8 to 15%	1.00 0.01	Limitations Bedrock depth < 40" Slopes 8 to 15%	1.00 0.01	Not suited Depth to bedrock < 40" Organic matter (PT) Slopes 8 to 15%	1.00 1.00 0.01
924: Powderhouse medial sandy loam-----	45	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40" Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Organic matter (PT)	1.00 1.00 1.00
McNair medial coarse sandy loam-----	25	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth Bedrock depth from 40-60"	1.00 1.00 0.02	Not suited Slopes > 15% Fragments (<75mm) 25-50% Permeability > 2.0 in/hr	1.00 0.79 0.09
Greenwell medial sandy loam-----	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Organic matter (PT)	1.00 1.00 1.00
925: Powderhouse medial sandy loam-----	45	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40" Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Organic matter (PT)	1.00 1.00 1.00

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
925: McNair medial coarse sandy loam-----	25	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth Bedrock depth from 40-60"	1.00 1.00 0.02	Not suited Slopes > 15% Fragments (<75mm) 25-50% Permeability > 2.0 in/hr	1.00 0.79 0.09
Greenwell medial sandy loam-----	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Organic matter (PT)	1.00 1.00 1.00
930: Shakeridge gravelly medial coarse sandy loam-----	50	Limitations Slopes 8 to 15%	0.01	Limitations Seepage in 20-40" depth Slopes 8 to 15%	1.00 0.01	Not suited Fragments (<75mm) > 50% Organic matter (PT) Slopes 8 to 15%	1.00 1.00 0.01
Timberisland very gravelly medial sandy loam-----	40	Limitations Lithic or paralithic bedrock < 72" Fragments (3-10") > 35% Seepage in bottom layer	1.00 1.00 1.00	Limitations Seepage in 20-40" depth Bedrock depth from 40-60" Slopes 8 to 15%	1.00 0.61 0.01	Not suited Organic matter (PT) Fragments (>3") 25-50% Depth to bedrock 40-60"	1.00 0.69 0.61
931: Shakeridge gravelly medial coarse sandy loam-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Fragments (<75mm) > 50% Slopes > 15% Organic matter (PT)	1.00 1.00 1.00
Mudwash gravelly medial sandy loam-----	25	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Fragments (<75mm) 25-50%	1.00 0.91

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
931: Timberisland very gravelly medial sandy loam-----	15	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") > 35%	1.00 1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth Bedrock depth from 40-60"	1.00 1.00 0.61	Not suited Slopes > 15% Organic matter (PT) Fragments (>3") 25-50%	1.00 1.00 0.69
932: Shakeridge gravelly medial coarse sandy loam-----	50	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Fragments (<75mm) > 50% Slopes > 15% Organic matter (PT)	1.00 1.00 1.00
Mudwash gravelly medial sandy loam-----	35	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Fragments (<75mm) 25-50%	1.00 0.91
933: Shakeridge gravelly medial coarse sandy loam-----	80	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Fragments (<75mm) > 50% Slopes > 15% Organic matter (PT)	1.00 1.00 1.00
934: Mudwash gravelly medial sandy loam-----	80	Limitations Lithic or paralithic bedrock < 72" Slopes 8 to 15%	1.00 0.01	Limitations Seepage in 20-40" depth Slopes 8 to 15%	1.00 0.01	Suited Fragments (<75mm) 25-50% Slopes 8 to 15%	0.91 0.01
939: Fluvaquentic Humaquepts very fine sandy loam---	85	Limitations Saturation < 6' depth Rare flooding	1.00 0.50	Limitations Saturation < 5' depth Rare flooding	1.00 0.40	Not suited Saturation < 18" depth	1.00

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
940: Dejonah gravelly loam---	50	Limitations Lithic or paralithic bedrock < 72" Slopes 8 to 15%	1.00 0.01	Limitations Seepage in 20-40" depth Slopes 8 to 15%	1.00 0.01	Suited Permeability > 2.0 in/hr Slopes 8 to 15%	0.09 0.01
Stagpoint loam-----	30	Limitations Seepage in bottom layer Fragments (3-10") 15-35% Slopes 8 to 15%	1.00 0.94 0.01	Limitations Slopes 8 to 15%	0.01	Not suited Fragments (>3") > 50% Permeability > 2.0 in/hr Slopes 8 to 15%	1.00 0.96 0.01
941: Dejonah gravelly loam---	50	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Permeability > 2.0 in/hr	1.00 0.09
Stagpoint loam-----	30	Limitations Slopes > 15% Seepage in bottom layer Fragments (3-10") 15-35%	1.00 1.00 0.94	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Fragments (>3") > 50% Permeability > 2.0 in/hr	1.00 1.00 0.96
942: Stagpoint loam-----	50	Limitations Slopes > 15% Seepage in bottom layer Fragments (3-10") 15-35%	1.00 1.00 0.94	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Fragments (>3") > 50% Permeability > 2.0 in/hr	1.00 1.00 0.96
Dejonah gravelly loam---	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Permeability > 2.0 in/hr	1.00 0.09
948: Stagpoint loam-----	55	Limitations Slopes > 15% Seepage in bottom layer Fragments (3-10") 15-35%	1.00 1.00 0.94	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Fragments (>3") > 50% Permeability > 2.0 in/hr	1.00 1.00 0.96
Dejonah gravelly loam---	35	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Permeability > 2.0 in/hr	1.00 0.09

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
949: Rogerville taxadjunct fine sandy loam-----	80	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.02	Not suited Slopes > 15% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
950: Lumpkin taxadjunct very gravelly medial very fine sandy loam-----	40	Limitations Lithic or paralithic bedrock < 72" Seepage in bottom layer Slopes 8 to 15%	1.00 1.00 0.01	Limitations Bedrock depth < 40" Slopes 8 to 15%	1.00 0.01	Not rated	
Rock outcrop, olivine basalt, andesite, or mudflow-----	25	Not rated		Not rated		Not rated	
Powderhouse medial sandy loam-----	20	Limitations Lithic or paralithic bedrock < 72" Seepage in bottom layer Fragments (3-10") 15-35%	1.00 1.00 0.40	Limitations Bedrock depth < 40" Seepage in 20-40" depth Slopes 8 to 15%	1.00 1.00 0.01	Not suited Depth to bedrock < 40" Organic matter (PT) Permeability > 2.0 in/hr	1.00 1.00 0.31
951: Lumpkin taxadjunct very gravelly medial very fine sandy loam-----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not rated	
Rock outcrop, andesite--	25	Not rated		Not rated		Not rated	

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
951: Powderhouse medial sandy loam-----	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40" Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Organic matter (PT)	1.00 1.00 1.00
960: Surnuf gravelly loam, high elevation-----	85	Limitations Clay or silty clay	1.00	No limitations		Not suited Silty clay or clay 10-60" Packing (OL, OH, CH, or MH) Clay or silty clay	1.00 1.00 1.00
961: Surnuf gravelly loam, high elevation-----	85	Limitations Clay or silty clay Slopes 8 to 15%	1.00 0.37	Limitations Slopes 8 to 15%	0.37	Not suited Silty clay or clay 10-60" Packing (OL, OH, CH, or MH) Clay or silty clay	1.00 1.00 1.00
962: Surnuf gravelly loam, high elevation-----	85	Limitations Slopes > 15% Clay or silty clay	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
963: Surnuf gravelly loam, high elevation-----	85	Limitations Slopes > 15% Clay or silty clay	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silty clay or clay 10-60" Packing (OL, OH, CH, or MH)	1.00 1.00 1.00
990: Riverwash, frequently flooded-----	100	Not rated		Not rated		Not rated	

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Limitations	Value	Limitations	Value	Limitations	Value
991: Xerofluvents sandy loam, frequently flooded-----	75	Not rated		Limitations Saturation < 5' depth Seepage in 20-40" depth Frequent flooding	 1.00 1.00 0.80	Not rated	
995: Pits, gravel-----	100	Not rated		Not rated		Not rated	
996: Dumps, excavated material-----	100	Not rated		Not rated		Not rated	
997: Pits-----	95	Not rated		Not rated		Not rated	
998: Dumps, landfill-----	100	Not rated		Not rated		Not rated	
999: Water-----	100	Not rated		Not rated		Not rated	
DAM: Dam, manmade-----	100	Not rated		Not rated		Not rated	

The interpretation for trench sanitary landfill evaluates the following soil properties at variable depths in the soil: flooding, ponding, wetness, slope, depth to hard or soft bedrock, depth to a thick or thin cemented pan, fragments 3 to 10 inches in size, sodium content (SAR), pH, clayey or sandy textures, and permeability that is too rapid, allowing seepage in some climates.

The interpretation for area sanitary landfill evaluates the following soil properties at variable depths in the soil: flooding, ponding, wetness, slope, depth to bedrock, depth to a cemented pan, and permeability that is too rapid, allowing seepage in some climates.

The interpretation for daily cover for landfill evaluates the following soil properties at variable depths in the soil: ponding; wetness; slope; depth to bedrock; depth to a cemented pan; fragments more than, equal to, or less than 3 inches in size; Unified class for peat (PT); Unified classes for packing (OL, OH, CH, and MH); sandy or clayey textures; pH; carbonates; sodium content (SAR); salinity (EC); soil climate; kaolinitic mineralogy; and permeability that is too rapid, allowing seepage.

Table 18a.--Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The closer the value is to 0.00, the greater the limitation. A value of 0.00 indicates an absolute limitation based on the soil property criteria used to develop the interpretation. Values closer to 1.00 indicate lesser limitations. Limiting features with values of 1.00 have absolutely no limitation and are not shown in the table. Rating classes are determined by the most limiting value. Fine-earth fractions and rock fragments are reported on a weight basis. An explanation of the criteria and of the abbreviations used in describing the limitations is given at the end of the table)

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
100: Anita clay-----	60	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Depth to pan < 20" Clay > 40% Saturation < 1' depth	0.00 0.00 0.00
Galt clay-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Saturation < 1' depth Depth to pan 20 to 40"	0.00 0.00 0.71
104: Bosquejo clay-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40%	0.00
105: Busacca clay loam-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Clay 27 to 40%	0.18
108: Tuscan gravelly loam----	45	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Depth to pan < 20" Saturation < 1' depth Clay > 40% Rock fragment content	0.00 0.00 0.00 0.00

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
108: Igo gravelly loam-----	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Depth to pan < 20" Saturation < 1' depth Rock fragment content Clay 27 to 40%	0.00 0.00 0.00 0.68
Anita clay-----	15	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Depth to pan < 20" Clay > 40% Saturation < 1' depth	0.00 0.00 0.00
109: Bosquejo clay loam-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Clay > 40%	0.00
110: Bosquejo silt loam, overwash, occasionally flooded-----	90	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Clay > 40%	0.00
111yu: Auburn loam-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Depth to bedrock < 20" Slope 12 to 15% Rock fragment content	0.00 0.37 0.88
Sobrante loam-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Fair source Slope 12 to 15% Depth to bedrock 20 to 40" Rock fragment content	0.37 0.38 0.72
114yu: Auburn gravelly loam----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Depth to bedrock < 20" Rock fragment content Slope 12 to 15%	0.00 0.00 0.37

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
114yu: Sobrante gravelly loam--	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Slope 12 to 15% Depth to bedrock 20 to 40"	0.00 0.37 0.78
118: Xerorthents, tailings---	80	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.07 0.14	Fair source Sand fractions 75-85% Rock fragment content	0.01 0.88
118co: Clear Lake clay, frequently flooded----	90	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% SAR 4 to 13	0.00 0.90
119: Xerorthents, tailings---	70	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.07 0.14	Fair source Sand fractions 75-85% Rock fragment content	0.01 0.88
Urban land-----	30	Not rated		Not rated		Not rated	
119yu: Auburn gravelly loam----	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Depth to bedrock < 20" Rock fragment content	0.00 0.00 0.00
Sobrante gravelly loam--	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.78
Rock outcrop-----	20	Not rated		Not rated		Not rated	

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
120: Gridley taxadjunct clay loam-----	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.04	Fair source Depth to pan 20 to 40" Saturation from 1 to 3' Clay 27 to 40%	0.01 0.04 0.32
121: Boga loam-----	45	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Good source	
Loemstone loam-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Good source	
121su: Columbia fine sandy loam, frequently flooded-----	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer a possible source Bottom layer a possible source	0.02 0.06	Good source	
125: Gridley taxadjunct loam	65	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Depth to pan 20 to 40" Saturation from 1 to 3' Clay 27 to 40%	0.03 0.04 0.50
Calcic Haploxerolls sandy loam-----	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer not a source Thickest layer a possible source	0.00 0.03	Fair source SAR 4 to 13 EC 4 to 8 dS/m Saturation from 1 to 3'	0.22 0.50 0.94

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
126: Liveoak sandy loam-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer a possible source Bottom layer a possible source	0.04 0.72	Fair source Saturation from 1 to 3'	0.89
127: Gridley taxadjunct loam	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Depth to pan 20 to 40" Saturation from 1 to 3' Clay 27 to 40%	0.03 0.04 0.50
130: Eastbiggs loam-----	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Saturation from 1 to 3' Depth to pan 20 to 40"	0.00 0.02 0.29
133: Eastbiggs loam-----	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Saturation from 1 to 3' Depth to pan 20 to 40"	0.00 0.02 0.29
Galt clay loam-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Saturation < 1' depth Clay 27 to 40% Depth to pan 20 to 40"	0.00 0.08 0.54
136: Duric Xerarents, cut----	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Depth to pan < 20" Saturation < 1' depth Clay 27 to 40%	0.00 0.00 0.50
Duric Xerarents, fill---	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer not a source Thickest layer a possible source	0.00 0.04	Good source	

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
136: Eastbiggs fine sandy loam, leveled-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Saturation from 1 to 3' Depth to pan 20 to 40"	0.02 0.54
138su: Liveoak sandy clay loam	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.03	Fair source Saturation from 1 to 3'	0.89
139su: Liveoak taxadjunct loam, frequently flooded-----	45	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Good source	
Galt taxadjunct clay loam, frequently flooded-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Depth to pan 20 to 40" Saturation from 1 to 3' Clay 27 to 40%	0.01 0.07 0.98
143su: Marcum clay loam-----	45	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Clay 27 to 40%	0.98
Gridley clay loam-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Depth to bedrock 20 to 40" Clay 27 to 40%	0.88 0.98

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
149yu: Flanly sandy loam-----	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Slope 12 to 15% Depth to bedrock 20 to 40" Rock fragment content	0.37 0.72 0.95
150: Columbia stratified sand to fine sandy loam-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.01	Good source	
150su: Olashes sandy loam-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.34	Good source	
151yu: Flanly sandy loam-----	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Depth to bedrock 20 to 40" Rock fragment content	0.00 0.72 0.95
152: Gianella fine sandy loam, frequently flooded-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer a possible source Bottom layer a possible source	0.01 0.08	Good source	
153: Gianella sandy loam, frequently flooded-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer a possible source Bottom layer a possible source	0.00 0.01	Good source	

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
154: Gianella silt loam, frequently flooded-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.10	Fair source Sand fractions 75-85%	0.92
158: Gianella fine sandy loam, occasionally flooded-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.10	Good source	
160: Gianella loam, occasionally flooded---	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer a possible source Bottom layer a possible source	0.02 0.07	Fair source Sand fractions 75-85%	0.98
161: Gianella fine sandy loam, rarely flooded---	90	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.10	Good source	
162: Gianella loam, rarely flooded-----	90	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer a possible source Bottom layer a possible source	0.02 0.07	Fair source Sand fractions 75-85%	0.98

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
163yu: Holillipah loamy sand---	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer a possible source Bottom layer a possible source	0.07 0.10	Fair source Rock fragment content	0.97
165yu: Holland loam-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15%	0.00
Hoda loam-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Slope > 15% pH from 4.5 to 6.5	0.00 0.00 0.88
Hotaw loam-----	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Depth to bedrock 20 to 40"	0.00 0.72
173yu: Hotaw loam-----	45	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Depth to bedrock 20 to 40"	0.00 0.72
Chawanakee gravelly sandy loam-----	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.02	Poor source Depth to bedrock < 20" Rock fragment content Slope > 15%	0.00 0.00 0.00
Holland loam-----	15	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15%	0.00

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
175: Farwell clay loam, rarely flooded-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Good source	
176: Farwell loam, occasionally flooded---	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Good source	
176yu: Jocal loam-----	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Slope 12 to 15% pH from 4.5 to 6.5 Rock fragment content Clay 27 to 40%	0.37 0.50 0.88 0.98
177: Farwell silt loam, occasionally flooded---	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Clay 27 to 40%	0.92
178: Arbuckle gravelly loam--	87	Fair source Bottom layer a possible source Thickest layer a possible source	0.25 0.27	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Hard to reclaim Rock fragment content	0.00 0.88
179: Moda taxadjunct loam----	65	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Saturation < 1' depth Depth to pan 20 to 40"	0.00 0.00 0.03

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
179: Arbuckle gravelly loam--	20	Fair source		Poor source		Poor source	
		Bottom layer a possible source	0.25	Bottom layer not a source	0.00	Hard to reclaim	0.00
		Thickest layer a possible source	0.27	Thickest layer not a source	0.00	Rock fragment content	0.88
180: Dodgeland silty clay loam, occasionally flooded-----	85	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation < 1' depth	0.00
181: Dodgeland silty clay loam, frequently flooded-----	80	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation < 1' depth	0.00
188yu: Mariposa taxadjunct gravelly loam-----	80	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragment content	0.00
						Depth to bedrock 20 to 40"	0.16
						pH from 4.5 to 6.5	0.98
189: Esquon silt loam, overwash-----	90	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation from 1 to 3'	0.89

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
189yu: Mariposa taxadjunct gravelly loam-----	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40" pH from 4.5 to 6.5	0.00 0.00 0.16 0.98
196yu: Mildred cobbly loam-----	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Clay > 40% Depth to bedrock 20 to 40" Rock fragment content	0.00 0.00 0.16 0.88
200: Parrott silt loam, occasionally flooded---	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Good source	
201: Parrott silt loam, frequently flooded-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Good source	
203: Kusalslough silty clay loam, occasionally flooded-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Clay 27 to 40%	0.18
205: Parrott silt loam, frequently flooded-----	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Good source	

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
205: Vermet silt loam, frequently flooded-----	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Saturation < 1' depth Clay 27 to 40%	0.00 0.92
206: Islandbar sandy loam----	60	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.88	Fair source Thickest layer a possible source Bottom layer a possible source	0.02 0.08	Good source	
Chawanakee gravelly sandy loam-----	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.02	Poor source Depth to bedrock < 20" Rock fragment content	0.00 0.00
207: Islandbar sandy loam----	60	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.88	Fair source Thickest layer a possible source Bottom layer a possible source	0.02 0.08	Poor source Slope > 15%	0.00
Chawanakee gravelly sandy loam-----	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.02	Poor source Slope > 15% Depth to bedrock < 20" Rock fragment content	0.00 0.00 0.00
208: Islandbar sandy loam----	60	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.88	Fair source Thickest layer a possible source Bottom layer a possible source	0.02 0.08	Poor source Slope > 15%	0.00

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
208: Chawanakee gravelly sandy loam-----	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.02	Poor source Slope > 15% Depth to bedrock < 20" Rock fragment content	0.00 0.00 0.00
209: Islandbar sandy loam----	60	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.88	Fair source Thickest layer a possible source Bottom layer a possible source	0.02 0.08	Poor source Slope > 15%	0.00
Chawanakee gravelly sandy loam-----	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.02	Poor source Slope > 15% Depth to bedrock < 20" Rock fragment content	0.00 0.00 0.00
210: Featherfalls sandy loam	50	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Hard to reclaim Rock fragment content	0.00 0.88
Islandbar sandy loam----	35	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.88	Fair source Thickest layer a possible source Bottom layer a possible source	0.02 0.08	Good source	
211: Featherfalls sandy loam	55	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.88

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
211: Islandbar sandy loam----	35	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.88	Fair source Thickest layer a possible source Bottom layer a possible source	0.02 0.08	Poor source Slope > 15%	0.00
212: Featherfalls sandy loam	55	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.88
Islandbar sandy loam----	35	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.88	Fair source Thickest layer a possible source Bottom layer a possible source	0.02 0.08	Poor source Slope > 15%	0.00
213: Featherfalls sandy loam	45	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.88
Islandbar sandy loam----	35	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.88	Fair source Thickest layer a possible source Bottom layer a possible source	0.02 0.08	Poor source Slope > 15%	0.00
214: Crystalhill gravelly coarse sandy loam-----	35	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.02 0.04	Fair source Slope 8 to 12% Rock fragment content	0.84 0.88

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
214: Oregongulch gravelly sandy loam-----	20	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.04 0.04 0.04	Poor source Hard to reclaim Rock fragment content Depth to bedrock 20 to 40" Slope 8 to 12%	0.00 0.00 0.22 0.84
Craigsaddle coarse sandy loam-----	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.03	Good source	
Rock outcrop, trondhjemite-----	10	Not rated		Not rated		Not rated	
215: Crystalhill gravelly coarse sandy loam-----	35	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.02 0.04	Poor source Slope > 15% Rock fragment content	0.00 0.88
Oregongulch gravelly sandy loam-----	20	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.04 0.04 0.04	Poor source Slope > 15% Hard to reclaim Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.00 0.22
Craigsaddle coarse sandy loam-----	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.03	Poor source Slope > 15%	0.00
Rock outcrop, trondhjemite-----	10	Not rated		Not rated		Not rated	

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
216: Crystalhill gravelly coarse sandy loam-----	35	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.02 0.04	Poor source Slope > 15% Rock fragment content	0.00 0.88
Oregongulch gravelly sandy loam-----	20	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.04 0.04	Poor source Slope > 15% Hard to reclaim Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.00 0.22
Craigsaddle coarse sandy loam-----	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.03	Poor source Slope > 15%	0.00
Rock outcrop, trondhjemite-----	10	Not rated		Not rated		Not rated	
217: Crystalhill gravelly coarse sandy loam-----	35	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.02 0.04	Poor source Slope > 15% Rock fragment content	0.00 0.88
Oregongulch gravelly sandy loam-----	20	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.04 0.04	Poor source Slope > 15% Hard to reclaim Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.00 0.22

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
217: Craigsaddle coarse sandy loam-----	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.03	Poor source Slope > 15%	0.00
Rock outcrop, trondhjemite-----	10	Not rated		Not rated		Not rated	
218: Rock outcrop, quartz diorite-----	60	Not rated		Not rated		Not rated	
Lithic Xerorthents gravelly sandy loam---	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.04	Poor source Depth to bedrock < 20" Slope > 15% Rock fragment content	0.00 0.00 0.88
Chawanakee gravelly sandy loam-----	15	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.02	Poor source Depth to bedrock < 20" Slope > 15% Rock fragment content	0.00 0.00 0.00
219: Rock outcrop, quartz diorite-----	60	Not rated		Not rated		Not rated	
Lithic Xerorthents gravelly sandy loam---	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.04	Poor source Slope > 15% Depth to bedrock < 20" Rock fragment content	0.00 0.00 0.88
Chawanakee gravelly sandy loam-----	15	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.02	Poor source Slope > 15% Depth to bedrock < 20" Rock fragment content	0.00 0.00 0.00

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
220: Esquon clay, frequently flooded-----	60	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Saturation from 1 to 3'	0.00 0.14
Clear Lake silty clay loam, overwash-----	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Saturation < 1' depth	0.00 0.00
221yu: Sites loam-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% pH from 4.5 to 6.5	0.00 0.98
222yu: Sites loam-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Slope 12 to 15% pH from 4.5 to 6.5	0.00 0.37 0.98
225yu: Sites gravelly loam, bedrock substratum-----	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Clay > 40% Hard to reclaim pH from 4.5 to 6.5	0.00 0.00 0.68 0.98
226yu: Sites gravelly loam, bedrock substratum-----	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Clay > 40% Slope 12 to 15% Hard to reclaim pH from 4.5 to 6.5	0.00 0.00 0.37 0.68 0.98

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
227yu: Sites gravelly loam, bedrock substratum-----	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Clay > 40% Hard to reclaim pH from 4.5 to 6.5	0.00 0.00 0.00 0.68 0.98
242yu: Surnuf loam-----	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Slope 12 to 15%	0.37
243yu: Surnuf loam-----	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15%	0.00
244yu: Surnuf loam-----	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15%	0.00
245: Surnuf loam-----	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15%	0.00
248yu: Trainer loam-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.03	Good source	

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
250: Llanoseco, occasionally flooded-----	90	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Clay > 40%	0.00
252: Whitecabin silty clay, occasionally flooded---	60	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Clay > 40% Saturation from 1 to 3'	0.00 0.68
Ordferry silty clay, occasionally flooded---	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Clay > 40% Saturation < 1' depth Depth to pan 20 to 40"	0.00 0.00 0.46
252yu: Woodleaf gravelly loam--	80	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Rock fragment content Clay > 40% Depth to bedrock 20 to 40" Slope 8 to 12%	0.00 0.00 0.42 0.96
253yu: Woodleaf gravelly loam--	80	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Slope > 15% Rock fragment content Clay > 40% Depth to bedrock 20 to 40"	0.00 0.00 0.00 0.42
255: Whitecabin silty clay loam, occasionally flooded-----	60	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Clay > 40% SAR 4 to 13 Saturation from 1 to 3'	0.00 0.40 0.68

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
255: Ordferry silty clay, occasionally flooded---	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Saturation < 1' depth Depth to pan 20 to 40"	0.00 0.00 0.46
256: Whitecabin silt loam, occasionally flooded---	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Saturation from 1 to 3'	0.00 0.68
257: Llanoseco, frequently flooded-----	90	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40%	0.00
258: Codora, occasionally flooded-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Clay 27 to 40%	0.02
260: Ordferry silty clay, occasionally flooded---	90	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Saturation < 1' depth Depth to pan 20 to 40"	0.00 0.00 0.46
280: Columbia taxadjunct stratified very fine sandy loam-----	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer a possible source	0.00 0.00	Poor source Saturation < 1' depth	0.00

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
290: Perkins gravelly loam---	90	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.50	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.10	Poor source Rock fragment content Hard to reclaim	0.00 0.00
300: Redsluff gravelly loam--	80	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Thickest layer not a source Bottom layer not a source	0.00 0.00	Poor source Hard to reclaim Rock fragment content No saturated zone within a depth of 3'	0.00 0.00 0.99
301: Wafap gravelly loam----	70	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Hard to reclaim Rock fragment content Clay 27 to 40% Saturation from 1 to 3'	0.00 0.00 0.02 0.06
Hamslough clay-----	15	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.14	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Saturation < 1' depth Rock fragment content Depth to pan 20 to 40"	0.00 0.00 0.00 0.29
302: Redtough loam-----	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Depth to pan < 20" Saturation < 1' depth Rock fragment content	0.00 0.00 0.88
Redswale cobbly loam---	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Depth to pan < 20" Saturation < 1' depth Rock fragment content	0.00 0.00 0.00
303: Munjar gravelly loam---	60	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Clay 27 to 40% Saturation from 1 to 3' Depth to pan 20 to 40"	0.00 0.18 0.24 0.65

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
303: Tuscan taxadjunct gravelly clay loam-----	20	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.00 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Saturation < 1' depth Clay 27 to 40% Rock fragment content Depth to pan 20 to 40"	0.00 0.08 0.12 0.46
Galt clay-----	10	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Saturation < 1' depth Depth to pan 20 to 40"	0.00 0.00 0.71
304: Redtough loam-----	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Depth to pan < 20" Slope > 15% Rock fragment content	0.00 0.00 0.88
305: Redtough gravelly loam--	45	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Depth to pan < 20" Saturation < 1' depth	0.00 0.00
Redswale loam-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Depth to pan < 20" Saturation < 1' depth Rock fragment content	0.00 0.00 0.00
Anita, gravelly duripan	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Depth to pan < 20" Clay > 40% Saturation < 1' depth Rock fragment content	0.00 0.00 0.00 0.00
306: Duric Xerarents, fill---	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer not a source Thickest layer a possible source	0.00 0.04	Poor source Saturation < 1' depth	0.00

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
306: Duric Xerarents, cut----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer a possible source Bottom layer a possible source	0.03 0.04	Poor source Depth to pan < 20" Saturation < 1' depth	0.00 0.00
307: Duric Xerarents clay loam, leveled-----	70	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Depth to pan < 20" Saturation < 1' depth Clay > 40%	0.00 0.00 0.00
310: Kimball loam-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Good source	
317: Thompsonflat loam-----	75	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.50	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Hard to reclaim Rock fragment content	0.00 0.00
318: Thompsonflat fine sandy loam-----	50	Fair source Thickest layer a possible source Bottom layer a possible source	0.07 0.29	Fair source Bottom layer a possible source Thickest layer a possible source	0.04 0.04	Poor source Rock fragment content Hard to reclaim	0.00 0.00
Oroville gravelly fine sandy loam-----	40	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Saturation from 1 to 3' Depth to pan 20 to 40"	0.00 0.01 0.05

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
320: Vistarobles sandy loam--	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.03	Poor source Depth to pan < 20" Saturation < 1' depth	0.00 0.00
Redding loam-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Saturation from 1 to 3' Depth to pan 20 to 40"	0.53 0.90
321: Durixeralfs, fine-loamy, gravelly fine sandy loam-----	50	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.25	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Saturation from 1 to 3' Depth to pan 20 to 40"	0.00 0.24 0.29
Durixeralfs, loamy- skeletal, gravelly fine sandy loam-----	20	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Depth to pan < 20" Saturation < 1' depth Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.00 0.38
Typic Petraquepts silty clay-----	15	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Depth to pan < 20" Clay > 40% Saturation < 1' depth Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.00 0.00 0.48
330: Wilsoncreek loam, occasionally flooded--	60	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Good source	

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
330: Trainer loam, occasionally flooded---	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.04	Good source	
331: Thompsonflat loam-----	85	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.50	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00
335: Galt clay loam-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Saturation < 1' depth Clay 27 to 40% Depth to pan 20 to 40"	0.00 0.08 0.54
336: Galt clay-----	90	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Saturation < 1' depth Depth to pan 20 to 40"	0.00 0.00 0.71
337: Galt clay loam-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Saturation < 1' depth Clay 27 to 40% Depth to pan 20 to 40"	0.00 0.08 0.54
338: Oxyaquic Xerofluvents silt loam-----	90	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Good source	

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
339: Oxyaquic Xerofluvents sandy loam, frequently flooded-----	90	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer not a source Thickest layer a possible source	0.00 0.03	Fair source Sand fractions 75-85%	0.22
340: Rock outcrop, Lovejoy basalt-----	35	Not rated		Not rated		Not rated	
Thermalrocks very gravelly loam-----	25	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Depth to bedrock < 20" Rock fragment content pH from 4.5 to 6.5	0.00 0.00 0.88
Campbellhills gravelly loam-----	20	Fair source Thickest layer a possible source Bottom layer a possible source	0.01 0.14	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Saturation < 1' depth Rock fragment content Hard to reclaim Clay 27 to 40%	0.00 0.00 0.00 0.82
341: Elsey loam-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Saturation from 1 to 3' Depth to bedrock 20 to 40"	0.00 0.06 0.94
Beatsonhollow gravelly loam-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Saturation < 1' depth Depth to bedrock < 20" Rock fragment content pH from 4.5 to 6.5	0.00 0.00 0.00 0.88

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
341: Campbellhills gravelly loam-----	20	Fair source Thickest layer a possible source Bottom layer a possible source	0.01 0.14	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Saturation < 1' depth Rock fragment content Hard to reclaim Clay 27 to 40%	0.00 0.00 0.00 0.82
Rock outcrop, Lovejoy basalt-----	20	Not rated		Not rated		Not rated	
342: Thermalrocks very gravelly loam-----	40	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Depth to bedrock < 20" Rock fragment content Slope > 15% pH from 4.5 to 6.5	0.00 0.00 0.00 0.88
Beatsonhollow taxadjunct fine sandy loam-----	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Saturation < 1' depth Depth to bedrock < 20" Rock fragment content	0.00 0.00 0.00
Rock outcrop, Lovejoy basalt-----	15	Not rated		Not rated		Not rated	
343: Coalcanyon very cobbly loam-----	50	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Hard to reclaim Slope 8 to 12%	0.00 0.00 0.84
Coonhollow gravelly loam-----	35	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Hard to reclaim Slope 8 to 12%	0.00 0.00 0.84

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
344: Coalcanyon very cobbly loam-----	45	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim	0.00 0.00 0.00
Coonhollow gravelly loam-----	30	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim	0.00 0.00 0.00
Rock outcrop, Lovejoy basalt-----	15	Not rated		Not rated		Not rated	
346: Cherotable loam-----	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Hard to reclaim Rock fragment content	0.00 0.00 0.00
Elsey loam-----	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Saturation from 1 to 3' Depth to bedrock 20 to 40"	0.00 0.06 0.94
347: Haplic Palexeralfs loam	90	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Hard to reclaim Rock fragment content	0.00 0.00
353: Cherokeespring gravelly silt loam-----	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Hard to reclaim Slope 12 to 15% Clay 27 to 40%	0.00 0.00 0.37 0.92

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
355: Coalcanyon very cobbly loam-----	55	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim	0.00 0.00 0.00
Talus-----	35	Not rated		Not rated		Not rated	
356: Coalcanyon very cobbly loam-----	45	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim	0.00 0.00 0.00
Rock outcrop, basalt cliffs-----	20	Not rated		Not rated		Not rated	
Talus-----	20	Not rated		Not rated		Not rated	
Coonhollow gravelly loam-----	10	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim	0.00 0.00 0.00
360: Typic Xerofluvents, coarse-loamy-----	45	Fair source Thickest layer a possible source Bottom layer a possible source	0.17 0.62	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.69	Poor source Hard to reclaim Rock fragment content	0.00 0.00
Typic Xerofluvents, sandy-skeletal-----	40	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.62	Fair source Bottom layer a possible source Thickest layer a possible source	0.66 0.69	Poor source Sand fractions > 85% Hard to reclaim Rock fragment content	0.00 0.00 0.00

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
361: Typic Xerofluvents, sandy-skeletal-----	85	Fair source		Fair source		Poor source	
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.66	Sand fractions > 85%	0.00
		Bottom layer a possible source	0.62	Thickest layer a possible source	0.69	Hard to reclaim	0.00
						Rock fragment content	0.00
362: Ultic Haploxeralfs, sandstone, low elevation, very deep---	60	Poor source		Fair source		Fair source	
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Rock fragment content	0.88
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.03		
Ultic Haploxeralfs, sandstone, low elevation, deep-----	25	Poor source		Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Sand fractions 75-85%	0.98
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00		
363: Ultic Haploxeralfs, sandstone, low elevation, very deep---	60	Poor source		Fair source		Fair source	
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Rock fragment content	0.88
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.03		
Ultic Haploxeralfs, sandstone, low elevation, deep-----	30	Poor source		Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope 12 to 15%	0.37
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Sand fractions 75-85%	0.98

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
364: Ultic Haploxeralfs, sandstone, low elevation, deep-----	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Sand fractions 75-85%	0.00 0.98
Ultic Haploxeralfs, sandstone, low elevation, very deep---	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.03	Poor source Slope > 15% Rock fragment content	0.00 0.88
365: Palexerults gravelly loam-----	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Clay > 40%	0.00 0.00
366: Palexerults gravelly loam-----	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Clay > 40%	0.00 0.00
370: Palexerults gravelly loam-----	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40%	0.00
375: Wicksorner loam-----	80	Fair source Thickest layer a possible source Bottom layer a possible source	0.25 0.50	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Hard to reclaim Rock fragment content Clay 27 to 40%	0.00 0.00 0.32

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
376: Flagcanyon gravelly loam-----	50	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to pan 20 to 40" Saturation from 1 to 3'	0.00 0.54 0.59
Wicks corner loam-----	35	Fair source Thickest layer a possible source Bottom layer a possible source	0.25 0.50	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Hard to reclaim Rock fragment content Clay 27 to 40%	0.00 0.00 0.32
377: Flagcanyon taxadjunct fine sandy loam-----	55	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.14	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.14	Fair source Saturation from 1 to 3' Depth to pan 20 to 40" Rock fragment content	0.07 0.65 0.88
Durixeralfs, clayey- skeletal, loam-----	20	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.14	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.14	Poor source Depth to pan < 20" Clay > 40% Saturation < 1' depth Rock fragment content	0.00 0.00 0.00 0.00
Duraquerts gravelly clay-----	15	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.25	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.03	Poor source Clay > 40% Saturation < 1' depth Depth to pan 20 to 40" Rock fragment content	0.00 0.00 0.05 0.88
400: Subaco taxadjunct clay--	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Saturation from 1 to 3' SAR 4 to 13 Depth to pan 20 to 40"	0.00 0.27 0.78 0.90

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
415: Ignord fine sandy loam--	90	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.00 0.04	Good source	
416: Calcic Haploxerolls sandy loam-----	90	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer not a source Thickest layer a possible source	0.00 0.03	Fair source SAR 4 to 13 EC 4 to 8 dS/m Saturation from 1 to 3'	0.22 0.50 0.94
418: Almendra loam-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Good source	
419: Conejo fine sandy loam, overwash-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Clay 27 to 40%	0.92
420: Conejo clay loam-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.03	Fair source Clay 27 to 40%	0.98
425: Vina fine sandy loam----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer a possible source Bottom layer a possible source	0.02 0.66	Good source	

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
426: Vina loam-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Good source	
439: Oxyaquic Xerofluvents clay-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Saturation from 1 to 3'	0.00 0.53
440: Oxyaquic Xerofluvents silt loam, frequently flooded-----	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Saturation from 1 to 3'	0.89
441: Oxyaquic Xerofluvents very fine sandy loam--	90	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Saturation from 1 to 3'	0.89
442: Durixerolls clay loam--	55	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Saturation from 1 to 3' Depth to pan 20 to 40" Clay 27 to 40%	0.04 0.80 0.98
Haploxerolls clay loam--	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Saturation from 1 to 3'	0.89
443: Durixerolls loam-----	60	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Saturation from 1 to 3' Depth to pan 20 to 40"	0.04 0.21

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
443: Haploxerolls loam-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.04	Fair source Saturation from 1 to 3'	0.89
445: Chico loam-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Good source	
447: Charger fine sandy loam	80	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.25	Fair source Thickest layer a possible source Bottom layer a possible source	0.03 0.10	Poor source Hard to reclaim	0.00
448: Haploxerolls clay loam--	75	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Clay 27 to 40%	0.82
449: Haploxerolls loam-----	75	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.02	Good source	
500: Lofgren clay-----	45	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Saturation from 1 to 3'	0.00 0.24
Blavo clay-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Saturation from 1 to 3' Depth to pan 20 to 40"	0.00 0.24 0.94

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
501: Lofgren clay, occasionally flooded---	45	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Saturation from 1 to 3'	0.00 0.24
Blavo clay, occasionally flooded---	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Saturation from 1 to 3' Depth to pan 20 to 40"	0.00 0.24 0.94
502: Blavo silt loam, overwash, occasionally flooded-----	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Saturation from 1 to 3' Depth to pan 20 to 40"	0.00 0.24 0.94
519: Edjobe silty clay-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Saturation from 1 to 3'	0.00 0.89
520: Esquon clay-----	60	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Saturation from 1 to 3'	0.00 0.89
Neerdobe clay-----	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Saturation from 1 to 3'	0.00 0.24
521: Neerdobe silt loam, overwash-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.08	Poor source Clay > 40% Saturation from 1 to 3'	0.00 0.89

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
522: Clear Lake silty clay loam, overwash-----	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Clay > 40% Saturation < 1' depth	0.00 0.00
523: Esquon silty clay loam, overwash-----	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Clay > 40% Saturation < 1' depth	0.00 0.00
525: Govstanford loam-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Fair source Saturation from 1 to 3'	0.62
526: Govstanford loam, occasionally flooded--	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Fair source Saturation from 1 to 3'	0.62
528: Neerdobe clay loam-----	90	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Fair source Saturation from 1 to 3' Depth to pan 20 to 40" Clay 27 to 40%	0.01 0.14 0.50
550: Dunstone loam, dry-----	60	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Depth to bedrock < 20"	0.00
Loafercreek silt loam, dry-----	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Fair source Depth to bedrock 20 to 40"	0.48

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
551: Dunstone loam, dry-----	35	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Depth to bedrock < 20"	0.00 0.00
Lomarica loam-----	15	Fair source Thickest layer a possible source Bottom layer a possible source	0.06 0.88	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Clay 27 to 40% Depth to bedrock 20 to 40"	0.00 0.00 0.02 0.62
Argonaut taxadjunct loam	15	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Clay > 40% Depth to bedrock 20 to 40" Rock fragment content	0.00 0.00 0.52 0.88
552: Dunstone gravelly loam--	45	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Depth to bedrock < 20" Rock fragment content	0.00 0.00
Loafercreek gravelly loam-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock 20 to 40"	0.00 0.58
553: Dunstone gravelly loam--	45	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Depth to bedrock < 20" Rock fragment content	0.00 0.00 0.00
Loafercreek gravelly loam-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.58

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
554: Dunstone gravelly loam--	45	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Depth to bedrock < 20" Rock fragment content	0.00 0.00 0.00
Loafercreek gravelly loam-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.58
555: Dunstone gravelly loam--	45	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Depth to bedrock < 20" Rock fragment content	0.00 0.00 0.00
Loafercreek gravelly loam-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.58
556: Mounthope loam-----	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Hard to reclaim	0.00 0.32
Hartsmill gravelly loam	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Hard to reclaim Clay 27 to 40% Rock fragment content	0.00 0.82 0.88
557: Mounthope loam-----	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim	0.00 0.00 0.32

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
557: Hartsmill gravelly loam	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Clay 27 to 40% Rock fragment content	0.00 0.00 0.82 0.88
558: Hartsmill gravelly loam	55	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Clay 27 to 40% Rock fragment content	0.00 0.00 0.82 0.88
Mounthope loam-----	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim	0.00 0.00 0.32
559: Hartsmill gravelly loam	55	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Clay 27 to 40% Rock fragment content	0.00 0.00 0.82 0.88
Mounthope loam-----	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim	0.00 0.00 0.32
560: Hartsmill gravelly loam	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Clay 27 to 40% Rock fragment content	0.00 0.00 0.82 0.88
Mounthope loam-----	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim	0.00 0.00 0.32

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
561: Bigridge loam-----	50	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Hard to reclaim Rock fragment content	0.00 0.00
Minniecreek loam-----	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Depth to bedrock 20 to 40"	0.62
562: Bigridge loam-----	50	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00
Minniecreek loam-----	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Depth to bedrock 20 to 40"	0.00 0.62
563: Bigridge loam-----	50	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00
Minniecreek loam-----	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Depth to bedrock 20 to 40"	0.00 0.62
564: Bigridge loam-----	50	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00
Minniecreek loam-----	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Depth to bedrock 20 to 40"	0.00 0.62

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
565: Dunstone loam, dry-----	35	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Depth to bedrock < 20"	0.00
Argonaut taxadjunct loam	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Depth to bedrock 20 to 40" Rock fragment content	0.00 0.52 0.88
Sunnyslope loam-----	20	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.62	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock < 20"	0.00 0.00
566: Dunstone loam, dry-----	45	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Depth to bedrock < 20"	0.00
Loafercreek silt loam, dry-----	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Depth to bedrock 20 to 40"	0.48
Katskillhill loam-----	15	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40%	0.00
567: Dunstone loam, dry-----	40	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Depth to bedrock < 20"	0.00

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
567: Loafercreek silt loam, dry-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Depth to bedrock 20 to 40"	0.48
Argonaut taxadjunct loam	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Depth to bedrock 20 to 40" Rock fragment content	0.00 0.52 0.88
577: Parkshill coarse sandy loam-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Good source	
Flanly loam-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Depth to bedrock 20 to 40"	0.16
Hurleton gravelly sandy loam-----	20	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.62	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock 20 to 40" Slope 8 to 12%	0.00 0.28 0.96
578: Flanly loam-----	45	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Depth to bedrock 20 to 40"	0.16
Swedesflat cobbly fine sandy loam-----	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.04	Poor source Depth to bedrock < 20" Rock fragment content Slope 8 to 12%	0.00 0.00 0.84

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
580: Surnuf taxadjunct loam--	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40%	0.00
Griffgulch very gravelly silt loam----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Clay > 40% Hard to reclaim	0.00 0.00 0.00
Rock outcrop, metavolcanic-----	20	Not rated		Not rated		Not rated	
581: Surnuf taxadjunct loam--	65	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Clay > 40%	0.00 0.00
Griffgulch very gravelly silt loam----	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Clay > 40% Hard to reclaim	0.00 0.00 0.00 0.00
582: Surnuf taxadjunct loam--	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Clay > 40%	0.00 0.00
Griffgulch very gravelly silt loam----	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Clay > 40% Hard to reclaim	0.00 0.00 0.00 0.00

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
583: Surnuf taxadjunct loam--	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Clay > 40%	0.00 0.00
Griffgulch very gravelly silt loam----	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Clay > 40% Hard to reclaim	0.00 0.00 0.00 0.00
584: Flanly loam-----	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Depth to bedrock 20 to 40"	0.00 0.16
Swedesflat cobbly fine sandy loam-----	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.04	Poor source Slope > 15% Depth to bedrock < 20" Rock fragment content	0.00 0.00 0.00
Rackerby very gravelly sandy loam-----	25	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.03	Poor source Slope > 15% Depth to bedrock < 20" Rock fragment content	0.00 0.00 0.00
585: Flanly loam-----	45	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Depth to bedrock 20 to 40"	0.16
Sommeyleft loam-----	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Good source	

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
586: Sommeyflat loam-----	45	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15%	0.00
Mounthope loam-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim	0.00 0.00 0.32
587: Sommeyflat loam-----	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15%	0.00
Mounthope loam-----	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim	0.00 0.00 0.32
Hurleton gravelly sandy loam-----	25	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.62	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.28
588: Ultic Haploxeralfs, thermic, high terrace--	95	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.29	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Saturation from 1 to 3'	0.00 0.24
589: Ultic Haploxeralfs, thermic, high terrace--	95	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.29	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Saturation from 1 to 3'	0.00 0.00 0.24

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
590: Vistarobles sandy loam--	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.03	Poor source Depth to pan < 20" Saturation < 1' depth	0.00 0.00
Redding loam-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Saturation from 1 to 3' Depth to pan 20 to 40"	0.53 0.90
Argonaut taxadjunct loam	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Depth to bedrock 20 to 40" Rock fragment content	0.00 0.52 0.88
Haploxererts gravelly silty clay-----	15	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Saturation < 1' depth Rock fragment content	0.00 0.00 0.00
603: Oroville gravelly fine sandy loam-----	30	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Saturation from 1 to 3' Depth to pan 20 to 40"	0.00 0.01 0.05
Thermalito sandy loam---	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Saturation from 1 to 3' Depth to pan 20 to 40"	0.00 0.02 0.65
Fernandez sandy loam----	15	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Rock fragment content	0.88

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
603: Thompsonflat fine sandy loam-----	15	Fair source Thickest layer a possible source Bottom layer a possible source	0.07 0.29	Fair source Bottom layer a possible source Thickest layer a possible source	0.04 0.04	Poor source Rock fragment content Hard to reclaim	0.00 0.00
605: Duric Xerarents fine sandy loam, leveled----	75	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Depth to pan < 20" Saturation < 1' depth Rock fragment content	0.00 0.00 0.00
Oroville gravelly fine sandy loam-----	20	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Saturation from 1 to 3' Depth to pan 20 to 40"	0.00 0.01 0.05
606: Redtough loam-----	45	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Depth to pan < 20" Saturation < 1' depth Rock fragment content	0.00 0.00 0.88
Fallager loam-----	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Depth to pan < 20" Clay > 40% Saturation < 1' depth Rock fragment content	0.00 0.00 0.00 0.12
Anita, gravelly duripan	15	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Depth to pan < 20" Clay > 40% Saturation < 1' depth Rock fragment content	0.00 0.00 0.00 0.00

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
609: Anita, gravelly duripan	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Depth to pan < 20" Clay > 40% Saturation < 1' depth Rock fragment content	0.00 0.00 0.00 0.00
Tuscan taxadjunct gravelly clay loam-----	40	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Saturation < 1' depth Clay 27 to 40% Rock fragment content Depth to pan 20 to 40"	0.00 0.08 0.12 0.46
614: Doemill gravelly loam---	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Saturation < 1' depth Depth to bedrock < 20" Rock fragment content	0.00 0.00 0.00
Jokerst very cobbly loam	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Saturation < 1' depth Depth to bedrock < 20" Rock fragment content	0.00 0.00 0.12
615: Doemill gravelly loam---	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Saturation < 1' depth Depth to bedrock < 20" Rock fragment content	0.00 0.00 0.00
Jokerst very cobbly loam	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Saturation < 1' depth Depth to bedrock < 20" Rock fragment content	0.00 0.00 0.12
616: Jokerst very cobbly loam	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Saturation < 1' depth Depth to bedrock < 20" Rock fragment content Slope 8 to 12%	0.00 0.00 0.12 0.84

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
616: Doemill gravelly loam---	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Depth to bedrock < 20" Rock fragment content Saturation from 1 to 3' Slope 8 to 12%	0.00 0.00 0.00 0.84
Typic Haploxeralfs gravelly loam-----	15	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Hard to reclaim Rock fragment content Slope 12 to 15% Clay 27 to 40%	0.00 0.00 0.16 0.92
617: Doemill gravelly loam---	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Depth to bedrock < 20" Rock fragment content Saturation from 1 to 3'	0.00 0.00 0.00 0.01
Jokerst very cobbly loam	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Saturation < 1' depth Depth to bedrock < 20" Rock fragment content	0.00 0.00 0.00 0.12
Typic Haploxeralfs gravelly loam-----	20	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content Clay 27 to 40%	0.00 0.00 0.00 0.92
619: Carhart taxadjunct clay	90	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Saturation < 1' depth Depth to bedrock < 20" Rock fragment content	0.00 0.00 0.00 0.88

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
620:							
Doemill gravelly loam---	40	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Saturation < 1' depth	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
						Rock fragment content	0.00
Jokerst very cobbly loam	25	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Saturation < 1' depth	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
						Rock fragment content	0.12
Ultic Haploxeralfs, thermic, gravelly loam	20	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragment content	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock 20 to 40"	0.58
						Saturation from 1 to 3'	0.86
						Clay 27 to 40%	0.98
621:							
Doemill gravelly loam---	30	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Depth to bedrock < 20"	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragment content	0.00
						Saturation from 1 to 3'	0.00
						Slope 8 to 12%	0.84
Jokerst very cobbly loam	30	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Saturation < 1' depth	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
						Rock fragment content	0.12
						Slope 8 to 12%	0.84
Ultic Haploxeralfs, thermic, gravelly loam	20	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragment content	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock 20 to 40"	0.58
						Slope 8 to 12%	0.63
						Saturation from 1 to 3'	0.89
						Clay 27 to 40%	0.98

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
622: Xerorthents, shallow----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Depth to bedrock < 20" Rock fragment content Clay 27 to 40%	0.00 0.00 0.12 0.68
Typic Haploxeralfs gravelly loam-----	30	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content Clay 27 to 40%	0.00 0.00 0.00 0.92
Rock outcrop, mudflow- breccia cliffs-----	15	Not rated		Not rated		Not rated	
623: Xerorthents, shallow----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Depth to bedrock < 20" Rock fragment content Clay 27 to 40%	0.00 0.00 0.12 0.68
Typic Haploxeralfs gravelly loam-----	25	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content Clay 27 to 40%	0.00 0.00 0.00 0.92
Rock outcrop, mudflow- breccia cliffs-----	20	Not rated		Not rated		Not rated	
624: Ultic Haploxeralfs, mesic, gravelly loam---	60	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Hard to reclaim Rock fragment content Clay 27 to 40%	0.00 0.00 0.98

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
624: Rockstripe very gravelly loam-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Depth to bedrock < 20" Rock fragment content	0.00 0.00 0.00
625: Ultic Haploxeralfs, mesic, gravelly loam---	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content Clay 27 to 40%	0.00 0.00 0.00 0.98
Rockstripe very gravelly loam-----	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Slope > 15% Depth to bedrock < 20" Rock fragment content	0.00 0.00 0.00
626: Ultic Haploxeralfs gravelly loam-----	40	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Slope > 15% Rock fragment content Clay 27 to 40%	0.00 0.12 0.50
Rockstripe very gravelly loam-----	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Slope > 15% Depth to bedrock < 20" Rock fragment content	0.00 0.00 0.00
Rock outcrop, mudflow-breccia cliffs-----	15	Not rated		Not rated		Not rated	
627: Ultic Haploxeralfs gravelly loam-----	40	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Slope > 15% Rock fragment content Clay 27 to 40%	0.00 0.12 0.50

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
627: Rockstripe very gravelly loam-----	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Depth to bedrock < 20" Rock fragment content	0.00 0.00 0.00
Rock outcrop, mudflow- breccia cliffs-----	15	Not rated		Not rated		Not rated	
628: Rockstripe very gravelly loam-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Depth to bedrock < 20" Rock fragment content	0.00 0.00 0.00
Ultic Haploxeralfs gravelly loam-----	35	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Clay 27 to 40%	0.00 0.12 0.50
Rock outcrop, mudflow- breccia cliffs-----	20	Not rated		Not rated		Not rated	
629: Slideland gravelly loam	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Hard to reclaim Rock fragment content Clay 27 to 40% Slope 8 to 12%	0.00 0.12 0.32 0.63
630: Slideland gravelly loam	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content Clay 27 to 40%	0.00 0.00 0.12 0.32

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
631: Slideland gravelly loam	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content Clay 27 to 40%	0.00 0.00 0.12 0.32
632: Ultic Haploxeralfs, conglomerate, very deep	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Hard to reclaim Rock fragment content Slope 12 to 15% Clay 27 to 40%	0.00 0.00 0.16 0.32
Ultic Haploxeralfs, conglomerate, moderately deep-----	40	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock 20 to 40"	0.00 0.28
633: Ultic Haploxeralfs, conglomerate, very deep	60	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content Clay 27 to 40%	0.00 0.00 0.00 0.32
Ultic Haploxeralfs, conglomerate, moderately deep-----	30	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.28

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
634: Ultic Haploxeralfs, conglomerate, very deep	60	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content Clay 27 to 40%	0.00 0.00 0.00 0.32
Ultic Haploxeralfs, conglomerate, moderately deep-----	30	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.28
635: Ultic Haploxeralfs, conglomerate, very deep	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content Clay 27 to 40%	0.00 0.00 0.00 0.32
Ultic Haploxeralfs, conglomerate, moderately deep-----	40	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.28
636: Ultic Haploxeralfs, conglomerate, moderately deep-----	50	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.28
Ultic Haploxeralfs, conglomerate, very deep	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content Clay 27 to 40%	0.00 0.00 0.00 0.32

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
637: Ultic Haploxeralfs, sandstone-----	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Hard to reclaim Rock fragment content	0.00 0.00
638: Ultic Haploxeralfs, sandstone-----	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00
639: Ultic Haploxeralfs, sandstone-----	75	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00
640: Ultic Haploxeralfs, sandstone-----	75	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00
641: Ultic Haploxeralfs, sandstone-----	75	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00
642: Chinacamp gravelly loam	70	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Rock fragment content Hard to reclaim Clay 27 to 40%	0.00 0.50 0.68

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
643: Chinacamp gravelly loam	70	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim Clay 27 to 40%	0.00 0.00 0.50 0.68
644: Chinacamp gravelly loam	70	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim Clay 27 to 40%	0.00 0.00 0.50 0.68
645: Chinacamp gravelly loam	70	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim Clay 27 to 40%	0.00 0.00 0.50 0.68
646: Coalcanyon taxadjunct very gravelly loam-----	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Hard to reclaim Clay 27 to 40%	0.00 0.00 0.82
647: Coalcanyon taxadjunct very gravelly loam-----	75	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim Clay 27 to 40%	0.00 0.00 0.00 0.82
648: Coalcanyon taxadjunct very gravelly loam-----	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim Clay 27 to 40%	0.00 0.00 0.00 0.82

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
649: Coalcanyon taxadjunct very gravelly loam-----	75	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim Clay 27 to 40%	0.00 0.00 0.00 0.82
650: Schott very gravelly loam-----	65	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Hard to reclaim Clay 27 to 40%	0.00 0.00 0.92
651: Schott very gravelly loam-----	65	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim Clay 27 to 40%	0.00 0.00 0.00 0.92
652: Schott very gravelly loam-----	65	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim Clay 27 to 40%	0.00 0.00 0.00 0.92
Rock outcrop, mudflow breccia-----	20	Not rated		Not rated		Not rated	
654: Coridge bouldery loam---	70	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Rock fragment content Depth to bedrock 20 to 40" Saturation from 1 to 3' Clay 27 to 40%	0.12 0.22 0.22 0.50
Rock outcrop, Cohasset basalt-----	20	Not rated		Not rated		Not rated	

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
655: Coridge bouldery loam---	70	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Rock fragment content Depth to bedrock 20 to 40" Saturation from 1 to 3' Clay 27 to 40% Slope 8 to 12%	0.12 0.22 0.50 0.50 0.84
Rock outcrop, Cohasset basalt-----	20	Not rated		Not rated		Not rated	
656: Rock outcrop, basalt cliffs-----	40	Not rated		Not rated		Not rated	
Coalcanyon taxadjunct very gravelly loam-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim Clay 27 to 40%	0.00 0.00 0.00 0.82
657: Bonneyridge sandy loam--	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.14 0.14	Good source	
Chawanakee gravelly sandy loam-----	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.02	Poor source Depth to bedrock < 20" Rock fragment content	0.00 0.00
Rock outcrop, quartz diorite-----	20	Not rated		Not rated		Not rated	

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
658: Bonneyridge sandy loam--	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.14 0.14	Poor source Slope > 15%	0.00
Chawanakee gravelly sandy loam-----	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.02	Poor source Slope > 15% Depth to bedrock < 20" Rock fragment content	0.00 0.00 0.00
Rock outcrop, quartz diorite-----	25	Not rated		Not rated		Not rated	
659: Bonneyridge sandy loam--	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.14 0.14	Poor source Slope > 15%	0.00
Chawanakee gravelly sandy loam-----	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.02	Poor source Slope > 15% Depth to bedrock < 20" Rock fragment content	0.00 0.00 0.00
Rock outcrop, quartz diorite-----	25	Not rated		Not rated		Not rated	
660: Bonneyridge sandy loam--	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.14 0.14	Poor source Slope > 15%	0.00

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
660: Chawanakee gravelly sandy loam-----	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.02	Poor source Slope > 15% Depth to bedrock < 20" Rock fragment content	0.00 0.00 0.00
Rock outcrop, quartz diorite-----	30	Not rated		Not rated		Not rated	
661: Millerridge gravelly sandy clay loam-----	45	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Clay 27 to 40% Depth to bedrock 20 to 40" Rock fragment content	0.32 0.34 0.50
Boxrobber cobbly sandy clay loam-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Depth to bedrock < 20" Rock fragment content Clay 27 to 40%	0.00 0.00 0.50
662: Millerridge gravelly sandy clay loam-----	45	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Clay 27 to 40% Depth to bedrock 20 to 40" Rock fragment content	0.00 0.32 0.34 0.50
Boxrobber cobbly sandy clay loam-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Depth to bedrock < 20" Rock fragment content Clay 27 to 40%	0.00 0.00 0.00 0.50

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
663: Millerridge gravelly sandy clay loam-----	45	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Slope > 15% Clay 27 to 40% Depth to bedrock 20 to 40" Rock fragment content	0.00 0.32 0.34 0.50
Boxrobber cobbly sandy clay loam-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Slope > 15% Depth to bedrock < 20" Rock fragment content Clay 27 to 40%	0.00 0.00 0.00 0.50
664: Millerridge gravelly sandy clay loam-----	45	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Slope > 15% Clay 27 to 40% Depth to bedrock 20 to 40" Rock fragment content	0.00 0.32 0.34 0.50
Boxrobber cobbly sandy clay loam-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Slope > 15% Depth to bedrock < 20" Rock fragment content Clay 27 to 40%	0.00 0.00 0.00 0.50
665: Surnuf gravelly loam----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Clay > 40% Rock fragment content Hard to reclaim	0.00 0.00 0.92
Bigridge loam-----	40	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Hard to reclaim Rock fragment content	0.00 0.00

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
666: Surnuf gravelly loam----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Clay > 40% Rock fragment content Hard to reclaim	0.00 0.00 0.00 0.92
Bigridge loam-----	40	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00
667: Surnuf gravelly loam----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Clay > 40% Rock fragment content Hard to reclaim	0.00 0.00 0.00 0.92
Bigridge loam-----	40	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00
668: Surnuf gravelly loam----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Clay > 40% Rock fragment content Hard to reclaim	0.00 0.00 0.00 0.92
Bigridge loam-----	40	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00
669: Oroshore gravelly loam--	35	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.14	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock 20 to 40" Clay 27 to 40%	0.00 0.72 0.82

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
669: Mounthope loam-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Hard to reclaim	0.00 0.32
Dunstone gravelly loam--	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Depth to bedrock < 20" Rock fragment content	0.00 0.00
670: Oroshore gravelly loam--	35	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.14	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40" Clay 27 to 40%	0.00 0.00 0.72 0.82
Mounthope loam-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim	0.00 0.00 0.32
Dunstone gravelly loam--	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Depth to bedrock < 20" Rock fragment content	0.00 0.00 0.00
671: Oroshore gravelly loam--	35	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.14	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40" Clay 27 to 40%	0.00 0.00 0.72 0.82
Mounthope loam-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim	0.00 0.00 0.32
Dunstone gravelly loam--	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Depth to bedrock < 20" Rock fragment content	0.00 0.00 0.00

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
672: Oroshore gravelly loam--	30	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.14	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40" Clay 27 to 40%	0.00 0.00 0.72 0.82
Mounthope loam-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim	0.00 0.00 0.32
Dunstone gravelly loam--	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Depth to bedrock < 20" Rock fragment content	0.00 0.00 0.00
674: Chawanakee gravelly sandy loam-----	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.02	Poor source Slope > 15% Depth to bedrock < 20" Rock fragment content	0.00 0.00 0.00
Bonneyridge sandy loam--	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.14 0.14	Poor source Slope > 15%	0.00
Rock outcrop, quartz diorite-----	30	Not rated		Not rated		Not rated	
675: Clearhayes sandy clay loam-----	70	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Hard to reclaim Saturation from 1 to 3' Sand fractions 75-85%	0.00 0.00 0.18 0.25

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
675: Hamslough clay-----	15	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.14	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Saturation < 1' depth Rock fragment content Depth to pan 20 to 40"	0.00 0.00 0.00 0.29
676: Carhart clay-----	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Saturation from 1 to 3' Depth to bedrock 20 to 40"	0.00 0.06 0.52
Anita taxadjunct clay---	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Saturation < 1' depth Depth to bedrock < 20"	0.00 0.00 0.00
677: Tuscan gravelly loam----	40	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Depth to pan < 20" Saturation < 1' depth Clay > 40% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.00 0.00 0.78
Fallager loam-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Depth to pan < 20" Clay > 40% Saturation < 1' depth Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.00 0.12 0.58
Anita, gravelly duripan	15	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Depth to pan < 20" Clay > 40% Saturation < 1' depth Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.00 0.00 0.98

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
679:							
Lucksev loam-----	40	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Saturation < 1' depth	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
						Clay > 40%	0.00
Butteside gravelly loam	35	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock 20 to 40"	0.38
						Rock fragment content	0.88
Carhart clay-----	15	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation from 1 to 3'	0.06
						Depth to bedrock 20 to 40"	0.52
680:							
Lucksev loam-----	45	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
						Clay > 40%	0.00
Butteside gravelly loam	40	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%	0.00
						Depth to bedrock 20 to 40"	0.38
						Rock fragment content	0.88
683:							
Typic Haploxeralfs, magnesian, low elevation	50	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragment content	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay 27 to 40%	0.50
						Depth to bedrock 20 to 40"	0.52
Earlal very gravelly loam-----	20	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragment content	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
						Clay 27 to 40%	0.18
						Slope 8 to 12%	0.84

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
683: Rock outcrop, serpentinite-----	15	Not rated		Not rated		Not rated	
684: Typic Haploxeralfs, magnesian, low elevation	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Clay 27 to 40% Depth to bedrock 20 to 40"	0.00 0.00 0.50 0.52
Earlial very gravelly loam-----	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20" Clay 27 to 40%	0.00 0.00 0.00 0.18
Rock outcrop, serpentinite-----	15	Not rated		Not rated		Not rated	
685: Bosquejo taxadjunct, gravelly substratum----	70	Fair source Bottom layer not a source Thickest layer a possible source	0.00 0.09	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.03	Poor source Clay > 40% Hard to reclaim Saturation from 1 to 3'	0.00 0.00 0.89
686: Redsluff taxadjunct clay loam-----	70	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Hard to reclaim Clay 27 to 40%	0.00 0.32
687: Xerorthents, shallow----	45	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Depth to bedrock < 20" Rock fragment content Clay 27 to 40%	0.00 0.12 0.68

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
687: Typic Haploxeralfs gravelly loam-----	40	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Hard to reclaim Rock fragment content Slope 12 to 15% Clay 27 to 40%	0.00 0.00 0.37 0.92
700: Retsongulch very gravelly sandy loam----	40	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00 0.00	Poor source Thickest layer not a source Bottom layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40" pH from 4.5 to 6.5	0.00 0.00 0.52 0.76
Flumewall gravelly sandy loam-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Depth to bedrock < 20" Rock fragment content	0.00 0.00 0.00
701: Powellton gravelly loam	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15%	0.00
Obstruction gravelly sandy loam-----	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim	0.00 0.88 0.92
702: Cerpone gravelly loam---	50	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.38	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Hard to reclaim Slope 8 to 12% Clay 27 to 40%	0.00 0.00 0.63 0.68

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
702: Typic Haploxeralfs, magnesian, very gravelly loam-----	20	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Rock fragment content Hard to reclaim Clay > 40% Slope 8 to 12%	0.00 0.00 0.00 0.84
Earlal very gravelly loam-----	15	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Rock fragment content Depth to bedrock < 20" Clay 27 to 40% Slope 8 to 12%	0.00 0.00 0.18 0.84
703: Cerpone gravelly loam---	30	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.38 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim Clay 27 to 40%	0.00 0.00 0.00 0.68
Typic Haploxeralfs, magnesian, very gravelly loam-----	30	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim Clay > 40%	0.00 0.00 0.00 0.00
Earlal very gravelly loam-----	15	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20" Clay 27 to 40%	0.00 0.00 0.00 0.18
Rock outcrop, serpentinite-----	15	Not rated		Not rated		Not rated	

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
704: Typic Haploxeralfs, magnesian, very gravelly loam-----	40	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim Clay > 40%	0.00 0.00 0.00 0.00
Earlal very gravelly loam-----	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20" Clay 27 to 40%	0.00 0.00 0.00 0.18
Cerpone gravelly loam---	15	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.38	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim Clay 27 to 40%	0.00 0.00 0.00 0.68
Rock outcrop, serpentinite-----	15	Not rated		Not rated		Not rated	
705: Typic Haploxeralfs, magnesian, very gravelly loam-----	35	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim Clay > 40%	0.00 0.00 0.00 0.00
Earlal very gravelly loam-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20" Clay 27 to 40%	0.00 0.00 0.00 0.18

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
705: Cerpone gravelly loam---	15	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.38	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim Clay 27 to 40%	0.00 0.00 0.00 0.68
Rock outcrop, serpentinite-----	15	Not rated		Not rated		Not rated	
711: Dixmine very gravelly loam-----	45	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Hard to reclaim Clay 27 to 40%	0.00 0.00 0.50
Toadtown loam-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Clay 27 to 40% pH from 4.5 to 6.5	0.98 0.98
712: Dixmine very gravelly loam-----	50	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim Clay 27 to 40%	0.00 0.00 0.00 0.50
Toadtown loam-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Clay 27 to 40% pH from 4.5 to 6.5	0.00 0.98 0.98
713: Dixmine very gravelly loam-----	50	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim Clay 27 to 40%	0.00 0.00 0.00 0.50

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
713: Toadtown loam-----	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Clay 27 to 40% pH from 4.5 to 6.5	0.00 0.98 0.98
714: Dixmine very gravelly loam-----	50	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim Clay 27 to 40%	0.00 0.00 0.00 0.50
Toadtown loam-----	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Clay 27 to 40% pH from 4.5 to 6.5	0.00 0.98 0.98
715: Logtrain gravelly loam--	40	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim pH from 4.5 to 6.5	0.00 0.00 0.00 0.88
Bottlehill very gravelly loam-----	30	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.25	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40" pH from 4.5 to 6.5 Clay 27 to 40%	0.00 0.00 0.62 0.82 0.98
Walkermine very gravelly loam-----	20	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
716: Griffgulch very gravelly silt loam-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Clay > 40% Hard to reclaim	0.00 0.00 0.00
Surnuf gravelly loam----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Rock fragment content Hard to reclaim	0.00 0.00 0.92
717: Griffgulch very gravelly silt loam-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Clay > 40% Hard to reclaim	0.00 0.00 0.00 0.00
Surnuf gravelly loam----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Clay > 40% Rock fragment content Hard to reclaim	0.00 0.00 0.00 0.92
718: Griffgulch very gravelly silt loam-----	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Clay > 40% Hard to reclaim	0.00 0.00 0.00 0.00
Surnuf gravelly loam----	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Clay > 40% Rock fragment content Hard to reclaim	0.00 0.00 0.00 0.92

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
718: Spine taxadjunct very cobble loam-----	15	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
719: Griffgulch very gravelly silt loam----	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Clay > 40% Hard to reclaim	0.00 0.00 0.00 0.00
Surnuf gravelly loam----	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Clay > 40% Rock fragment content Hard to reclaim	0.00 0.00 0.00 0.92
Spine taxadjunct very cobble loam-----	20	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
720: Dystroxerepts extremely gravelly loam-----	40	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.94
Haploxerafls very gravelly loam-----	30	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim Clay 27 to 40%	0.00 0.00 0.00 0.50
Rock outcrop, metavolcanic-----	15	Not rated		Not rated		Not rated	

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
721: Haploxerands, granitic till, medial sandy loam	70	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00 0.00	Fair source Bottom layer not a source Thickest layer a possible source	0.00 0.05	Poor source Hard to reclaim Slope 12 to 15% Rock fragment content	0.00 0.04 0.50
722: Haploxerands, granitic till, medial sandy loam	70	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00 0.00	Fair source Bottom layer not a source Thickest layer a possible source	0.00 0.05	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.50
723: Haploxerands, granitic till, medial sandy loam	70	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00 0.00	Fair source Bottom layer not a source Thickest layer a possible source	0.00 0.05	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.50
724: Haploxerands, volcanic till, cobbly coarse sandy loam-----	75	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.03 0.03	Fair source Rock fragment content Slope 8 to 12% Hard to reclaim	0.12 0.84 0.88
725: Haploxerands, volcanic till, cobbly coarse sandy loam-----	75	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.03 0.03	Poor source Slope > 15% Rock fragment content Hard to reclaim	0.00 0.12 0.88

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
726: Haploxerands, volcanic till, cobbly coarse sandy loam-----	75	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.03 0.03	Poor source Slope > 15% Rock fragment content Hard to reclaim	0.00 0.12 0.88
727: Bonneyridge sandy loam--	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.14 0.14	Good source	
728: Bonneyridge sandy loam--	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.14 0.14	Poor source Slope > 15%	0.00
729: Bonneyridge sandy loam--	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.14 0.14	Poor source Slope > 15%	0.00
730: Tusccoll gravelly loam--	60	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim	0.00 0.12 0.50
Schott very gravelly loam-----	25	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim Clay 27 to 40%	0.00 0.00 0.00 0.92

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
731: Tusccoll gravelly loam--	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim	0.00 0.12 0.50
Schott very gravelly loam-----	35	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim Clay 27 to 40%	0.00 0.00 0.00 0.92
732: Bonepile taxadjunct, duripan substratum----	90	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Fair source Bottom layer not a source Thickest layer a possible source	0.00 0.04	Poor source Rock fragment content Hard to reclaim	0.00 0.00
733: Haploxeralfs, terrace, gravelly loam-----	75	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Hard to reclaim Rock fragment content Clay 27 to 40%	0.00 0.00 0.68
734: Haploxerands medial sandy loam-----	55	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.05 0.05	Poor source Slope > 15% Rock fragment content	0.00 0.12
Aquic Xerofluvents peaty very fine sandy loam-----	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Saturation < 1' depth	0.00

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
735: Fluvaquents, loamy-----	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Saturation < 1' depth	0.00
801: Obstruction gravelly sandy loam-----	70	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Slope 8 to 12% Rock fragment content Hard to reclaim	0.84 0.88 0.92
802: Obskel very gravelly sandy loam-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim	0.00 0.00 0.08
Obstruction gravelly sandy loam-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim	0.00 0.88 0.92
803: Obskel very gravelly sandy loam-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim	0.00 0.00 0.08
Obstruction gravelly sandy loam-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim	0.00 0.88 0.92

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
804: Obskel very gravelly sandy loam-----	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim	0.00 0.00 0.08
Obstruction gravelly sandy loam-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim	0.00 0.88 0.92
Retsongulch very gravelly sandy loam----	20	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Thickest layer not a source Bottom layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40" pH from 4.5 to 6.5	0.00 0.00 0.52 0.76
805: Bottlehill very gravelly loam-----	50	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.25	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock 20 to 40" pH from 4.5 to 6.5 Clay 27 to 40%	0.00 0.62 0.82 0.98
Walkermine very gravelly loam-----	20	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock < 20" Slope 12 to 15%	0.00 0.00 0.16
Logtrain gravelly loam--	20	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Hard to reclaim pH from 4.5 to 6.5	0.00 0.00 0.88

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
806: Bottlehill very gravelly loam-----	50	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.25	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40" pH from 4.5 to 6.5 Clay 27 to 40%	0.00 0.00 0.62 0.82 0.98
Walkermine very gravelly loam-----	20	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
Logtrain gravelly loam--	20	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim pH from 4.5 to 6.5	0.00 0.00 0.00 0.88
807: Bottlehill very gravelly loam-----	35	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.25	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40" pH from 4.5 to 6.5 Clay 27 to 40%	0.00 0.00 0.62 0.82 0.98
Logtrain gravelly loam--	30	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim pH from 4.5 to 6.5	0.00 0.00 0.00 0.88
Walkermine very gravelly loam-----	25	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
808: Bottlehill very gravelly loam-----	45	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.25	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40" pH from 4.5 to 6.5 Clay 27 to 40%	0.00 0.00 0.62 0.82 0.98
Walkermine very gravelly loam-----	20	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
Logtrain gravelly loam--	20	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim pH from 4.5 to 6.5	0.00 0.00 0.00 0.88
809: Walkermine very gravelly loam-----	45	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
Bottlehill very gravelly loam-----	15	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.25	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40" pH from 4.5 to 6.5 Clay 27 to 40%	0.00 0.00 0.62 0.82 0.98
Logtrain gravelly loam--	15	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim pH from 4.5 to 6.5	0.00 0.00 0.00 0.88

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
809: Rock outcrop, metavolcanic-----	15	Not rated		Not rated		Not rated	
810: Dixmine very gravelly loam-----	35	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim Clay 27 to 40%	0.00 0.00 0.00 0.50
Mac gravelly loam-----	25	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.50	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content pH from 4.5 to 6.5 Depth to bedrock 20 to 40"	0.00 0.00 0.88 0.88
Spine very gravelly loam-----	25	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.62	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
811: Powellton gravelly loam	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15%	0.00
Toadtown loam-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Clay 27 to 40% pH from 4.5 to 6.5	0.98 0.98
812: Powellton gravelly loam	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15%	0.00

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
812: Toadtown loam-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Clay 27 to 40% pH from 4.5 to 6.5	0.00 0.98 0.98
813: Powellton gravelly loam	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15%	0.00
Toadtown loam-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Clay 27 to 40% pH from 4.5 to 6.5	0.00 0.98 0.98
814: Mountyana gravelly loam	80	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Hard to reclaim Rock fragment content Clay 27 to 40% Slope 8 to 12% pH from 4.5 to 6.5	0.00 0.00 0.82 0.84 0.98
815: Mountyana gravelly loam	80	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content Clay 27 to 40% pH from 4.5 to 6.5	0.00 0.00 0.00 0.82 0.98
817: Lydon very gravelly medial coarse sandy loam-----	80	Fair source Bottom layer not a source Thickest layer a possible source	0.00 0.07	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock 20 to 40"	0.00 0.76

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
818: Lydon very gravelly medial coarse sandy loam-----	75	Fair source Bottom layer not a source Thickest layer a possible source	0.00 0.07	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.76
819: Lydon very gravelly medial coarse sandy loam-----	65	Fair source Bottom layer not a source Thickest layer a possible source	0.00 0.07	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.76
Rock outcrop, mudflow breccia-----	20	Not rated		Not rated		Not rated	
820: Lydon very gravelly medial coarse sandy loam-----	60	Fair source Bottom layer not a source Thickest layer a possible source	0.00 0.07	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.76
Rock outcrop, mudflow breccia-----	25	Not rated		Not rated		Not rated	
821: Lydon very gravelly medial coarse sandy loam-----	55	Fair source Bottom layer not a source Thickest layer a possible source	0.00 0.07	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.76
Rock outcrop, mudflow breccia-----	30	Not rated		Not rated		Not rated	
822: Bonpile gravelly medial loam-----	85	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Hard to reclaim pH from 4.5 to 6.5	0.00 0.08 0.82

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
823: Bonapile gravelly medial loam-----	85	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim pH from 4.5 to 6.5	0.00 0.00 0.08 0.82
824: Beecee very gravelly medial loam-----	85	Fair source Bottom layer not a source Thickest layer a possible source	0.00 0.11	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim	0.00 0.00 0.88
825: Beecee very gravelly medial loam-----	60	Fair source Bottom layer not a source Thickest layer a possible source	0.00 0.11	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim	0.00 0.00 0.88
Lydon very gravelly medial coarse sandy loam-----	20	Fair source Bottom layer not a source Thickest layer a possible source	0.00 0.07	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.76
826: Redbone gravelly medial sandy loam-----	80	Fair source Thickest layer a possible source Bottom layer a possible source	0.07 0.25	Fair source Bottom layer a possible source Thickest layer a possible source	0.05 0.05	Poor source Hard to reclaim Rock fragment content Slope 8 to 12%	0.00 0.00 0.84
827: Redbone gravelly medial sandy loam-----	80	Fair source Thickest layer a possible source Bottom layer a possible source	0.07 0.25	Fair source Bottom layer a possible source Thickest layer a possible source	0.05 0.05	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
829: Paradiso loam-----	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40%	0.00
830: Paradiso loam-----	75	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Clay > 40%	0.00 0.00
831: Surnuf gravelly loam----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Rock fragment content Hard to reclaim	0.00 0.00 0.92
Bigridge loam-----	30	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Hard to reclaim Rock fragment content	0.00 0.00
Spine very gravelly loam-----	15	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.62	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock < 20" Slope 8 to 12%	0.00 0.00 0.96
832: Surnuf gravelly loam----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Clay > 40% Rock fragment content Hard to reclaim	0.00 0.00 0.00 0.92
Bigridge loam-----	30	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
832: Spine very gravelly loam-----	15	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.62	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
833: Surnuf gravelly loam----	60	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Clay > 40% Rock fragment content Hard to reclaim	0.00 0.00 0.00 0.92
Bigridge loam-----	15	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00
Spine very gravelly loam-----	15	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.62	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
834: Hietanen gravelly loam--	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Rock fragment content	0.88
Mac gravelly loam-----	30	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.50	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content pH from 4.5 to 6.5 Depth to bedrock 20 to 40"	0.00 0.88 0.88

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
835: Hietanen gravelly loam--	60	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content	0.00 0.88
Mac gravelly loam-----	20	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.50	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content pH from 4.5 to 6.5 Depth to bedrock 20 to 40"	0.00 0.00 0.88 0.88
836: Hietanen gravelly loam--	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content	0.00 0.88
Mac gravelly loam-----	20	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.50	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content pH from 4.5 to 6.5 Depth to bedrock 20 to 40"	0.00 0.00 0.88 0.88
Spine very gravelly loam-----	15	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.62	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
837: Hietanen gravelly loam--	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content	0.00 0.88
Spine very gravelly loam-----	25	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.62	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
837: Mac gravelly loam-----	20	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.50	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content pH from 4.5 to 6.5 Depth to bedrock 20 to 40"	0.00 0.00 0.88 0.88
838: Dixmine very gravelly loam-----	35	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim Clay 27 to 40%	0.00 0.00 0.00 0.50
Spine very gravelly loam-----	25	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.62	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
Mac gravelly loam-----	25	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.50	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content pH from 4.5 to 6.5 Depth to bedrock 20 to 40"	0.00 0.00 0.88 0.88
839: Chawanakee gravelly sandy loam-----	55	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.02	Poor source Depth to bedrock < 20" Rock fragment content Slope 8 to 12%	0.00 0.00 0.84
Billscabin gravelly sandy loam-----	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.08 0.08	Poor source Rock fragment content Hard to reclaim Slope 8 to 12%	0.00 0.00 0.84

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
841: Billscabin gravelly sandy loam-----	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.08 0.08	Poor source Slope > 15% Rock fragment content Hard to reclaim	0.00 0.00 0.00
Bonneyridge sandy loam--	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.14 0.14	Poor source Slope > 15%	0.00
842: Billscabin gravelly sandy loam-----	60	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.08 0.08	Poor source Slope > 15% Rock fragment content Hard to reclaim	0.00 0.00 0.00
Bonneyridge sandy loam--	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.14 0.14	Poor source Slope > 15%	0.00
846: Bonneyridge sandy loam--	60	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.14 0.14	Good source	
Lewisflat loam-----	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source pH from 4.5 to 6.5	0.98

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
847: Bonneyridge sandy loam--	60	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.14 0.14	Poor source Slope > 15%	0.00
Lewisflat loam-----	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% pH from 4.5 to 6.5	0.00 0.98
848: Bonneyridge sandy loam--	60	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.14 0.14	Poor source Slope > 15%	0.00
Lewisflat loam-----	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% pH from 4.5 to 6.5	0.00 0.98
850: Lewisflat loam-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source pH from 4.5 to 6.5	0.98
851: Lewisflat loam-----	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% pH from 4.5 to 6.5	0.00 0.98
852: Lewisflat loam-----	75	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% pH from 4.5 to 6.5	0.00 0.98

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
860: Toadtown gravelly loam--	60	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Clay > 40%	0.00
Powellton silt loam-----	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Fair source pH from 4.5 to 6.5 Clay 27 to 40%	0.92 0.96
861: Toadtown gravelly loam--	60	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Slope > 15% Clay > 40%	0.00 0.00
Powellton silt loam-----	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Slope > 15% pH from 4.5 to 6.5 Clay 27 to 40%	0.00 0.92 0.96
862: Toadtown gravelly loam--	60	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Slope > 15% Clay > 40%	0.00 0.00
Powellton silt loam-----	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Slope > 15% pH from 4.5 to 6.5 Clay 27 to 40%	0.00 0.92 0.96
863: Toadtown gravelly loam--	60	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Slope > 15% Clay > 40%	0.00 0.00
Powellton silt loam-----	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Slope > 15% pH from 4.5 to 6.5 Clay 27 to 40%	0.00 0.92 0.96

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
880: Sites taxadjunct gravelly loam-----	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Rock fragment content	0.00 0.00
Jocal taxadjunct gravelly loam-----	35	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.75	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Hard to reclaim Rock fragment content	0.00 0.00
881: Sites taxadjunct gravelly loam-----	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Clay > 40% Rock fragment content	0.00 0.00 0.00
Jocal taxadjunct gravelly loam-----	35	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.75	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00
882: Sites taxadjunct gravelly loam-----	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Clay > 40% Rock fragment content	0.00 0.00 0.00
Jocal taxadjunct gravelly loam-----	35	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.75	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
883: Sites taxadjunct gravelly loam-----	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Clay > 40% Rock fragment content	0.00 0.00 0.00
Jocal taxadjunct gravelly loam-----	40	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.75	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00
885: Rogerville silt loam----	75	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Hard to reclaim Rock fragment content	0.00 0.00 0.12
886: Rogerville silt loam----	80	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Clay > 40% Hard to reclaim Rock fragment content	0.00 0.00 0.00 0.12
892: Rogerville silt loam----	85	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Clay > 40% Hard to reclaim Rock fragment content	0.00 0.00 0.00 0.12
893: Rogerville silt loam----	85	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Clay > 40% Hard to reclaim Rock fragment content	0.00 0.00 0.00 0.12

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
902: Lava flows, Lovejoy basalt-----	50	Not rated		Not rated		Not rated	
Lumpkin gravelly medial sandy loam-----	40	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Thickest layer not a source Content of organic matter Bottom layer not a source	0.00 0.00 0.00	Poor source Depth to bedrock < 20" Rock fragment content pH from 4.5 to 6.5	0.00 0.00 0.98
903: Mudwash gravelly medial sandy loam-----	45	Fair source Thickest layer a possible source Bottom layer a possible source	0.30 0.88	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Hard to reclaim Rock fragment content pH from 4.5 to 6.5	0.00 0.00 0.92
Timberisland very gravelly medial sandy loam-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer Organic matter content	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source Content of organic matter	0.00 0.00 0.00	Poor source Hard to reclaim Rock fragment content Slope > 15%	0.00 0.00 0.00
Lavatop gravelly medial fine sandy loam-----	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer Organic matter content	0.00 0.00 0.00	Poor source Thickest layer not a source Content of organic matter Bottom layer not a source	0.00 0.00 0.00	Poor source Rock fragment content Depth to bedrock 20 to 40" pH > 6.5	0.00 0.30 0.99
904: Lava flows, Lovejoy basalt-----	60	Not rated		Not rated		Not rated	
Lavatop gravelly medial fine sandy loam-----	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer Organic matter content	0.00 0.00 0.00	Poor source Thickest layer not a source Content of organic matter Bottom layer not a source	0.00 0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40" pH > 6.5	0.00 0.00 0.30 0.99

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
905: Lava flows, Lovejoy basalt-----	60	Not rated		Not rated		Not rated	
Lumpkin gravelly medial sandy loam-----	30	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Thickest layer not a source Content of organic matter Bottom layer not a source	0.00 0.00 0.00	Poor source Slope > 15% Depth to bedrock < 20" Rock fragment content pH from 4.5 to 6.5	0.00 0.00 0.00 0.98
906: Lava flows, Lovejoy basalt-----	60	Not rated		Not rated		Not rated	
Lumpkin gravelly medial sandy loam-----	30	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Thickest layer not a source Content of organic matter Bottom layer not a source	0.00 0.00 0.00	Poor source Slope > 15% Depth to bedrock < 20" Rock fragment content pH from 4.5 to 6.5	0.00 0.00 0.00 0.98
911: Endoaquolls loam-----	75	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Saturation < 1' depth Clay > 40%	0.00 0.00
923: Powderhouse medial sandy loam-----	45	Fair source Thickest layer not a source due to fines or thin layer Organic matter content Bottom layer a possible source	0.00 0.00 0.00 0.25	Fair source Content of organic matter Thickest layer not a source Bottom layer a possible source	0.00 0.00 0.06	Poor source Rock fragment content Depth to bedrock 20 to 40" pH from 4.5 to 6.5	0.00 0.82 0.88
McNair medial coarse sandy loam-----	25	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.50	Fair source Thickest layer a possible source Bottom layer a possible source	0.03 0.06	Poor source Hard to reclaim OM = 15-30% Rock fragment content	0.00 0.78 0.88

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
923: Greenwell medial sandy loam-----	20	Poor source Thickest layer not a source due to fines or thin layer Organic matter content Bottom layer not a source	0.00 0.00 0.00 0.00	Fair source Thickest layer not a source Content of organic matter Bottom layer a possible source	0.00 0.00 0.04	Poor source Rock fragment content Depth to bedrock 20 to 40"	0.00 0.64
924: Powderhouse medial sandy loam-----	45	Fair source Thickest layer not a source due to fines or thin layer Organic matter content Bottom layer a possible source	0.00 0.00 0.00 0.25	Fair source Content of organic matter Thickest layer not a source Bottom layer a possible source	0.00 0.00 0.06	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40" pH from 4.5 to 6.5	0.00 0.00 0.82 0.88
McNair medial coarse sandy loam-----	25	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.50	Fair source Thickest layer a possible source Bottom layer a possible source	0.03 0.06	Poor source Slope > 15% Hard to reclaim OM = 15-30% Rock fragment content	0.00 0.00 0.78 0.88
Greenwell medial sandy loam-----	20	Poor source Thickest layer not a source due to fines or thin layer Organic matter content Bottom layer not a source	0.00 0.00 0.00 0.00	Fair source Thickest layer not a source Content of organic matter Bottom layer a possible source	0.00 0.00 0.04	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.64
925: Powderhouse medial sandy loam-----	45	Fair source Thickest layer not a source due to fines or thin layer Organic matter content Bottom layer a possible source	0.00 0.00 0.00 0.25	Fair source Content of organic matter Thickest layer not a source Bottom layer a possible source	0.00 0.00 0.06	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40" pH from 4.5 to 6.5	0.00 0.00 0.82 0.88

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
925: McNair medial coarse sandy loam-----	25	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.50	Fair source Thickest layer a possible source Bottom layer a possible source	0.03 0.06	Poor source Slope > 15% Hard to reclaim OM = 15-30% Rock fragment content	0.00 0.00 0.78 0.88
Greenwell medial sandy loam-----	20	Poor source Thickest layer not a source due to fines or thin layer Organic matter content Bottom layer not a source	0.00 0.00 0.00	Fair source Thickest layer not a source Content of organic matter Bottom layer a possible source	0.00 0.00 0.04	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.64
930: Shakeridge gravelly medial coarse sandy loam-----	50	Fair source Thickest layer a possible source Bottom layer a possible source	0.25 0.50	Fair source Bottom layer a possible source Thickest layer a possible source	0.05 0.05	Poor source Hard to reclaim Rock fragment content	0.00 0.00
Timberisland very gravelly medial sandy loam-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer Organic matter content	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source Content of organic matter	0.00 0.00 0.00	Poor source Hard to reclaim Rock fragment content	0.00 0.00
931: Shakeridge gravelly medial coarse sandy loam-----	40	Fair source Thickest layer a possible source Bottom layer a possible source	0.25 0.50	Fair source Bottom layer a possible source Thickest layer a possible source	0.05 0.05	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
931: Mudwash gravelly medial sandy loam-----	25	Fair source Thickest layer a possible source Bottom layer a possible source	0.30 0.88	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content pH from 4.5 to 6.5	0.00 0.00 0.00 0.92
Timberisland very gravelly medial sandy loam-----	15	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer Organic matter content	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source Content of organic matter	0.00 0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00
932: Shakeridge gravelly medial coarse sandy loam-----	50	Fair source Thickest layer a possible source Bottom layer a possible source	0.25 0.50	Fair source Bottom layer a possible source Thickest layer a possible source	0.05 0.05	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00
Mudwash gravelly medial sandy loam-----	35	Fair source Thickest layer a possible source Bottom layer a possible source	0.30 0.88	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content pH from 4.5 to 6.5	0.00 0.00 0.00 0.92
933: Shakeridge gravelly medial coarse sandy loam-----	80	Fair source Thickest layer a possible source Bottom layer a possible source	0.25 0.50	Fair source Bottom layer a possible source Thickest layer a possible source	0.05 0.05	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
934: Mudwash gravelly medial sandy loam-----	80	Fair source Thickest layer a possible source Bottom layer a possible source	0.30 0.88	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Hard to reclaim Rock fragment content pH from 4.5 to 6.5	0.00 0.00 0.92
939: Fluvaquentic Humaquepts very fine sandy loam---	85	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Saturation from 1 to 3' Hard to reclaim	0.04 0.08
940: Dejonah gravelly loam---	50	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Fair source Bottom layer not a source Thickest layer a possible source	0.00 0.04	Good source	
Stagpoint loam-----	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Hard to reclaim pH from 4.5 to 6.5	0.00 0.50 0.95
941: Dejonah gravelly loam---	50	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Fair source Bottom layer not a source Thickest layer a possible source	0.00 0.04	Poor source Slope > 15%	0.00
Stagpoint loam-----	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim pH from 4.5 to 6.5	0.00 0.00 0.50 0.95

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
942: Stagpoint loam-----	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim pH from 4.5 to 6.5	0.00 0.00 0.50 0.95
Dejonah gravelly loam---	30	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Fair source Bottom layer not a source Thickest layer a possible source	0.00 0.04	Poor source Slope > 15%	0.00
948: Stagpoint loam-----	55	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim pH from 4.5 to 6.5	0.00 0.00 0.50 0.95
Dejonah gravelly loam---	35	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Fair source Bottom layer not a source Thickest layer a possible source	0.00 0.04	Poor source Slope > 15%	0.00
949: Rogerville taxadjunct fine sandy loam-----	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer not a source Thickest layer a possible source	0.00 0.04	Poor source Slope > 15% Rock fragment content Hard to reclaim	0.00 0.00 0.92
950: Lumpkin taxadjunct very gravelly medial very fine sandy loam-----	40	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.25	Poor source Bottom layer not a source Thickest layer not a source Content of organic matter	0.00 0.00 0.00	Poor source Rock fragment content Depth to bedrock < 20"	0.00 0.00
Rock outcrop, olivine basalt, andesite, or mudflow-----	25	Not rated		Not rated		Not rated	

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
950: Powderhouse medial sandy loam-----	20	Fair source Thickest layer not a source due to fines or thin layer Organic matter content Bottom layer a possible source	0.00 0.00 0.00 0.25	Fair source Content of organic matter Thickest layer not a source Bottom layer a possible source	0.00 0.00 0.06	Poor source Rock fragment content Depth to bedrock 20 to 40" pH from 4.5 to 6.5	0.00 0.82 0.88
951: Lumpkin taxadjunct very gravelly medial very fine sandy loam-----	40	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.25	Poor source Bottom layer not a source Thickest layer not a source Content of organic matter	0.00 0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
Rock outcrop, andesite--	25	Not rated		Not rated		Not rated	
Powderhouse medial sandy loam-----	20	Fair source Thickest layer not a source due to fines or thin layer Organic matter content Bottom layer a possible source	0.00 0.00 0.00 0.25	Fair source Content of organic matter Thickest layer not a source Bottom layer a possible source	0.00 0.00 0.06	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40" pH from 4.5 to 6.5	0.00 0.00 0.82 0.88
960: Surnuf gravelly loam, high elevation-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Hard to reclaim Rock fragment content	0.00 0.00 0.88
961: Surnuf gravelly loam, high elevation-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Hard to reclaim Slope 8 to 12% Rock fragment content	0.00 0.00 0.63 0.88

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
962: Surnuf gravelly loam, high elevation-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Slope > 15% Clay > 40% Hard to reclaim Rock fragment content	0.00 0.00 0.00 0.88
963: Surnuf gravelly loam, high elevation-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00 0.00	Poor source Slope > 15% Clay > 40% Hard to reclaim Rock fragment content	0.00 0.00 0.00 0.88
990: Riverwash, frequently flooded-----	100	Not rated		Not rated		Not rated	
991: Xerofluvents sandy loam, frequently flooded-----	75	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.02 0.08	Fair source Saturation from 1 to 3'	0.80
995: Pits, gravel-----	100	Not rated		Not rated		Not rated	
996: Dumps, excavated material-----	100	Not rated		Not rated		Not rated	
997: Pits-----	95	Not rated		Not rated		Not rated	
998: Dumps, landfill-----	100	Not rated		Not rated		Not rated	

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
999: Water-----	100	Not rated		Not rated		Not rated	
DAM: Dam, manmade-----	100	Not rated		Not rated		Not rated	

The interpretation for gravel evaluates the content of rock fragments more than .2 inch in size in the bottom or thickest layer of the soil.

The interpretation for sand evaluates the amount of sand and fine gravel in the thickest or bottom layer of the soil. Organic soil layers with the Unified engineering class for peat (PT) also are evaluated.

The interpretation for topsoil evaluates the following soil properties at various depths: calcium carbonates, clay content, bulk density, sand content, soil wetness, rock fragments .2 inch to more than 3 inches in size, content of organic matter (OM), sodium content expressed as the sodium adsorption ratio (SAR), salinity expressed as dS/m of electrical conductivity (EC), depth to bedrock, slope, and pH.

Table 18b.--Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The closer the value is to 0.00, the greater the limitation. A value of 0.00 indicates an absolute limitation based on the soil property criteria used to develop the interpretation. Values closer to 1.00 indicate lesser limitations. Features with a value of 1.00 have absolutely no limitation and are not shown in the table. Rating classes are determined by the most limiting value. Fine-earth fractions and rock fragments are reported on a weight basis. An explanation of the rating criteria and of the abbreviations used in describing the limitations is given at the end of the table)

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
100: Anita clay-----	60	Poor source Clay > 40% AWC < 3" to 60" depth Depth to pan < 20" OM .5 to 1% pH between 4 and 6.5 above 40"	0.00 0.00 0.00 0.95 0.97	Poor source Saturation < 1' depth Depth to pan < 40" LEP > 9 AASHTO GIN > 8 (low soil strength)	0.00 0.00 0.00 0.00
Galt clay-----	25	Poor source Clay > 40% OM < .5% AWC 3 - 6" to 60" depth Depth to pan 20 to 40"	0.00 0.00 0.71 0.71	Poor source Saturation < 1' depth Depth to pan < 40" LEP > 9 AASHTO GIN > 8 (low soil strength)	0.00 0.00 0.00 0.00
104: Bosquejo clay-----	85	Poor source OM < .5% Clay > 40% K factor .10 -.35	0.00 0.00 0.90	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.40
105: Busacca clay loam-----	85	Poor source OM < .5% Clay 27 to 40% K factor < .10	0.00 0.18 0.99	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.51
108: Tuscan gravelly loam-----	45	Poor source AWC < 3" to 60" depth Depth to pan < 20" Clay > 40% OM < .5%	0.00 0.00 0.00 0.00	Poor source Saturation < 1' depth Depth to pan < 40" AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.00 0.02

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
108:					
Igo gravelly loam-----	20	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Saturation < 1' depth	0.00
		Depth to pan < 20"	0.00	Depth to pan < 40"	0.00
		Clay 27 to 40%	0.68		
Anita clay-----	15	Poor source		Poor source	
		Clay > 40%	0.00	Saturation < 1' depth	0.00
		AWC < 3" to 60" depth	0.00	Depth to pan < 40"	0.00
		Depth to pan < 20"	0.00	LEP > 9	0.00
		OM .5 to 1%	0.95	AASHTO GIN > 8 (low soil strength)	0.00
		pH between 4 and 6.5 above 40"	0.97		
109:					
Bosquejo clay loam-----	85	Poor source		Poor source	
		Clay > 40%	0.00	AASHTO GIN > 8 (low soil strength)	0.00
				LEP 3 to 9	0.46
110:					
Bosquejo silt loam, overwash, occasionally flooded-----	90	Poor source		Poor source	
		Clay > 40%	0.00	AASHTO GIN > 8 (low soil strength)	0.00
		pH between 4 and 6.5 above 40"	0.97	LEP 3 to 9	0.25
111yu:					
Auburn loam-----	40	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
Sobrante loam-----	40	Poor source		Poor source	
		OM < .5%	0.00	Depth to bedrock < 40"	0.00
		AWC 3 - 6" to 60" depth	0.41	LEP 3 to 9	0.75
		pH between 4 and 6.5 above 40"	0.95	AASHTO GIN 5 to 8 (soil strength)	0.78
114yu:					
Auburn gravelly loam-----	40	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
Sobrante gravelly loam-----	40	Poor source		Poor source	
		OM < .5%	0.00	Depth to bedrock < 40"	0.00
		AWC 3 - 6" to 60" depth	0.55	LEP 3 to 9	0.75
		pH between 4 and 6.5 above 40"	0.95		

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
118: Xerorthents, tailings-----	80	Poor source OM < .5% Sand fractions 75 to 85% pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.00 0.03 0.68 0.84	Good source	
118co: Clear Lake clay, frequently flooded-----	90	Poor source Clay > 40% SAR from 4 to 13 pH between 4 and 6.5 above 40"	0.00 0.90 0.96	Poor source AASHTO GIN > 8 (low soil strength) LEP > 9	0.00 0.00
119: Xerorthents, tailings-----	70	Poor source OM < .5% Sand fractions 75 to 85% pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.00 0.03 0.68 0.84	Good source	
Urban land-----	30	Not rated		Not rated	
119yu: Auburn gravelly loam-----	30	Poor source AWC < 3" to 60" depth	0.00	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Sobrante gravelly loam-----	30	Poor source OM < .5% AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.55 0.95	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.75
Rock outcrop-----	20	Not rated		Not rated	
120: Gridley taxadjunct clay loam-----	80	Poor source OM < .5% Depth to pan 20 to 40" AWC 3 - 6" to 60" depth Clay 27 to 40%	0.00 0.01 0.22 0.32	Poor source Depth to pan < 40" AASHTO GIN > 8 (low soil strength) Saturation from 1 to 3' LEP 3 to 9	0.00 0.00 0.04 0.55

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
121: Boga loam-----	45	Fair source OM .5 to 1% K factor .10 -.35	0.32 0.90	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9 No saturated zone within 3' depth	0.00 0.79 0.99
Loemstone loam-----	40	Poor source OM < .5% K factor .10 -.35 pH between 4 and 6.5 above 40"	0.00 0.90 0.95	Fair source LEP 3 to 9 No saturated zone within 3' depth	0.92 0.99
121su: Columbia fine sandy loam, frequently flooded-----	80	Fair source OM .5 to 1%	0.50	Good source	
125: Gridley taxadjunct loam-----	65	Fair source Depth to pan 20 to 40" AWC 3 - 6" to 60" depth Clay 27 to 40%	0.03 0.22 0.50	Poor source Depth to pan < 40" AASHTO GIN > 8 (low soil strength) Saturation from 1 to 3' LEP 3 to 9	0.00 0.00 0.04 0.45
Calcic Haploxerolls sandy loam---	20	Fair source SAR from 4 to 13 AWC 3 - 6" to 60" depth	0.22 0.97	Fair source Saturation from 1 to 3'	0.94
126: Liveoak sandy loam-----	85	Fair source OM .5 to 1%	0.68	Fair source Saturation from 1 to 3'	0.89
127: Gridley taxadjunct loam-----	85	Fair source Depth to pan 20 to 40" AWC 3 - 6" to 60" depth Clay 27 to 40%	0.03 0.22 0.50	Poor source Depth to pan < 40" AASHTO GIN > 8 (low soil strength) Saturation from 1 to 3' LEP 3 to 9	0.00 0.00 0.04 0.45

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
130: Eastbiggs loam-----	80	Poor source Clay > 40% OM < .5% Depth to pan 20 to 40" AWC 3 - 6" to 60" depth K factor .10 -.35	0.00 0.00 0.29 0.54 0.90	Poor source Depth to pan < 40" AASHTO GIN > 8 (low soil strength) Saturation from 1 to 3' LEP 3 to 9	0.00 0.00 0.02 0.43
133: Eastbiggs loam-----	50	Poor source Clay > 40% OM < .5% Depth to pan 20 to 40" AWC 3 - 6" to 60" depth K factor .10 -.35	0.00 0.00 0.29 0.54 0.90	Poor source Depth to pan < 40" AASHTO GIN > 8 (low soil strength) Saturation from 1 to 3' LEP 3 to 9	0.00 0.00 0.02 0.43
Galt clay loam-----	40	Fair source Clay 27 to 40% Depth to pan 20 to 40" AWC 3 - 6" to 60" depth K factor < .10	0.08 0.54 0.89 0.99	Poor source Saturation < 1' depth Depth to pan < 40" AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.00 0.16
136: Duric Xerarents, cut-----	35	Poor source AWC < 3" to 60" depth OM < .5% Depth to pan < 20" Clay 27 to 40% pH between 4 and 6.5 above 40" K factor < .10	0.00 0.00 0.00 0.50 0.92 0.99	Poor source Saturation < 1' depth Depth to pan < 40" AASHTO GIN > 8 (low soil strength) LEP > 9	0.00 0.00 0.00 0.00
Duric Xerarents, fill-----	30	Poor source OM < .5% pH between 4 and 6.5 above 40" K factor < .10	0.00 0.99 0.99	Fair source Depth to pan 40-60" LEP 3 to 9	0.39 0.99
Eastbiggs fine sandy loam, leveled-----	25	Poor source OM < .5% Depth to pan 20 to 40" AWC 3 - 6" to 60" depth K factor .10 -.35 pH between 4 and 6.5 above 40"	0.00 0.54 0.78 0.90 0.92	Poor source Depth to pan < 40" Saturation from 1 to 3' LEP 3 to 9	0.00 0.02 0.77

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
138su: Liveoak sandy clay loam-----	85	Fair source pH between 4 and 6.5 above 40"	0.97	Fair source Saturation from 1 to 3'	0.89
139su: Liveoak taxadjunct loam, frequently flooded-----	45	Fair source OM .5 to 1% K factor < .10	0.50 0.99	Fair source Depth to pan 40-60"	0.87
Galt taxadjunct clay loam, frequently flooded-----	40	Fair source Depth to pan 20 to 40" AWC 3 - 6" to 60" depth OM .5 to 1% Clay 27 to 40%	0.01 0.23 0.50 0.98	Poor source Depth to pan < 40" AASHTO GIN > 8 (low soil strength) Saturation from 1 to 3' LEP 3 to 9	0.00 0.00 0.07 0.75
143su: Marcum clay loam-----	45	Fair source Clay 27 to 40% K factor < .10	0.98 0.99	Poor source AASHTO GIN > 8 (low soil strength) Depth to bedrock 40 to 60" LEP 3 to 9	0.00 0.07 0.57
Gridley clay loam-----	40	Fair source Clay 27 to 40%	0.98	Poor source Depth to bedrock < 40" AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.42
149yu: Flanly sandy loam-----	80	Poor source OM < .5% pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.00 0.84 0.99	Poor source Depth to bedrock < 40" AASHTO GIN 5 to 8 (soil strength) LEP 3 to 9	0.00 0.78 0.88
150: Columbia stratified sand to fine sandy loam-----	85	Fair source K factor .10 -.35	0.68	Good source	
150su: Olashes sandy loam-----	85	Fair source pH between 4 and 6.5 above 40"	0.97	Fair source LEP 3 to 9	0.82

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
151yu: Flanly sandy loam-----	80	Poor source OM < .5% pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.00 0.84 0.99	Poor source Depth to bedrock < 40" Slopes > 25% AASHTO GIN 5 to 8 (soil strength) LEP 3 to 9	0.00 0.00 0.78 0.88
152: Gianella fine sandy loam, frequently flooded-----	85	Fair source OM .5 to 1% K factor .10 -.35	0.01 0.37	Good source	
153: Gianella sandy loam, frequently flooded-----	85	Fair source OM .5 to 1% K factor .10 -.35	0.08 0.90	Good source	
154: Gianella silt loam, frequently flooded-----	85	Fair source OM .5 to 1% K factor .10 -.35	0.00 0.90	Good source	
158: Gianella fine sandy loam, occasionally flooded-----	85	Fair source pH between 4 and 6.5 above 40"	0.92	Good source	
160: Gianella loam, occasionally flooded-----	85	Good source		Good source	
161: Gianella fine sandy loam, rarely flooded-----	90	Fair source pH between 4 and 6.5 above 40"	0.92	Good source	
162: Gianella loam, rarely flooded----	90	Good source		Good source	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
163yu: Holillipah loamy sand-----	85	Poor source WEG = 1 or 2 OM < .5% AWC 3 - 6" to 60" depth	0.00 0.00 0.90	Good source	
165yu: Holland loam-----	40	Poor source OM < .5% pH between 4 and 6.5 above 40"	0.00 0.74	Fair source LEP 3 to 9 Slopes 15 to 25%	0.80 0.98
Hoda loam-----	25	Poor source OM < .5% Clay > 40% pH between 4 and 6.5 above 40"	0.00 0.00 0.50	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9 Slopes 15 to 25%	0.00 0.79 0.98
Hotaw loam-----	20	Poor source OM < .5% pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.00 0.84 0.92	Poor source Depth to bedrock < 40" LEP 3 to 9 Slopes 15 to 25%	0.00 0.79 0.98
173yu: Hotaw loam-----	45	Poor source OM < .5% pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.00 0.84 0.92	Poor source Depth to bedrock < 40" Slopes 15 to 25% LEP 3 to 9	0.00 0.68 0.79
Chawanakee gravelly sandy loam----	20	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40" OM .5 to 1%	0.00 0.68 0.68	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.68
Holland loam-----	15	Poor source OM < .5% pH between 4 and 6.5 above 40"	0.00 0.74	Fair source Slopes 15 to 25% LEP 3 to 9	0.68 0.80
175: Farwell clay loam, rarely flooded	85	Good source		Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.75

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
176: Farwell loam, occasionally flooded-----	85	Good source		Poor source AASHTO GIN > 8 (low soil strength)	0.00
176yu: Jocal loam-----	80	Poor source OM < .5% pH between 4 and 6.5 above 40" Clay 27 to 40%	0.00 0.50 0.98	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.75
177: Farwell silt loam, occasionally flooded-----	85	Fair source K factor .10 -.35 Clay 27 to 40%	0.68 0.92	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.92
178: Arbuckle gravelly loam-----	87	Poor source OM < .5% K factor < .10	0.00 0.99	Good source	
179: Moda taxadjunct loam-----	65	Poor source Clay > 40% OM < .5% Depth to pan 20 to 40" AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40" K factor < .10	0.00 0.00 0.03 0.10 0.92 0.99	Poor source Saturation < 1' depth Depth to pan < 40" AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.00 0.29
Arbuckle gravelly loam-----	20	Poor source OM < .5% K factor < .10	0.00 0.99	Good source	
180: Dodgeland silty clay loam, occasionally flooded-----	85	Poor source Clay > 40% OM .5 to 1% pH between 4 and 6.5 above 40" K factor < .10	0.00 0.08 0.92 0.99	Poor source Saturation < 1' depth AASHTO GIN > 8 (low soil strength) LEP > 9	0.00 0.00 0.00

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
181: Dodgeland silty clay loam, frequently flooded-----	80	Poor source Clay > 40% OM .5 to 1% pH between 4 and 6.5 above 40" K factor < .10	0.00 0.08 0.92 0.99	Poor source Saturation < 1' depth AASHTO GIN > 8 (low soil strength) LEP > 9	0.00 0.00 0.00
188yu: Mariposa taxadjunct gravelly loam	80	Poor source AWC < 3" to 60" depth OM < .5% pH between 4 and 6.5 above 40"	0.00 0.00 0.54	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.08
189: Esquon silt loam, overwash-----	90	Poor source Clay > 40% K factor .10 -.35 OM .5 to 1%	0.00 0.37 0.92	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9 Saturation from 1 to 3'	0.00 0.06 0.89
189yu: Mariposa taxadjunct gravelly loam	80	Poor source AWC < 3" to 60" depth OM < .5% pH between 4 and 6.5 above 40"	0.00 0.00 0.54	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
196yu: Mildred cobbly loam-----	80	Poor source OM < .5% Clay > 40% AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40" K factor < .10	0.00 0.00 0.02 0.95 0.99	Poor source Depth to bedrock < 40" Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.00 0.25
200: Parrott silt loam, occasionally flooded-----	85	Fair source K factor .10 -.35	0.68	Fair source AASHTO GIN 5 to 8 (soil strength)	0.22
201: Parrott silt loam, frequently flooded-----	85	Fair source K factor .10 -.35	0.68	Fair source AASHTO GIN 5 to 8 (soil strength)	0.22

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
203: Kusalslough silty clay loam, occasionally flooded-----	85	Fair source Clay 27 to 40% K factor .10 -.35 pH between 4 and 6.5 above 40"	0.18 0.68 0.74	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.31
205: Parrott silt loam, frequently flooded-----	50	Fair source K factor .10 -.35	0.68	Fair source AASHTO GIN 5 to 8 (soil strength)	0.22
Vermet silt loam, frequently flooded-----	35	Fair source K factor .10 -.35 OM .5 to 1% Clay 27 to 40%	0.68 0.92 0.92	Poor source Saturation < 1' depth AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.76
206: Islandbar sandy loam-----	60	Fair source pH between 4 and 6.5 above 40"	0.84	Good source	
Chawanakee gravelly sandy loam----	30	Poor source AWC < 3" to 60" depth OM < .5% pH between 4 and 6.5 above 40" K factor < .10	0.00 0.00 0.68 0.99	Poor source Depth to bedrock < 40"	0.00
207: Islandbar sandy loam-----	60	Fair source pH between 4 and 6.5 above 40"	0.84	Fair source Slopes 15 to 25%	0.18
Chawanakee gravelly sandy loam----	30	Poor source AWC < 3" to 60" depth OM < .5% pH between 4 and 6.5 above 40" K factor < .10	0.00 0.00 0.68 0.99	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
208: Islandbar sandy loam-----	60	Fair source pH between 4 and 6.5 above 40"	0.84	Poor source Slopes > 25%	0.00

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
208: Chawanakee gravelly sandy loam----	30	Poor source AWC < 3" to 60" depth OM < .5% pH between 4 and 6.5 above 40" K factor < .10	0.00 0.00 0.68 0.99	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
209: Islandbar sandy loam-----	60	Fair source pH between 4 and 6.5 above 40"	0.84	Poor source Slopes > 25%	0.00
Chawanakee gravelly sandy loam----	30	Poor source AWC < 3" to 60" depth OM < .5% pH between 4 and 6.5 above 40" K factor < .10	0.00 0.00 0.68 0.99	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
210: Featherfalls sandy loam-----	50	Fair source pH between 4 and 6.5 above 40"	0.92	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.76
Islandbar sandy loam-----	35	Fair source pH between 4 and 6.5 above 40"	0.84	Good source	
211: Featherfalls sandy loam-----	55	Fair source pH between 4 and 6.5 above 40"	0.92	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.76
Islandbar sandy loam-----	35	Fair source pH between 4 and 6.5 above 40"	0.84	Fair source Slopes 15 to 25%	0.18
212: Featherfalls sandy loam-----	55	Fair source pH between 4 and 6.5 above 40"	0.92	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.76
Islandbar sandy loam-----	35	Fair source pH between 4 and 6.5 above 40"	0.84	Poor source Slopes > 25%	0.00

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
213:					
Featherfalls sandy loam-----	45	Fair source pH between 4 and 6.5 above 40"	0.92	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.76
Islandbar sandy loam-----	35	Fair source pH between 4 and 6.5 above 40"	0.84	Poor source Slopes > 25%	0.00
214:					
Crystalhill gravelly coarse sandy loam-----	35	Poor source OM < .5% pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.00 0.68 0.98	Good source	
Oregongulch gravelly sandy loam---	20	Poor source AWC < 3" to 60" depth OM < .5% pH between 4 and 6.5 above 40" K factor < .10	0.00 0.00 0.68 0.99	Poor source Depth to bedrock < 40"	0.00
Craigsaddle coarse sandy loam----	20	Poor source OM < .5% K factor .10 -.35 pH between 4 and 6.5 above 40"	0.00 0.37 0.61	Good source	
Rock outcrop, trondhemite-----	10	Not rated		Not rated	
215:					
Crystalhill gravelly coarse sandy loam-----	35	Poor source OM < .5% pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.00 0.68 0.98	Fair source Slopes 15 to 25%	0.18
Oregongulch gravelly sandy loam---	20	Poor source AWC < 3" to 60" depth OM < .5% pH between 4 and 6.5 above 40" K factor < .10	0.00 0.00 0.68 0.99	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.18

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
215: Craigsaddle coarse sandy loam-----	20	Poor source OM < .5% K factor .10 -.35 pH between 4 and 6.5 above 40"	0.00 0.37 0.61	Fair source Slopes 15 to 25% Depth to bedrock 40 to 60"	0.18 0.99
Rock outcrop, trondhemite-----	10	Not rated		Not rated	
216: Crystalhill gravelly coarse sandy loam-----	35	Poor source OM < .5% pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.00 0.68 0.98	Poor source Slopes > 25%	0.00
Oregongulch gravelly sandy loam---	20	Poor source AWC < 3" to 60" depth OM < .5% pH between 4 and 6.5 above 40" K factor < .10	0.00 0.00 0.68 0.99	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Craigsaddle coarse sandy loam-----	20	Poor source OM < .5% K factor .10 -.35 pH between 4 and 6.5 above 40"	0.00 0.37 0.61	Poor source Slopes > 25% Depth to bedrock 40 to 60"	0.00 0.99
Rock outcrop, trondhemite-----	10	Not rated		Not rated	
217: Crystalhill gravelly coarse sandy loam-----	35	Poor source OM < .5% pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.00 0.68 0.98	Poor source Slopes > 25%	0.00
Oregongulch gravelly sandy loam---	20	Poor source AWC < 3" to 60" depth OM < .5% pH between 4 and 6.5 above 40" K factor < .10	0.00 0.00 0.68 0.99	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
217: Craigsaddle coarse sandy loam-----	20	Poor source OM < .5% K factor .10 -.35 pH between 4 and 6.5 above 40"	0.00 0.37 0.61	Poor source Slopes > 25% Depth to bedrock 40 to 60"	0.00 0.99
Rock outcrop, trondhjemite-----	10	Not rated		Not rated	
218: Rock outcrop, quartz diorite-----	60	Not rated		Not rated	
Lithic Xerorthents gravelly sandy loam-----	20	Poor source AWC < 3" to 60" depth OM < .5% pH between 4 and 6.5 above 40" K factor < .10	0.00 0.00 0.68 0.99	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Chawanakee gravelly sandy loam----	15	Poor source AWC < 3" to 60" depth OM < .5% pH between 4 and 6.5 above 40" K factor < .10	0.00 0.00 0.68 0.99	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
219: Rock outcrop, quartz diorite-----	60	Not rated		Not rated	
Lithic Xerorthents gravelly sandy loam-----	20	Poor source AWC < 3" to 60" depth OM < .5% pH between 4 and 6.5 above 40" K factor .10 -.35	0.00 0.00 0.68 0.90	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Chawanakee gravelly sandy loam----	15	Poor source AWC < 3" to 60" depth OM < .5% pH between 4 and 6.5 above 40" K factor < .10	0.00 0.00 0.68 0.99	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
220: Esquon clay, frequently flooded---	60	Poor source Clay > 40% OM < .5% pH between 4 and 6.5 above 40"	0.00 0.00 0.99	Poor source AASHTO GIN > 8 (low soil strength) LEP > 9 Saturation from 1 to 3' Depth to pan 40-60"	0.00 0.00 0.14 0.58
Clear Lake silty clay loam, overwash-----	30	Poor source Clay > 40% K factor .10 -.35 OM .5 to 1%	0.00 0.68 0.92	Poor source Saturation < 1' depth AASHTO GIN > 8 (low soil strength) LEP > 9	0.00 0.00 0.00
221yu: Sites loam-----	85	Poor source OM < .5% Clay > 40% pH between 4 and 6.5 above 40"	0.00 0.00 0.54	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.75
222yu: Sites loam-----	85	Poor source OM < .5% Clay > 40% pH between 4 and 6.5 above 40"	0.00 0.00 0.54	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.75
225yu: Sites gravelly loam, bedrock substratum-----	80	Poor source OM < .5% Clay > 40% pH between 4 and 6.5 above 40"	0.00 0.00 0.54	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9 Depth to bedrock 40 to 60"	0.00 0.75 0.82
226yu: Sites gravelly loam, bedrock substratum-----	80	Poor source OM < .5% Clay > 40% pH between 4 and 6.5 above 40"	0.00 0.00 0.54	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9 Depth to bedrock 40 to 60"	0.00 0.75 0.82

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
227yu: Sites gravelly loam, bedrock substratum-----	80	Poor source OM < .5% Clay > 40% pH between 4 and 6.5 above 40"	0.00 0.00 0.54	Poor source AASHTO GIN > 8 (low soil strength) Slopes 15 to 25% LEP 3 to 9 Depth to bedrock 40 to 60"	0.00 0.08 0.75 0.82
242yu: Surnuf loam-----	80	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.74	Good source	
243yu: Surnuf loam-----	80	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.74	Fair source Slopes 15 to 25%	0.08
244yu: Surnuf loam-----	80	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.74	Poor source Slopes > 25%	0.00
245: Surnuf loam-----	80	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.74	Poor source Slopes > 25%	0.00
248yu: Trainer loam-----	85	Poor source OM < .5%	0.00	Good source	
250: Llanoseco, occasionally flooded---	90	Poor source Clay > 40% Calcium carbonates > 40% OM .5 to 1% K factor .10 -.35 pH between 4 and 6.5 above 40"	0.00 0.00 0.32 0.90 0.92	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.18

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
252: Whitecabin silty clay, occasionally flooded-----	60	Poor source Clay > 40% Maximum pH > 8.5 OM .5 to 1% pH between 4 and 6.5 above 40" K factor < .10	0.00 0.00 0.68 0.88 0.99	Poor source AASHTO GIN > 8 (low soil strength) LEP > 9 Saturation from 1 to 3' Depth to pan 40-60"	0.00 0.00 0.68 0.82
Ordferry silty clay, occasionally flooded-----	25	Poor source Clay > 40% OM < .5% AWC 3 - 6" to 60" depth Depth to pan 20 to 40" K factor .10 -.35 pH between 4 and 6.5 above 40"	0.00 0.00 0.43 0.46 0.90 0.99	Poor source Saturation < 1' depth Depth to pan < 40" LEP > 9 AASHTO GIN > 8 (low soil strength)	0.00 0.00 0.00 0.00
252yu: Woodleaf gravelly loam-----	80	Poor source OM < .5% Clay > 40% AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40" Fragments 3-10" < 25%	0.00 0.00 0.25 0.95 0.99	Poor source Depth to bedrock < 40" LEP 3 to 9 25 to 50% fragments >3"	0.00 0.75 0.99
253yu: Woodleaf gravelly loam-----	80	Poor source OM < .5% Clay > 40% AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40" Fragments 3-10" < 25%	0.00 0.00 0.25 0.95 0.99	Poor source Depth to bedrock < 40" Slopes 15 to 25% LEP 3 to 9 25 to 50% fragments >3"	0.00 0.08 0.75 0.99
255: Whitecabin silty clay loam, occasionally flooded-----	60	Poor source Clay > 40% OM .5 to 1% pH between 4 and 6.5 above 40" K factor < .10	0.00 0.08 0.88 0.99	Poor source LEP > 9 AASHTO GIN > 8 (low soil strength) Depth to pan 40-60" Saturation from 1 to 3'	0.00 0.00 0.12 0.68

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
255: Ordferry silty clay, occasionally flooded-----	30	Poor source Clay > 40% OM < .5% AWC 3 - 6" to 60" depth Depth to pan 20 to 40" K factor .10 -.35 pH between 4 and 6.5 above 40"	0.00 0.00 0.43 0.46 0.90 0.99	Poor source Saturation < 1' depth Depth to pan < 40" LEP > 9 AASHTO GIN > 8 (low soil strength)	0.00 0.00 0.00 0.00
256: Whitecabin silt loam, occasionally flooded-----	85	Poor source Clay > 40% OM .5 to 1% K factor .10 -.35	0.00 0.68 0.90	Poor source AASHTO GIN > 8 (low soil strength) LEP > 9 Saturation from 1 to 3' Depth to pan 40-60"	0.00 0.00 0.68 0.87
257: Llanoseco, frequently flooded-----	90	Poor source Clay > 40% Calcium carbonates > 40% OM .5 to 1% K factor .10 -.35 pH between 4 and 6.5 above 40"	0.00 0.00 0.32 0.90 0.92	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.18
258: Codora, occasionally flooded-----	85	Fair source Clay 27 to 40% OM .5 to 1% K factor .10 -.35	0.02 0.32 0.90	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.31
260: Ordferry silty clay, occasionally flooded-----	90	Poor source Clay > 40% OM < .5% AWC 3 - 6" to 60" depth Depth to pan 20 to 40" K factor .10 -.35 pH between 4 and 6.5 above 40"	0.00 0.00 0.43 0.46 0.90 0.99	Poor source Saturation < 1' depth Depth to pan < 40" LEP > 9 AASHTO GIN > 8 (low soil strength)	0.00 0.00 0.00 0.00

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
280: Columbia taxadjunct stratified very fine sandy loam-----	80	Fair source OM .5 to 1% K factor .10 -.35	0.08 0.37	Poor source Saturation < 1' depth	0.00
290: Perkins gravelly loam-----	90	Fair source OM .5 to 1%	0.68	Good source	
300: Redsluff gravelly loam-----	80	Good source		Good source	
301: Wafap gravelly loam-----	70	Poor source Fragments 3-10" > 50% AWC < 3" to 60" depth OM < .5% Clay 27 to 40% 5 to 15% fragments >10"	0.00 0.00 0.00 0.02 0.70	Poor source Fragments >3" > 50% AASHTO GIN > 8 (low soil strength) Saturation from 1 to 3' Depth to pan 40-60" LEP 3 to 9	0.00 0.00 0.06 0.23 0.43
Hamslough clay-----	15	Poor source Clay > 40% AWC < 3" to 60" depth Depth to pan 20 to 40"	0.00 0.00 0.29	Poor source Saturation < 1' depth Depth to pan < 40" LEP > 9	0.00 0.00 0.00
302: Redtough loam-----	50	Poor source AWC < 3" to 60" depth Depth to pan < 20" OM .5 to 1% pH between 4 and 6.5 above 40"	0.00 0.00 0.92 0.97	Poor source Saturation < 1' depth Depth to pan < 40" AASHTO GIN > 8 (low soil strength)	0.00 0.00 0.00
Redswale cobbly loam-----	35	Poor source AWC < 3" to 60" depth Depth to pan < 20" 25 to 50% fragments 3-10" pH between 4 and 6.5 above 40"	0.00 0.00 0.50 0.99	Poor source Saturation < 1' depth Depth to pan < 40" 25 to 50% fragments >3" AASHTO GIN 5 to 8 (soil strength)	0.00 0.00 0.50 0.78

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
303: Munjar gravelly loam-----	60	Poor source OM < .5% AWC 3 - 6" to 60" depth Clay 27 to 40% Depth to pan 20 to 40" Fragments 3-10" < 25%	0.00 0.00 0.18 0.65 0.99	Poor source Depth to pan < 40" Saturation from 1 to 3' LEP 3 to 9 25 to 50% fragments >3"	0.00 0.24 0.77 0.88
Tuscan taxadjunct gravelly clay loam-----	20	Poor source OM < .5% Clay 27 to 40% AWC 3 - 6" to 60" depth Depth to pan 20 to 40"	0.00 0.08 0.14 0.46	Poor source Saturation < 1' depth Depth to pan < 40" AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.00 0.35
Galt clay-----	10	Poor source Clay > 40% OM < .5% AWC 3 - 6" to 60" depth Depth to pan 20 to 40"	0.00 0.00 0.71 0.71	Poor source Saturation < 1' depth Depth to pan < 40" LEP > 9 AASHTO GIN > 8 (low soil strength)	0.00 0.00 0.00 0.00
304: Redtough loam-----	80	Poor source AWC < 3" to 60" depth Depth to pan < 20" OM .5 to 1% pH between 4 and 6.5 above 40"	0.00 0.00 0.92 0.97	Poor source Depth to pan < 40" AASHTO GIN > 8 (low soil strength)	0.00 0.00
305: Redtough gravelly loam-----	45	Poor source AWC < 3" to 60" depth Depth to pan < 20" OM .5 to 1% pH between 4 and 6.5 above 40"	0.00 0.00 0.32 0.92	Poor source Saturation < 1' depth Depth to pan < 40" AASHTO GIN > 8 (low soil strength)	0.00 0.00 0.00
Redswale loam-----	25	Poor source AWC < 3" to 60" depth Depth to pan < 20" pH between 4 and 6.5 above 40" K factor < .10	0.00 0.00 0.92 0.99	Poor source Saturation < 1' depth Depth to pan < 40"	0.00 0.00

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
305: Anita, gravelly duripan-----	20	Poor source Clay > 40% AWC < 3" to 60" depth Depth to pan < 20" OM .5 to 1%	0.00 0.00 0.00 0.68	Poor source Saturation < 1' depth Depth to pan < 40" LEP > 9 AASHTO GIN > 8 (low soil strength)	0.00 0.00 0.00 0.00
306: Duric Xerarents, fill-----	50	Fair source pH between 4 and 6.5 above 40" K factor .10 -.35 AWC > 6" to 60" depth	0.68 0.90 0.99	Poor source Saturation < 1' depth Depth to pan 40-60"	0.00 0.00
Duric Xerarents, cut-----	40	Poor source Depth to pan < 20" AWC < 3" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.00 0.92	Poor source Saturation < 1' depth Depth to pan < 40"	0.00 0.00
307: Duric Xerarents clay loam, leveled-----	70	Poor source AWC < 3" to 60" depth Depth to pan < 20" Clay > 40% OM < .5% pH between 4 and 6.5 above 40"	0.00 0.00 0.00 0.00 0.92	Poor source Saturation < 1' depth Depth to pan < 40" AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.00 0.02
310: Kimball loam-----	85	Poor source OM < .5% AWC < 3" to 60" depth K factor .10 -.35 pH between 4 and 6.5 above 40"	0.00 0.00 0.90 0.97	Poor source AASHTO GIN > 8 (low soil strength)	0.00
317: Thompsonflat loam-----	75	Poor source OM < .5% pH between 4 and 6.5 above 40"	0.00 0.92	Fair source LEP 3 to 9	0.83

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
318: Thompsonflat fine sandy loam-----	50	Poor source OM < .5% AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.54 0.92	Good source	
Oroville gravelly fine sandy loam	40	Poor source OM < .5% AWC < 3" to 60" depth Depth to pan 20 to 40" pH between 4 and 6.5 above 40"	0.00 0.00 0.05 0.92	Poor source Depth to pan < 40" Saturation from 1 to 3' LEP 3 to 9	0.00 0.01 0.22
320: Vistarobles sandy loam-----	50	Poor source AWC < 3" to 60" depth Depth to pan < 20" pH between 4 and 6.5 above 40"	0.00 0.00 0.92	Poor source Saturation < 1' depth Depth to pan < 40" AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.00 0.28
Redding loam-----	40	Poor source OM < .5% Depth to pan 20 to 40" AWC 3 - 6" to 60" depth	0.00 0.90 0.94	Poor source Depth to pan < 40" Saturation from 1 to 3' LEP 3 to 9 AASHTO GIN 5 to 8 (soil strength)	0.00 0.53 0.64 0.78
321: Durixeralfs, fine-loamy, gravelly fine sandy loam-----	50	Poor source OM < .5% AWC 3 - 6" to 60" depth Depth to pan 20 to 40" pH between 4 and 6.5 above 40"	0.00 0.00 0.29 0.92	Poor source Depth to pan < 40" Depth to bedrock 40 to 60" Saturation from 1 to 3' LEP 3 to 9	0.00 0.18 0.24 0.80
Durixeralfs, loamy-skeletal, gravelly fine sandy loam-----	20	Poor source AWC < 3" to 60" depth OM < .5% Depth to pan < 20" pH between 4 and 6.5 above 40" 25 to 50% fragments 3-10"	0.00 0.00 0.00 0.92 0.96	Poor source Depth to bedrock < 40" Saturation < 1' depth Depth to pan < 40" 25 to 50% fragments >3"	0.00 0.00 0.00 0.96

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
321: Typic Petraquepts silty clay-----	15	Poor source Clay > 40% AWC < 3" to 60" depth Depth to pan < 20" OM < .5%	0.00 0.00 0.00 0.00	Poor source Depth to bedrock < 40" Saturation < 1' depth Depth to pan < 40" LEP > 9 AASHTO GIN > 8 (low soil strength)	0.00 0.00 0.00 0.00 0.00
330: Wilsoncreek loam, occasionally flooded-----	60	Good source		Fair source AASHTO GIN 5 to 8 (soil strength)	0.78
Trainer loam, occasionally flooded-----	25	Poor source OM < .5% K factor .10 -.35	0.00 0.90	Good source	
331: Thompsonflat loam-----	85	Poor source OM < .5% pH between 4 and 6.5 above 40"	0.00 0.92	Fair source Slopes 15 to 25% LEP 3 to 9	0.50 0.83
335: Galt clay loam-----	85	Fair source Clay 27 to 40% Depth to pan 20 to 40" AWC 3 - 6" to 60" depth K factor < .10	0.08 0.54 0.89 0.99	Poor source Saturation < 1' depth Depth to pan < 40" AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.00 0.16
336: Galt clay-----	90	Poor source Clay > 40% OM < .5% AWC 3 - 6" to 60" depth Depth to pan 20 to 40"	0.00 0.00 0.71 0.71	Poor source Saturation < 1' depth Depth to pan < 40" LEP > 9 AASHTO GIN > 8 (low soil strength)	0.00 0.00 0.00 0.00
337: Galt clay loam-----	85	Fair source Clay 27 to 40% Depth to pan 20 to 40" AWC 3 - 6" to 60" depth K factor < .10	0.08 0.54 0.89 0.99	Poor source Saturation < 1' depth Depth to pan < 40" AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.00 0.16

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
338: Oxyaquic Xerofluvents silt loam---	90	Poor source OM < .5% K factor .10 -.35	0.00 0.37	Good source	
339: Oxyaquic Xerofluvents sandy loam, frequently flooded-----	90	Poor source OM < .5% Sand fractions 75 to 85% K factor < .10	0.00 0.50 0.99	Good source	
340: Rock outcrop, Lovejoy basalt-----	35	Not rated		Not rated	
Thermalrocks very gravelly loam---	25	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.50	Poor source Depth to bedrock < 40"	0.00
Campbellhills gravelly loam-----	20	Fair source AWC 3 - 6" to 60" depth Clay 27 to 40% pH between 4 and 6.5 above 40"	0.32 0.82 0.92	Poor source Saturation < 1' depth LEP 3 to 9 Depth to bedrock 40 to 60"	0.00 0.56 0.58
341: Elsely loam-----	25	Fair source pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth 25 to 50% fragments 3-10"	0.68 0.68 0.90	Poor source Depth to bedrock < 40" AASHTO GIN > 8 (low soil strength) Saturation from 1 to 3' 25 to 50% fragments >3"	0.00 0.00 0.06 0.90
Beatsonhollow gravelly loam-----	25	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40" 25 to 50% fragments 3-10"	0.00 0.50 0.70	Poor source Depth to bedrock < 40" Saturation < 1' depth AASHTO GIN 5 to 8 (soil strength) 25 to 50% fragments >3"	0.00 0.00 0.22 0.70
Campbellhills gravelly loam-----	20	Fair source AWC 3 - 6" to 60" depth Clay 27 to 40% pH between 4 and 6.5 above 40"	0.32 0.82 0.92	Poor source Saturation < 1' depth LEP 3 to 9 Depth to bedrock 40 to 60"	0.00 0.56 0.58
Rock outcrop, Lovejoy basalt-----	20	Not rated		Not rated	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
342:					
Thermalrocks very gravelly loam---	40	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.50	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.50
Beatsonhollow taxadjunct fine sandy loam-----	35	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.92	Poor source Depth to bedrock < 40" Saturation < 1' depth	0.00 0.00
Rock outcrop, Lovejoy basalt-----	15	Not rated		Not rated	
343:					
Coalcanyon very cobbly loam-----	50	Poor source Fragments 3-10" > 50% AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.54 0.92	Poor source AASHTO GIN > 8 (low soil strength) 25 to 50% fragments >3"	0.00 0.00
Coonhollow gravelly loam-----	35	Poor source Fragments 3-10" > 50% AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.01 0.68	Poor source Fragments >3" > 50% AASHTO GIN > 8 (low soil strength) Depth to bedrock 40 to 60"	0.00 0.00 0.16
344:					
Coalcanyon very cobbly loam-----	45	Poor source Fragments 3-10" > 50% AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.54 0.92	Poor source AASHTO GIN > 8 (low soil strength) 25 to 50% fragments >3" Slopes 15 to 25%	0.00 0.00 0.18
Coonhollow gravelly loam-----	30	Poor source Fragments 3-10" > 50% AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.01 0.68	Poor source Fragments >3" > 50% AASHTO GIN > 8 (low soil strength) Depth to bedrock 40 to 60" Slopes 15 to 25%	0.00 0.00 0.16 0.18
Rock outcrop, Lovejoy basalt-----	15	Not rated		Not rated	
346:					
Cherotable loam-----	50	Poor source Clay > 40% pH between 4 and 6.5 above 40"	0.00 0.50	Poor source AASHTO GIN > 8 (low soil strength) Depth to bedrock 40 to 60" LEP 3 to 9	0.00 0.16 0.38

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
346: Elsey loam-----	35	Fair source pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth 25 to 50% fragments 3-10"	0.68 0.68 0.90	Poor source Depth to bedrock < 40" AASHTO GIN > 8 (low soil strength) Saturation from 1 to 3' 25 to 50% fragments >3"	0.00 0.00 0.06 0.90
347: Haplic Palexeralfs loam-----	90	Poor source More than 15% fragments >10" AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.68 0.99	Fair source LEP 3 to 9	0.49
353: Cherokeespring gravelly silt loam	80	Fair source pH between 4 and 6.5 above 40" Clay 27 to 40%	0.68 0.92	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.54
355: Coalcanyon very cobbly loam-----	55	Poor source Fragments 3-10" > 50% AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.54 0.92	Poor source AASHTO GIN > 8 (low soil strength) 25 to 50% fragments >3" Slopes 15 to 25%	0.00 0.00 0.18
Talus-----	35	Not rated		Not rated	
356: Coalcanyon very cobbly loam-----	45	Poor source Fragments 3-10" > 50% AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.54 0.92	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) 25 to 50% fragments >3"	0.00 0.00 0.00
Rock outcrop, basalt cliffs-----	20	Not rated		Not rated	
Talus-----	20	Not rated		Not rated	
Coonhollow gravelly loam-----	10	Poor source Fragments 3-10" > 50% AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.01 0.68	Poor source Slopes > 25% Fragments >3" > 50% AASHTO GIN > 8 (low soil strength) Depth to bedrock 40 to 60"	0.00 0.00 0.00 0.16

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
360: Typic Xerofluvents, coarse-loamy--	45	Poor source WEG = 1 or 2 OM < .5% K factor .10 -.35	0.00 0.00 0.37	Good source	
Typic Xerofluvents, sandy-skeletal	40	Poor source Sand fractions > 85% WEG = 1 or 2 OM < .5% AWC < 3" to 60" depth	0.00 0.00 0.00 0.00	Good source	
361: Typic Xerofluvents, sandy-skeletal	85	Poor source Sand fractions > 85% WEG = 1 or 2 OM < .5% AWC < 3" to 60" depth	0.00 0.00 0.00 0.00	Good source	
362: Ultic Haploxeralfs, sandstone, low elevation, very deep-----	60	Poor source OM < .5% pH between 4 and 6.5 above 40" K factor < .10	0.00 0.84 0.99	Good source	
Ultic Haploxeralfs, sandstone, low elevation, deep-----	25	Poor source OM < .5% K factor .10 -.35 pH between 4 and 6.5 above 40"	0.00 0.68 0.99	Fair source Depth to bedrock 40 to 60"	0.01
363: Ultic Haploxeralfs, sandstone, low elevation, very deep-----	60	Poor source OM < .5% pH between 4 and 6.5 above 40" K factor < .10	0.00 0.84 0.99	Good source	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
363: Ultic Haploxeralfs, sandstone, low elevation, deep-----	30	Poor source OM < .5% K factor .10 -.35 pH between 4 and 6.5 above 40"	0.00 0.68 0.99	Fair source Depth to bedrock 40 to 60"	0.01
364: Ultic Haploxeralfs, sandstone, low elevation, deep-----	50	Poor source OM < .5% K factor .10 -.35 pH between 4 and 6.5 above 40"	0.00 0.68 0.99	Fair source Depth to bedrock 40 to 60" Slopes 15 to 25%	0.01 0.82
Ultic Haploxeralfs, sandstone, low elevation, very deep-----	40	Poor source OM < .5% pH between 4 and 6.5 above 40" K factor < .10	0.00 0.84 0.99	Fair source Slopes 15 to 25%	0.18
365: Palexerults gravelly loam-----	80	Poor source Clay > 40% pH between 4 and 6.5 above 40" OM .5 to 1% K factor < .10	0.00 0.08 0.68 0.99	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9 Slopes 15 to 25%	0.00 0.13 0.50
366: Palexerults gravelly loam-----	80	Poor source Clay > 40% pH between 4 and 6.5 above 40" OM .5 to 1% K factor < .10	0.00 0.08 0.68 0.99	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.13
370: Palexerults gravelly loam-----	80	Poor source Clay > 40% pH between 4 and 6.5 above 40" OM .5 to 1% K factor < .10	0.00 0.08 0.68 0.99	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.13

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
375: Wicks corner loam-----	80	Fair source Clay 27 to 40% pH between 4 and 6.5 above 40" OM .5 to 1%	0.32 0.84 0.92	Fair source LEP 3 to 9	0.43
376: Flagcanyon gravelly loam-----	50	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40" Depth to pan 20 to 40"	0.00 0.39 0.54	Poor source Depth to pan < 40" Saturation from 1 to 3' LEP 3 to 9 25 to 50% fragments >3"	0.00 0.59 0.84 0.99
Wicks corner loam-----	35	Fair source Clay 27 to 40% pH between 4 and 6.5 above 40" OM .5 to 1%	0.32 0.84 0.92	Fair source LEP 3 to 9	0.43
377: Flagcanyon taxadjunct fine sandy loam-----	55	Poor source OM < .5% AWC 3 - 6" to 60" depth Depth to pan 20 to 40" pH between 4 and 6.5 above 40"	0.00 0.13 0.65 0.92	Poor source Depth to pan < 40" Saturation from 1 to 3' LEP 3 to 9	0.00 0.07 0.26
Durixeralfs, clayey-skeletal, loam	20	Poor source Clay > 40% AWC < 3" to 60" depth OM < .5% Depth to pan < 20" pH between 4 and 6.5 above 40" K factor < .10	0.00 0.00 0.00 0.00 0.92 0.99	Poor source Saturation < 1' depth Depth to pan < 40" LEP 3 to 9	0.00 0.00 0.02
Duraquerts gravelly clay-----	15	Poor source Clay > 40% OM < .5% AWC 3 - 6" to 60" depth Depth to pan 20 to 40" pH between 4 and 6.5 above 40"	0.00 0.00 0.00 0.05 0.99	Poor source Saturation < 1' depth Depth to pan < 40" LEP > 9 AASHTO GIN > 8 (low soil strength)	0.00 0.00 0.00 0.00

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
400: Subaco taxadjunct clay-----	85	Poor source Clay > 40% Maximum pH > 8.5 SAR from 4 to 13 AWC 3 - 6" to 60" depth Depth to pan 20 to 40" Calcium carbonates 15 to 40% K factor < .10	0.00 0.00 0.78 0.90 0.90 0.95 0.99	Poor source Depth to pan < 40" LEP > 9 AASHTO GIN > 8 (low soil strength) Saturation from 1 to 3'	0.00 0.00 0.00 0.27
415: Ignord fine sandy loam-----	90	Good source		Good source	
416: Calcic Haploxerolls sandy loam---	90	Fair source SAR from 4 to 13 AWC 3 - 6" to 60" depth	0.22 0.97	Fair source Saturation from 1 to 3'	0.94
418: Almendra loam-----	85	Fair source pH between 4 and 6.5 above 40" K factor .10 -.35	0.84 0.90	Good source	
419: Conejo fine sandy loam, overwash--	85	Fair source Clay 27 to 40% K factor < .10	0.92 0.99	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.81
420: Conejo clay loam-----	85	Fair source Clay 27 to 40% K factor < .10	0.98 0.99	Fair source LEP 3 to 9	0.91
425: Vina fine sandy loam-----	85	Good source		Good source	
426: Vina loam-----	85	Good source		Good source	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
439: Oxyaquic Xerofluvents clay-----	85	Poor source Clay > 40% K factor .10 -.35	0.00 0.37	Poor source AASHTO GIN > 8 (low soil strength) LEP > 9 Saturation from 1 to 3'	0.00 0.00 0.53
440: Oxyaquic Xerofluvents silt loam, frequently flooded-----	80	Fair source K factor .10 -.35 pH between 4 and 6.5 above 40"	0.06 0.92	Fair source Saturation from 1 to 3'	0.89
441: Oxyaquic Xerofluvents very fine sandy loam-----	90	Fair source K factor .10 -.35 pH between 4 and 6.5 above 40"	0.06 0.92	Fair source Saturation from 1 to 3'	0.89
442: Durixerolls clay loam-----	55	Poor source OM < .5% Depth to pan 20 to 40" K factor .10 -.35 Clay 27 to 40%	0.00 0.80 0.90 0.98	Poor source Depth to pan < 40" AASHTO GIN > 8 (low soil strength) Saturation from 1 to 3' LEP 3 to 9	0.00 0.00 0.04 0.75
Haploxerolls clay loam-----	30	Good source		Poor source AASHTO GIN > 8 (low soil strength) Saturation from 1 to 3' Depth to pan 40-60"	0.00 0.89 0.98
443: Durixerolls loam-----	60	Fair source OM .5 to 1% Depth to pan 20 to 40" AWC 3 - 6" to 60" depth K factor .10 -.35	0.08 0.21 0.53 0.90	Poor source Depth to pan < 40" AASHTO GIN > 8 (low soil strength) Saturation from 1 to 3'	0.00 0.00 0.04
Haploxerolls loam-----	25	Fair source pH between 4 and 6.5 above 40" K factor < .10	0.92 0.99	Poor source AASHTO GIN > 8 (low soil strength) Depth to pan 40-60" Saturation from 1 to 3'	0.00 0.74 0.89

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
445: Chico loam-----	85	Fair source K factor .10 -.35	0.90	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.95
447: Charger fine sandy loam-----	80	Good source		Good source	
448: Haploxerolls clay loam-----	75	Fair source Clay 27 to 40% K factor .10 -.35	0.82 0.90	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.86
449: Haploxerolls loam-----	75	Fair source pH between 4 and 6.5 above 40" K factor .10 -.35	0.68 0.90	Fair source AASHTO GIN 5 to 8 (soil strength)	0.22
500: Lofgren clay-----	45	Poor source Clay > 40% OM .5 to 1% pH between 4 and 6.5 above 40"	0.00 0.35 0.39	Poor source LEP > 9 AASHTO GIN > 8 (low soil strength) Saturation from 1 to 3' Depth to pan 40-60"	0.00 0.00 0.24 0.29
Blavo clay-----	40	Poor source Clay > 40% AWC 3 - 6" to 60" depth Depth to pan 20 to 40" K factor < .10	0.00 0.90 0.94 0.99	Poor source Depth to pan < 40" LEP > 9 AASHTO GIN > 8 (low soil strength) Saturation from 1 to 3'	0.00 0.00 0.00 0.24
501: Lofgren clay, occasionally flooded-----	45	Poor source Clay > 40% OM .5 to 1% pH between 4 and 6.5 above 40"	0.00 0.32 0.92	Poor source LEP > 9 AASHTO GIN > 8 (low soil strength) Depth to pan 40-60" Saturation from 1 to 3'	0.00 0.00 0.16 0.24

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
501: Blavo clay, occasionally flooded--	40	Poor source Clay > 40%	0.00	Poor source Depth to pan < 40"	0.00
		OM .5 to 1%	0.32	LEP > 9	0.00
		AWC 3 - 6" to 60" depth	0.91	AASHTO GIN > 8 (low soil strength)	0.00
		Depth to pan 20 to 40"	0.94	Saturation from 1 to 3'	0.24
		K factor < .10	0.99		
502: Blavo silt loam, overwash, occasionally flooded-----	80	Poor source Clay > 40%	0.00	Poor source Depth to pan < 40"	0.00
		OM .5 to 1%	0.32	LEP > 9	0.00
		K factor .10 -.35	0.68	AASHTO GIN > 8 (low soil strength)	0.00
		AWC 3 - 6" to 60" depth	0.93	Saturation from 1 to 3'	0.24
		Depth to pan 20 to 40"	0.94		
519: Edjobe silty clay-----	85	Poor source Clay > 40%	0.00	Poor source AASHTO GIN > 8 (low soil strength)	0.00
		K factor .10 -.35	0.68	LEP 3 to 9	0.02
		OM .5 to 1%	0.92	Saturation from 1 to 3'	0.89
520: Esquon clay-----	60	Poor source Clay > 40%	0.00	Poor source AASHTO GIN > 8 (low soil strength)	0.00
		OM < .5%	0.00	LEP 3 to 9	0.01
		pH between 4 and 6.5 above 40"	0.08	Saturation from 1 to 3'	0.89
		K factor .10 -.35	0.90	Depth to pan 40-60"	0.95
Neerdobe clay-----	30	Poor source Clay > 40%	0.00	Poor source Depth to pan < 40"	0.00
		Maximum pH > 8.5	0.00	AASHTO GIN > 8 (low soil strength)	0.00
		K factor .10 -.35	0.37	LEP > 9	0.00
		OM .5 to 1%	0.84	Saturation from 1 to 3'	0.24
		pH between 4 and 6.5 above 40"	0.84		
		Depth to pan > 40"	0.99		
		AWC 3 - 6" to 60" depth	0.99		

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
521: Neerdobe silt loam, overwash-----	85	Poor source Clay > 40% K factor .10 -.35 pH between 4 and 6.5 above 40"	0.00 0.68 0.92	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9 Depth to pan 40-60" Saturation from 1 to 3'	0.00 0.27 0.29 0.89
522: Clear Lake silty clay loam, overwash-----	80	Poor source Clay > 40% OM .5 to 1% K factor < .10	0.00 0.92 0.99	Poor source Saturation < 1' depth AASHTO GIN > 8 (low soil strength) LEP > 9	0.00 0.00 0.00
523: Esquon silty clay loam, overwash--	80	Poor source Clay > 40% OM < .5% K factor .10 -.35	0.00 0.00 0.90	Poor source Saturation < 1' depth LEP > 9 AASHTO GIN > 8 (low soil strength) Depth to pan 40-60"	0.00 0.00 0.00 0.23
525: Govstanford loam-----	85	Poor source OM < .5% K factor .10 -.35 AWC 3 - 6" to 60" depth	0.00 0.37 0.96	Fair source Saturation from 1 to 3'	0.62
526: Govstanford loam, occasionally flooded-----	85	Poor source OM < .5% K factor .10 -.35 AWC 3 - 6" to 60" depth	0.00 0.37 0.96	Fair source Saturation from 1 to 3'	0.62
528: Neerdobe clay loam-----	90	Fair source Depth to pan 20 to 40" AWC 3 - 6" to 60" depth Clay 27 to 40%	0.14 0.35 0.50	Poor source Depth to pan < 40" LEP > 9 AASHTO GIN > 8 (low soil strength) Saturation from 1 to 3'	0.00 0.00 0.00 0.01

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
550: Dunstone loam, dry-----	60	Poor source AWC < 3" to 60" depth OM .5 to 1% pH between 4 and 6.5 above 40" K factor < .10	0.00 0.08 0.50 0.99	Poor source Depth to bedrock < 40" AASHTO GIN > 8 (low soil strength)	0.00 0.00
Loafercreek silt loam, dry-----	20	Fair source AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40" K factor < .10	0.63 0.80 0.99	Poor source Depth to bedrock < 40"	0.00
551: Dunstone loam, dry-----	35	Poor source AWC < 3" to 60" depth OM .5 to 1% pH between 4 and 6.5 above 40" K factor < .10	0.00 0.08 0.50 0.99	Poor source Depth to bedrock < 40" AASHTO GIN > 8 (low soil strength) Slopes 15 to 25%	0.00 0.00 0.18
Lomarica loam-----	15	Fair source AWC 3 - 6" to 60" depth Clay 27 to 40%	0.01 0.02	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.27
Argonaut taxadjunct loam-----	15	Poor source Clay > 40% AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.76 0.92	Poor source Depth to bedrock < 40" AASHTO GIN > 8 (low soil strength) Slopes 15 to 25% LEP 3 to 9	0.00 0.00 0.18 0.21
552: Dunstone gravelly loam-----	45	Poor source AWC < 3" to 60" depth OM < .5% pH between 4 and 6.5 above 40"	0.00 0.00 0.92	Poor source Depth to bedrock < 40"	0.00
Loafercreek gravelly loam-----	40	Fair source AWC 3 - 6" to 60" depth OM .5 to 1% pH between 4 and 6.5 above 40"	0.38 0.68 0.95	Poor source Depth to bedrock < 40"	0.00

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
553: Dunstone gravelly loam-----	45	Poor source AWC < 3" to 60" depth OM < .5% pH between 4 and 6.5 above 40"	0.00 0.00 0.92	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.18
Loafercreek gravelly loam-----	40	Fair source AWC 3 - 6" to 60" depth OM .5 to 1% pH between 4 and 6.5 above 40"	0.38 0.68 0.95	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.82
554: Dunstone gravelly loam-----	45	Poor source AWC < 3" to 60" depth OM < .5% pH between 4 and 6.5 above 40"	0.00 0.00 0.92	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Loafercreek gravelly loam-----	40	Fair source AWC 3 - 6" to 60" depth OM .5 to 1% pH between 4 and 6.5 above 40"	0.38 0.68 0.95	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
555: Dunstone gravelly loam-----	45	Poor source AWC < 3" to 60" depth OM < .5% pH between 4 and 6.5 above 40"	0.00 0.00 0.92	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Loafercreek gravelly loam-----	40	Fair source AWC 3 - 6" to 60" depth OM .5 to 1% pH between 4 and 6.5 above 40"	0.38 0.68 0.95	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
556: Mounthope loam-----	50	Poor source OM < .5% pH between 4 and 6.5 above 40"	0.00 0.97	Fair source Depth to bedrock 40 to 60" LEP 3 to 9	0.74 0.86
Hartsmill gravelly loam-----	40	Fair source 25 to 50% fragments 3-10" AWC 3 - 6" to 60" depth Clay 27 to 40% OM .5 to 1% pH between 4 and 6.5 above 40"	0.17 0.74 0.82 0.92 0.97	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9 25 to 50% fragments >3"	0.00 0.53 0.98

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
557: Mounthope loam-----	50	Poor source OM < .5% pH between 4 and 6.5 above 40"	0.00 0.97	Fair source Slopes 15 to 25% Depth to bedrock 40 to 60" LEP 3 to 9	0.18 0.74 0.86
Hartsmill gravelly loam-----	40	Fair source 25 to 50% fragments 3-10" AWC 3 - 6" to 60" depth Clay 27 to 40% OM .5 to 1% pH between 4 and 6.5 above 40"	0.17 0.74 0.82 0.92 0.97	Poor source AASHTO GIN > 8 (low soil strength) Slopes 15 to 25% LEP 3 to 9 25 to 50% fragments >3"	0.00 0.18 0.53 0.98
558: Hartsmill gravelly loam-----	55	Fair source 25 to 50% fragments 3-10" AWC 3 - 6" to 60" depth Clay 27 to 40% OM .5 to 1% pH between 4 and 6.5 above 40"	0.17 0.74 0.82 0.92 0.97	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9 25 to 50% fragments >3"	0.00 0.00 0.53 0.98
Mounthope loam-----	30	Poor source OM < .5% pH between 4 and 6.5 above 40"	0.00 0.97	Poor source Slopes > 25% Depth to bedrock 40 to 60" LEP 3 to 9	0.00 0.74 0.86
559: Hartsmill gravelly loam-----	55	Fair source 25 to 50% fragments 3-10" AWC 3 - 6" to 60" depth Clay 27 to 40% OM .5 to 1% pH between 4 and 6.5 above 40"	0.17 0.74 0.82 0.92 0.97	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9 25 to 50% fragments >3"	0.00 0.00 0.53 0.98
Mounthope loam-----	30	Poor source OM < .5% pH between 4 and 6.5 above 40"	0.00 0.97	Poor source Slopes > 25% Depth to bedrock 40 to 60" LEP 3 to 9	0.00 0.74 0.86

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
560: Hartsmill gravelly loam-----	50	Fair source 25 to 50% fragments 3-10" AWC 3 - 6" to 60" depth Clay 27 to 40% OM .5 to 1% pH between 4 and 6.5 above 40"	0.17 0.74 0.82 0.92 0.97	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9 25 to 50% fragments >3"	0.00 0.00 0.53 0.98
Mounthope loam-----	30	Poor source OM < .5% pH between 4 and 6.5 above 40"	0.00 0.97	Poor source Slopes > 25% Depth to bedrock 40 to 60" LEP 3 to 9	0.00 0.74 0.86
561: Bigridge loam-----	50	Poor source OM < .5% pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.00 0.74 0.78	Fair source Depth to bedrock 40 to 60"	0.65
Minniecreek loam-----	35	Fair source pH between 4 and 6.5 above 40" OM .5 to 1% K factor .10 -.35 AWC 3 - 6" to 60" depth	0.68 0.68 0.90 0.99	Poor source Depth to bedrock < 40" AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.66
562: Bigridge loam-----	50	Poor source OM < .5% pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.00 0.74 0.78	Fair source Slopes 15 to 25% Depth to bedrock 40 to 60"	0.18 0.65
Minniecreek loam-----	35	Fair source pH between 4 and 6.5 above 40" OM .5 to 1% K factor .10 -.35 AWC 3 - 6" to 60" depth	0.68 0.68 0.90 0.99	Poor source Depth to bedrock < 40" AASHTO GIN > 8 (low soil strength) Slopes 15 to 25% LEP 3 to 9	0.00 0.00 0.18 0.66
563: Bigridge loam-----	50	Poor source OM < .5% pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.00 0.74 0.78	Poor source Slopes > 25% Depth to bedrock 40 to 60"	0.00 0.65

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
563: Minniecreek loam-----	35	Fair source pH between 4 and 6.5 above 40" OM .5 to 1% K factor .10 -.35 AWC 3 - 6" to 60" depth	0.68 0.68 0.90 0.99	Poor source Depth to bedrock < 40" Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.00 0.66
564: Bigridge loam-----	50	Poor source OM < .5% pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.00 0.74 0.78	Poor source Slopes > 25% Depth to bedrock 40 to 60"	0.00 0.65
Minniecreek loam-----	35	Fair source pH between 4 and 6.5 above 40" OM .5 to 1% K factor .10 -.35 AWC 3 - 6" to 60" depth	0.68 0.68 0.90 0.99	Poor source Depth to bedrock < 40" Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.00 0.66
565: Dunstone loam, dry-----	35	Poor source AWC < 3" to 60" depth OM .5 to 1% pH between 4 and 6.5 above 40" K factor < .10	0.00 0.08 0.50 0.99	Poor source Depth to bedrock < 40" AASHTO GIN > 8 (low soil strength)	0.00 0.00
Argonaut taxadjunct loam-----	30	Poor source Clay > 40% AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.76 0.92	Poor source Depth to bedrock < 40" AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.21
Sunnyslope loam-----	20	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.99	Poor source Depth to bedrock < 40"	0.00
566: Dunstone loam, dry-----	45	Poor source AWC < 3" to 60" depth OM .5 to 1% pH between 4 and 6.5 above 40" K factor < .10	0.00 0.08 0.50 0.99	Poor source Depth to bedrock < 40" AASHTO GIN > 8 (low soil strength)	0.00 0.00

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
566: Loafercreek silt loam, dry-----	20	Fair source AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40" K factor < .10	0.63 0.80 0.99	Poor source Depth to bedrock < 40"	0.00
Katskillhill loam-----	15	Poor source Clay > 40% OM < .5% pH between 4 and 6.5 above 40"	0.00 0.00 0.50	Poor source AASHTO GIN > 8 (low soil strength) Depth to bedrock 40 to 60" LEP 3 to 9	0.00 0.04 0.08
567: Dunstone loam, dry-----	40	Poor source AWC < 3" to 60" depth OM .5 to 1% pH between 4 and 6.5 above 40" K factor < .10	0.00 0.08 0.50 0.99	Poor source Depth to bedrock < 40" AASHTO GIN > 8 (low soil strength)	0.00 0.00
Loafercreek silt loam, dry-----	25	Fair source AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40" K factor < .10	0.63 0.80 0.99	Poor source Depth to bedrock < 40"	0.00
Argonaut taxadjunct loam-----	20	Poor source Clay > 40% AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.76 0.92	Poor source Depth to bedrock < 40" AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.21
577: Parkshill coarse sandy loam-----	40	Poor source OM < .5% pH between 4 and 6.5 above 40"	0.00 0.92	Good source	
Flanly loam-----	25	Fair source AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40"	0.05 0.68	Poor source Depth to bedrock < 40"	0.00
Hurleton gravelly sandy loam-----	20	Poor source OM < .5% AWC < 3" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.00 0.80	Poor source Depth to bedrock < 40"	0.00

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
578:					
Flanly loam-----	45	Fair source AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40"	0.05 0.68	Poor source Depth to bedrock < 40"	0.00
Swedesflat cobbly fine sandy loam	35	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.95	Poor source Depth to bedrock < 40"	0.00
580:					
Surnuf taxadjunct loam-----	40	Poor source Clay > 40% 5 to 15% fragments >10" pH between 4 and 6.5 above 40"	0.00 0.37 0.68	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.18
Griffgulch very gravelly silt loam	25	Poor source Clay > 40% 5 to 15% fragments >10" AWC 3 - 6" to 60" depth 25 to 50% fragments 3-10" pH between 4 and 6.5 above 40"	0.00 0.00 0.47 0.82 0.88	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9 25 to 50% fragments >3" Depth to bedrock 40 to 60"	0.00 0.34 0.70 0.99
Rock outcrop, metavolcanic-----	20	Not rated		Not rated	
581:					
Surnuf taxadjunct loam-----	65	Poor source Clay > 40% 5 to 15% fragments >10" pH between 4 and 6.5 above 40"	0.00 0.37 0.68	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.18
Griffgulch very gravelly silt loam	20	Poor source Clay > 40% 5 to 15% fragments >10" AWC 3 - 6" to 60" depth 25 to 50% fragments 3-10" pH between 4 and 6.5 above 40"	0.00 0.00 0.47 0.82 0.88	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9 25 to 50% fragments >3" Depth to bedrock 40 to 60"	0.00 0.00 0.34 0.70 0.99
582:					
Surnuf taxadjunct loam-----	50	Poor source Clay > 40% 5 to 15% fragments >10" pH between 4 and 6.5 above 40"	0.00 0.37 0.68	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.18

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
582: Griffgulch very gravelly silt loam	35	Poor source Clay > 40% 5 to 15% fragments >10" AWC 3 - 6" to 60" depth 25 to 50% fragments 3-10" pH between 4 and 6.5 above 40"	0.00 0.00 0.47 0.82 0.88	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9 25 to 50% fragments >3" Depth to bedrock 40 to 60"	0.00 0.00 0.34 0.70 0.99
583: Surnuf taxadjunct loam-----	50	Poor source Clay > 40% 5 to 15% fragments >10" pH between 4 and 6.5 above 40"	0.00 0.37 0.68	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.18
Griffgulch very gravelly silt loam	35	Poor source Clay > 40% 5 to 15% fragments >10" AWC 3 - 6" to 60" depth 25 to 50% fragments 3-10" pH between 4 and 6.5 above 40"	0.00 0.00 0.47 0.82 0.88	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9 25 to 50% fragments >3" Depth to bedrock 40 to 60"	0.00 0.00 0.34 0.70 0.99
584: Flanly loam-----	35	Fair source AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40"	0.05 0.68	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.02
Swedesflat cobbly fine sandy loam	30	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.95	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.98
Rackerby very gravelly sandy loam	25	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.99	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.32
585: Flanly loam-----	45	Fair source AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40"	0.05 0.68	Poor source Depth to bedrock < 40"	0.00
Sommeyleft loam-----	35	Fair source pH between 4 and 6.5 above 40" K factor < .10	0.97 0.99	Fair source AASHTO GIN 5 to 8 (soil strength)	0.78

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
586: Sommeyleft loam-----	45	Fair source pH between 4 and 6.5 above 40" K factor < .10	0.97 0.99	Fair source AASHTO GIN 5 to 8 (soil strength) Slopes 15 to 25%	0.78 0.82
Mounthope loam-----	40	Poor source OM < .5% pH between 4 and 6.5 above 40"	0.00 0.97	Fair source Slopes 15 to 25% Depth to bedrock 40 to 60" LEP 3 to 9	0.18 0.74 0.86
587: Sommeyleft loam-----	35	Fair source pH between 4 and 6.5 above 40" K factor < .10	0.97 0.99	Poor source Slopes > 25% AASHTO GIN 5 to 8 (soil strength)	0.00 0.78
Mounthope loam-----	30	Poor source OM < .5% pH between 4 and 6.5 above 40"	0.00 0.97	Poor source Slopes > 25% Depth to bedrock 40 to 60" LEP 3 to 9	0.00 0.74 0.86
Hurleton gravelly sandy loam-----	25	Poor source OM < .5% AWC < 3" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.00 0.80	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
588: Ultic Haploxeralfs, thermic, high terrace-----	95	Poor source OM < .5% AWC < 3" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.00 0.68	Fair source Saturation from 1 to 3'	0.24
589: Ultic Haploxeralfs, thermic, high terrace-----	95	Poor source OM < .5% AWC < 3" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.00 0.68	Poor source Slopes > 25% Saturation from 1 to 3'	0.00 0.24

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
590:					
Vistarobles sandy loam-----	30	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Saturation < 1' depth	0.00
		Depth to pan < 20"	0.00	Depth to pan < 40"	0.00
		pH between 4 and 6.5 above 40"	0.92	AASHTO GIN > 8 (low soil strength)	0.00
				LEP 3 to 9	0.28
Redding loam-----	25	Poor source		Poor source	
		OM < .5%	0.00	Depth to pan < 40"	0.00
		Depth to pan 20 to 40"	0.90	Saturation from 1 to 3'	0.53
		AWC 3 - 6" to 60" depth	0.94	LEP 3 to 9	0.64
				AASHTO GIN 5 to 8 (soil strength)	0.78
Argonaut taxadjunct loam-----	20	Poor source		Poor source	
		Clay > 40%	0.00	Depth to bedrock < 40"	0.00
		AWC 3 - 6" to 60" depth	0.76	AASHTO GIN > 8 (low soil strength)	0.00
		pH between 4 and 6.5 above 40"	0.92	LEP 3 to 9	0.21
Haploxererts gravelly silty clay--	15	Poor source		Poor source	
		Clay > 40%	0.00	Saturation < 1' depth	0.00
		OM .5 to 1%	0.68	AASHTO GIN > 8 (low soil strength)	0.00
		AWC 3 - 6" to 60" depth	0.85	LEP > 9	0.00
		pH between 4 and 6.5 above 40"	0.97	Depth to bedrock 40 to 60"	0.01
603:					
Oroville gravelly fine sandy loam	30	Poor source		Poor source	
		OM < .5%	0.00	Depth to pan < 40"	0.00
		AWC < 3" to 60" depth	0.00	Saturation from 1 to 3'	0.01
		Depth to pan 20 to 40"	0.05	LEP 3 to 9	0.22
		pH between 4 and 6.5 above 40"	0.92		
Thermalito sandy loam-----	25	Poor source		Poor source	
		OM < .5%	0.00	Depth to pan < 40"	0.00
		AWC 3 - 6" to 60" depth	0.11	Saturation from 1 to 3'	0.02
		Depth to pan 20 to 40"	0.65	LEP 3 to 9	0.62
		pH between 4 and 6.5 above 40"	0.68		
Fernandez sandy loam-----	15	Poor source		Poor source	
		OM < .5%	0.00	AASHTO GIN > 8 (low soil strength)	0.00
		pH between 4 and 6.5 above 40"	0.92	LEP 3 to 9	0.40

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
603: Thompsonflat fine sandy loam-----	15	Poor source OM < .5% AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.54 0.92	Good source	
605: Duric Xerarents fine sandy loam, leveled-----	75	Poor source AWC < 3" to 60" depth Depth to pan < 20" OM < .5%	0.00 0.00 0.00	Poor source Saturation < 1' depth Depth to pan < 40"	0.00 0.00
Oroville gravelly fine sandy loam	20	Poor source OM < .5% AWC < 3" to 60" depth Depth to pan 20 to 40" pH between 4 and 6.5 above 40"	0.00 0.00 0.05 0.92	Poor source Depth to pan < 40" Saturation from 1 to 3' LEP 3 to 9	0.00 0.01 0.22
606: Redtough loam-----	45	Poor source AWC < 3" to 60" depth Depth to pan < 20" OM .5 to 1% pH between 4 and 6.5 above 40"	0.00 0.00 0.92 0.97	Poor source Saturation < 1' depth Depth to pan < 40" AASHTO GIN > 8 (low soil strength)	0.00 0.00 0.00
Fallager loam-----	30	Poor source Clay > 40% AWC < 3" to 60" depth Depth to pan < 20"	0.00 0.00 0.00	Poor source Saturation < 1' depth Depth to pan < 40" AASHTO GIN > 8 (low soil strength)	0.00 0.00 0.00
Anita, gravelly duripan-----	15	Poor source Clay > 40% AWC < 3" to 60" depth Depth to pan < 20" OM .5 to 1%	0.00 0.00 0.00 0.68	Poor source Saturation < 1' depth Depth to pan < 40" LEP > 9 AASHTO GIN > 8 (low soil strength)	0.00 0.00 0.00 0.00
609: Anita, gravelly duripan-----	50	Poor source Clay > 40% AWC < 3" to 60" depth Depth to pan < 20" OM .5 to 1%	0.00 0.00 0.00 0.68	Poor source Saturation < 1' depth Depth to pan < 40" LEP > 9 AASHTO GIN > 8 (low soil strength)	0.00 0.00 0.00 0.00

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
609: Tuscan taxadjunct gravelly clay loam-----	40	Poor source OM < .5% Clay 27 to 40% AWC 3 - 6" to 60" depth Depth to pan 20 to 40"	0.00 0.08 0.14 0.46	Poor source Saturation < 1' depth Depth to pan < 40" AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.00 0.35
614: Doemill gravelly loam-----	50	Poor source AWC < 3" to 60" depth OM .5 to 1% pH between 4 and 6.5 above 40"	0.00 0.23 0.95	Poor source Depth to bedrock < 40" Saturation < 1' depth	0.00 0.00
Jokerst very cobbly loam-----	40	Poor source AWC < 3" to 60" depth 5 to 15% fragments >10" pH between 4 and 6.5 above 40"	0.00 0.25 0.96	Poor source Depth to bedrock < 40" Saturation < 1' depth	0.00 0.00
615: Doemill gravelly loam-----	50	Poor source AWC < 3" to 60" depth OM .5 to 1% pH between 4 and 6.5 above 40"	0.00 0.23 0.95	Poor source Depth to bedrock < 40" Saturation < 1' depth	0.00 0.00
Jokerst very cobbly loam-----	40	Poor source AWC < 3" to 60" depth 5 to 15% fragments >10" pH between 4 and 6.5 above 40"	0.00 0.25 0.96	Poor source Depth to bedrock < 40" Saturation < 1' depth	0.00 0.00
616: Jokerst very cobbly loam-----	35	Poor source AWC < 3" to 60" depth 5 to 15% fragments >10" pH between 4 and 6.5 above 40"	0.00 0.25 0.96	Poor source Depth to bedrock < 40" Saturation < 1' depth	0.00 0.00
Doemill gravelly loam-----	35	Poor source AWC < 3" to 60" depth OM .5 to 1% pH between 4 and 6.5 above 40"	0.00 0.23 0.95	Poor source Depth to bedrock < 40" Saturation from 1 to 3'	0.00 0.00

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
616: Typic Haploxeralfs gravelly loam--	15	Poor source OM < .5% AWC 3 - 6" to 60" depth Clay 27 to 40%	0.00 0.63 0.92	Fair source LEP 3 to 9	0.60
617: Doemill gravelly loam-----	35	Poor source AWC < 3" to 60" depth OM .5 to 1% pH between 4 and 6.5 above 40"	0.00 0.23 0.95	Poor source Depth to bedrock < 40" Saturation from 1 to 3' Slopes 15 to 25%	0.00 0.01 0.82
Jokerst very cobbly loam-----	30	Poor source AWC < 3" to 60" depth 5 to 15% fragments >10" pH between 4 and 6.5 above 40"	0.00 0.25 0.96	Poor source Depth to bedrock < 40" Saturation < 1' depth Slopes 15 to 25%	0.00 0.00 0.82
Typic Haploxeralfs gravelly loam--	20	Poor source OM < .5% AWC 3 - 6" to 60" depth Clay 27 to 40%	0.00 0.63 0.92	Poor source Slopes > 25% LEP 3 to 9	0.00 0.60
619: Carhart taxadjunct clay-----	90	Poor source Clay > 40% AWC < 3" to 60" depth	0.00 0.00	Poor source Depth to bedrock < 40" Saturation < 1' depth AASHTO GIN > 8 (low soil strength) LEP > 9	0.00 0.00 0.00 0.00
620: Doemill gravelly loam-----	40	Poor source AWC < 3" to 60" depth OM .5 to 1% pH between 4 and 6.5 above 40"	0.00 0.23 0.95	Poor source Depth to bedrock < 40" Saturation < 1' depth	0.00 0.00
Jokerst very cobbly loam-----	25	Poor source AWC < 3" to 60" depth 5 to 15% fragments >10" pH between 4 and 6.5 above 40"	0.00 0.25 0.96	Poor source Depth to bedrock < 40" Saturation < 1' depth	0.00 0.00

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
620: Ultic Haploxeralfs, thermic, gravelly loam-----	20	Poor source More than 15% fragments >10" AWC 3 - 6" to 60" depth 25 to 50% fragments 3-10" OM .5 to 1% pH between 4 and 6.5 above 40" Clay 27 to 40%	0.00 0.00 0.46 0.82 0.92 0.98	Poor source Depth to bedrock < 40" AASHTO GIN > 8 (low soil strength) 25 to 50% fragments >3" LEP 3 to 9 Saturation from 1 to 3'	0.00 0.00 0.46 0.61 0.86
621: Doemill gravelly loam-----	30	Poor source AWC < 3" to 60" depth OM .5 to 1% pH between 4 and 6.5 above 40"	0.00 0.23 0.95	Poor source Depth to bedrock < 40" Saturation from 1 to 3'	0.00 0.00
Jokerst very cobbly loam-----	30	Poor source AWC < 3" to 60" depth 5 to 15% fragments >10" pH between 4 and 6.5 above 40"	0.00 0.25 0.96	Poor source Depth to bedrock < 40" Saturation < 1' depth	0.00 0.00
Ultic Haploxeralfs, thermic, gravelly loam-----	20	Poor source More than 15% fragments >10" AWC 3 - 6" to 60" depth 25 to 50% fragments 3-10" OM .5 to 1% pH between 4 and 6.5 above 40" Clay 27 to 40%	0.00 0.00 0.46 0.82 0.92 0.98	Poor source Depth to bedrock < 40" AASHTO GIN > 8 (low soil strength) 25 to 50% fragments >3" LEP 3 to 9 Saturation from 1 to 3'	0.00 0.00 0.46 0.61 0.89
622: Xerorthents, shallow-----	40	Poor source AWC < 3" to 60" depth Clay 27 to 40%	0.00 0.68	Poor source Depth to bedrock < 40" Slopes > 25% AASHTO GIN 5 to 8 (soil strength)	0.00 0.00 0.22
Typic Haploxeralfs gravelly loam--	30	Poor source OM < .5% AWC 3 - 6" to 60" depth Clay 27 to 40%	0.00 0.63 0.92	Poor source Slopes > 25% Depth to bedrock 40 to 60" LEP 3 to 9	0.00 0.00 0.60
Rock outcrop, mudflow-breccia cliffs-----	15	Not rated		Not rated	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
623: Xerorthents, shallow-----	40	Poor source AWC < 3" to 60" depth Clay 27 to 40%	0.00 0.68	Poor source Depth to bedrock < 40" Slopes > 25% AASHTO GIN 5 to 8 (soil strength)	0.00 0.00 0.22
Typic Haploxeralfs gravelly loam--	25	Poor source OM < .5% AWC 3 - 6" to 60" depth Clay 27 to 40%	0.00 0.63 0.92	Poor source Slopes > 25% Depth to bedrock 40 to 60" LEP 3 to 9	0.00 0.00 0.60
Rock outcrop, mudflow-breccia cliffs-----	20	Not rated		Not rated	
624: Ultic Haploxeralfs, mesic, gravelly loam-----	60	Poor source More than 15% fragments >10" AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40" Clay 27 to 40% 25 to 50% fragments 3-10"	0.00 0.17 0.95 0.98 0.98	Poor source AASHTO GIN > 8 (low soil strength) Depth to bedrock 40 to 60" LEP 3 to 9 25 to 50% fragments >3"	0.00 0.04 0.59 0.99
Rockstripe very gravelly loam-----	25	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.96	Poor source Depth to bedrock < 40"	0.00
625: Ultic Haploxeralfs, mesic, gravelly loam-----	50	Poor source More than 15% fragments >10" AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40" Clay 27 to 40% 25 to 50% fragments 3-10"	0.00 0.17 0.95 0.98 0.98	Poor source AASHTO GIN > 8 (low soil strength) Depth to bedrock 40 to 60" LEP 3 to 9 Slopes 15 to 25% 25 to 50% fragments >3"	0.00 0.04 0.59 0.92 0.99
Rockstripe very gravelly loam-----	35	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.96	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.82

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
626: Ultic Haploxeralfs gravelly loam--	40	Fair source Clay 27 to 40%	0.50	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9 Depth to bedrock 40 to 60"	0.00 0.00 0.37 0.39
Rockstripe very gravelly loam----	35	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.96	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Rock outcrop, mudflow-breccia cliffs-----	15	Not rated		Not rated	
627: Ultic Haploxeralfs gravelly loam--	40	Fair source Clay 27 to 40%	0.50	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9 Depth to bedrock 40 to 60"	0.00 0.00 0.37 0.39
Rockstripe very gravelly loam----	35	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.96	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Rock outcrop, mudflow-breccia cliffs-----	15	Not rated		Not rated	
628: Rockstripe very gravelly loam----	40	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.96	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Ultic Haploxeralfs gravelly loam--	35	Fair source Clay 27 to 40%	0.50	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9 Depth to bedrock 40 to 60"	0.00 0.00 0.37 0.39
Rock outcrop, mudflow-breccia cliffs-----	20	Not rated		Not rated	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
629: Slideland gravelly loam-----	80	Fair source OM .5 to 1% Clay 27 to 40% pH between 4 and 6.5 above 40"	0.08 0.32 0.99	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.51
630: Slideland gravelly loam-----	80	Fair source OM .5 to 1% Clay 27 to 40% pH between 4 and 6.5 above 40"	0.08 0.32 0.99	Poor source AASHTO GIN > 8 (low soil strength) Slopes 15 to 25% LEP 3 to 9	0.00 0.50 0.51
631: Slideland gravelly loam-----	80	Fair source OM .5 to 1% Clay 27 to 40% pH between 4 and 6.5 above 40"	0.08 0.32 0.99	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.51
632: Ultic Haploxeralfs, conglomerate, very deep-----	50	Fair source Clay 27 to 40%	0.32	Fair source LEP 3 to 9	0.54
Ultic Haploxeralfs, conglomerate, moderately deep-----	40	Poor source AWC < 3" to 60" depth 25 to 50% fragments 3-10" pH between 4 and 6.5 above 40"	0.00 0.69 0.96	Poor source Depth to bedrock < 40" 25 to 50% fragments >3" LEP 3 to 9	0.00 0.69 0.83
633: Ultic Haploxeralfs, conglomerate, very deep-----	60	Fair source Clay 27 to 40%	0.32	Fair source Slopes 15 to 25% LEP 3 to 9	0.50 0.54
Ultic Haploxeralfs, conglomerate, moderately deep-----	30	Poor source AWC < 3" to 60" depth 25 to 50% fragments 3-10" pH between 4 and 6.5 above 40"	0.00 0.69 0.96	Poor source Depth to bedrock < 40" Slopes 15 to 25% 25 to 50% fragments >3" LEP 3 to 9	0.00 0.50 0.69 0.83

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
634: Ultic Haploxeralfs, conglomerate, very deep-----	60	Fair source Clay 27 to 40%	0.32	Poor source Slopes > 25% LEP 3 to 9	0.00 0.54
Ultic Haploxeralfs, conglomerate, moderately deep-----	30	Poor source AWC < 3" to 60" depth 25 to 50% fragments 3-10" pH between 4 and 6.5 above 40"	0.00 0.69 0.96	Poor source Depth to bedrock < 40" Slopes > 25% 25 to 50% fragments >3" LEP 3 to 9	0.00 0.00 0.69 0.83
635: Ultic Haploxeralfs, conglomerate, very deep-----	50	Fair source Clay 27 to 40%	0.32	Poor source Slopes > 25% LEP 3 to 9	0.00 0.54
Ultic Haploxeralfs, conglomerate, moderately deep-----	40	Poor source AWC < 3" to 60" depth 25 to 50% fragments 3-10" pH between 4 and 6.5 above 40"	0.00 0.69 0.96	Poor source Depth to bedrock < 40" Slopes > 25% 25 to 50% fragments >3" LEP 3 to 9	0.00 0.00 0.69 0.83
636: Ultic Haploxeralfs, conglomerate, moderately deep-----	50	Poor source AWC < 3" to 60" depth 25 to 50% fragments 3-10" pH between 4 and 6.5 above 40"	0.00 0.69 0.96	Poor source Depth to bedrock < 40" Slopes > 25% 25 to 50% fragments >3" LEP 3 to 9	0.00 0.00 0.69 0.83
Ultic Haploxeralfs, conglomerate, very deep-----	40	Fair source Clay 27 to 40%	0.32	Poor source Slopes > 25% LEP 3 to 9	0.00 0.54
637: Ultic Haploxeralfs, sandstone-----	80	Poor source OM < .5% AWC 3 - 6" to 60" depth	0.00 0.74	Good source	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
638: Ultic Haploxeralfs, sandstone-----	80	Poor source OM < .5% AWC 3 - 6" to 60" depth	0.00 0.74	Fair source Slopes 15 to 25%	0.18
639: Ultic Haploxeralfs, sandstone-----	75	Poor source OM < .5% AWC 3 - 6" to 60" depth	0.00 0.74	Poor source Slopes > 25%	0.00
640: Ultic Haploxeralfs, sandstone-----	75	Poor source OM < .5% AWC 3 - 6" to 60" depth	0.00 0.74	Poor source Slopes > 25%	0.00
641: Ultic Haploxeralfs, sandstone-----	75	Poor source OM < .5% AWC 3 - 6" to 60" depth	0.00 0.74	Poor source Slopes > 25%	0.00
642: Chinacamp gravelly loam-----	70	Poor source More than 15% fragments >10" Clay 27 to 40%	0.00 0.68	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.53
643: Chinacamp gravelly loam-----	70	Poor source More than 15% fragments >10" Clay 27 to 40%	0.00 0.68	Poor source AASHTO GIN > 8 (low soil strength) Slopes 15 to 25% LEP 3 to 9	0.00 0.50 0.53
644: Chinacamp gravelly loam-----	70	Poor source More than 15% fragments >10" Clay 27 to 40%	0.00 0.68	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.53
645: Chinacamp gravelly loam-----	70	Poor source More than 15% fragments >10" Clay 27 to 40%	0.00 0.68	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.53

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
646: Coalcanyon taxadjunct very gravelly loam-----	80	Fair source		Fair source	
		25 to 50% fragments 3-10"	0.68	LEP 3 to 9	0.54
		OM .5 to 1%	0.68	25 to 50% fragments >3"	0.70
		Clay 27 to 40%	0.82		
647: Coalcanyon taxadjunct very gravelly loam-----	75	Fair source		Fair source	
		25 to 50% fragments 3-10"	0.68	LEP 3 to 9	0.54
		OM .5 to 1%	0.68	25 to 50% fragments >3"	0.70
		Clay 27 to 40%	0.82		
648: Coalcanyon taxadjunct very gravelly loam-----	80	Fair source		Poor source	
		25 to 50% fragments 3-10"	0.68	Slopes > 25%	0.00
		OM .5 to 1%	0.68	LEP 3 to 9	0.54
		Clay 27 to 40%	0.82	25 to 50% fragments >3"	0.70
649: Coalcanyon taxadjunct very gravelly loam-----	75	Fair source		Poor source	
		25 to 50% fragments 3-10"	0.68	Slopes > 25%	0.00
		OM .5 to 1%	0.68	LEP 3 to 9	0.54
		Clay 27 to 40%	0.82	25 to 50% fragments >3"	0.70
650: Schott very gravelly loam-----	65	Fair source		Fair source	
		AWC 3 - 6" to 60" depth	0.03	Depth to bedrock 40 to 60"	0.58
		5 to 15% fragments >10"	0.06	LEP 3 to 9	0.70
		25 to 50% fragments 3-10"	0.57	25 to 50% fragments >3"	0.72
		Clay 27 to 40%	0.92		
		pH between 4 and 6.5 above 40"	0.97		
651: Schott very gravelly loam-----	65	Fair source		Poor source	
		AWC 3 - 6" to 60" depth	0.03	Slopes > 25%	0.00
		5 to 15% fragments >10"	0.06	Depth to bedrock 40 to 60"	0.58
		25 to 50% fragments 3-10"	0.57	LEP 3 to 9	0.70
		Clay 27 to 40%	0.92	25 to 50% fragments >3"	0.72
		pH between 4 and 6.5 above 40"	0.97		

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
652: Schott very gravelly loam-----	65	Fair source		Poor source	
		AWC 3 - 6" to 60" depth	0.03	Slopes > 25%	0.00
		5 to 15% fragments >10"	0.06	Depth to bedrock 40 to 60"	0.58
		25 to 50% fragments 3-10"	0.57	LEP 3 to 9	0.70
		Clay 27 to 40%	0.92	25 to 50% fragments >3"	0.72
		pH between 4 and 6.5 above 40"	0.97		
Rock outcrop, mudflow breccia-----	20	Not rated		Not rated	
654: Coridge bouldery loam-----	70	Poor source		Poor source	
		OM < .5%	0.00	Depth to bedrock < 40"	0.00
		5 to 15% fragments >10"	0.00	AASHTO GIN > 8 (low soil strength)	0.00
		AWC 3 - 6" to 60" depth	0.00	Saturation from 1 to 3'	0.22
		Clay 27 to 40%	0.50	LEP 3 to 9	0.44
		pH between 4 and 6.5 above 40"	0.92		
Rock outcrop, Cohasset basalt-----	20	Not rated		Not rated	
655: Coridge bouldery loam-----	70	Poor source		Poor source	
		OM < .5%	0.00	Depth to bedrock < 40"	0.00
		5 to 15% fragments >10"	0.00	AASHTO GIN > 8 (low soil strength)	0.00
		AWC 3 - 6" to 60" depth	0.00	LEP 3 to 9	0.44
		Clay 27 to 40%	0.50	Saturation from 1 to 3'	0.50
		pH between 4 and 6.5 above 40"	0.92		
Rock outcrop, Cohasset basalt-----	20	Not rated		Not rated	
656: Rock outcrop, basalt cliffs-----	40	Not rated		Not rated	
Coalcanyon taxadjunct very gravelly loam-----	40	Fair source		Poor source	
		25 to 50% fragments 3-10"	0.68	Slopes > 25%	0.00
		OM .5 to 1%	0.68	LEP 3 to 9	0.54
		Clay 27 to 40%	0.82	25 to 50% fragments >3"	0.70
657: Bonneyridge sandy loam-----	35	Fair source		Good source	
		pH between 4 and 6.5 above 40"	0.74		
		AWC 3 - 6" to 60" depth	0.99		

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
657: Chawanakee gravelly sandy loam----	30	Poor source AWC < 3" to 60" depth OM < .5% pH between 4 and 6.5 above 40" K factor < .10	0.00 0.00 0.68 0.99	Poor source Depth to bedrock < 40"	0.00
Rock outcrop, quartz diorite-----	20	Not rated		Not rated	
658: Bonneyridge sandy loam-----	35	Fair source pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.74 0.99	Fair source Slopes 15 to 25%	0.50
Chawanakee gravelly sandy loam----	30	Poor source AWC < 3" to 60" depth OM < .5% pH between 4 and 6.5 above 40" K factor < .10	0.00 0.00 0.68 0.99	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.50
Rock outcrop, quartz diorite-----	25	Not rated		Not rated	
659: Bonneyridge sandy loam-----	35	Fair source pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.74 0.99	Poor source Slopes > 25%	0.00
Chawanakee gravelly sandy loam----	30	Poor source AWC < 3" to 60" depth OM < .5% pH between 4 and 6.5 above 40" K factor < .10	0.00 0.00 0.68 0.99	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Rock outcrop, quartz diorite-----	25	Not rated		Not rated	
660: Bonneyridge sandy loam-----	30	Fair source pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.74 0.99	Poor source Slopes > 25%	0.00

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
660: Chawanakee gravelly sandy loam----	30	Poor source AWC < 3" to 60" depth OM < .5% pH between 4 and 6.5 above 40" K factor < .10	0.00 0.00 0.68 0.99	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Rock outcrop, quartz diorite-----	30	Not rated		Not rated	
661: Millerridge gravelly sandy clay loam-----	45	Fair source AWC 3 - 6" to 60" depth Clay 27 to 40% 5 to 15% fragments >10"	0.32 0.32 0.50	Poor source Depth to bedrock < 40" AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.42
Boxrobber cobbly sandy clay loam--	40	Poor source AWC < 3" to 60" depth Clay 27 to 40% 25 to 50% fragments 3-10"	0.00 0.50 0.98	Poor source Depth to bedrock < 40" LEP 3 to 9	0.00 0.53
662: Millerridge gravelly sandy clay loam-----	45	Fair source AWC 3 - 6" to 60" depth Clay 27 to 40% 5 to 15% fragments >10"	0.32 0.32 0.50	Poor source Depth to bedrock < 40" AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.42
Boxrobber cobbly sandy clay loam--	40	Poor source AWC < 3" to 60" depth Clay 27 to 40% 25 to 50% fragments 3-10"	0.00 0.50 0.98	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.53
663: Millerridge gravelly sandy clay loam-----	45	Fair source AWC 3 - 6" to 60" depth Clay 27 to 40% 5 to 15% fragments >10"	0.32 0.32 0.50	Poor source Depth to bedrock < 40" Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.00 0.42

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
663: Boxrobber cobbly sandy clay loam--	40	Poor source AWC < 3" to 60" depth Clay 27 to 40% 25 to 50% fragments 3-10"	0.00 0.50 0.98	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.53
664: Millerridge gravelly sandy clay loam-----	45	Fair source AWC 3 - 6" to 60" depth Clay 27 to 40% 5 to 15% fragments >10"	0.32 0.32 0.50	Poor source Depth to bedrock < 40" Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.00 0.42
Boxrobber cobbly sandy clay loam--	40	Poor source AWC < 3" to 60" depth Clay 27 to 40% 25 to 50% fragments 3-10"	0.00 0.50 0.98	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.53
665: Surnuf gravelly loam-----	40	Poor source Clay > 40% pH between 4 and 6.5 above 40"	0.00 0.96	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.23
Bigridge loam-----	40	Poor source OM < .5% pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.00 0.74 0.78	Fair source Depth to bedrock 40 to 60"	0.65
666: Surnuf gravelly loam-----	40	Poor source Clay > 40% pH between 4 and 6.5 above 40"	0.00 0.96	Poor source AASHTO GIN > 8 (low soil strength) Slopes 15 to 25% LEP 3 to 9	0.00 0.18 0.23
Bigridge loam-----	40	Poor source OM < .5% pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.00 0.74 0.78	Fair source Slopes 15 to 25% Depth to bedrock 40 to 60"	0.18 0.65

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
667: Surnuf gravelly loam-----	40	Poor source Clay > 40% pH between 4 and 6.5 above 40"	0.00 0.96	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.23
Bigridge loam-----	40	Poor source OM < .5% pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.00 0.74 0.78	Poor source Slopes > 25% Depth to bedrock 40 to 60"	0.00 0.65
668: Surnuf gravelly loam-----	40	Poor source Clay > 40% pH between 4 and 6.5 above 40"	0.00 0.96	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.23
Bigridge loam-----	40	Poor source OM < .5% pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.00 0.74 0.78	Poor source Slopes > 25% Depth to bedrock 40 to 60"	0.00 0.65
669: Oroshore gravelly loam-----	35	Fair source AWC 3 - 6" to 60" depth Clay 27 to 40% 25 to 50% fragments 3-10"	0.28 0.82 0.97	Poor source Depth to bedrock < 40" AASHTO GIN > 8 (low soil strength) LEP 3 to 9 25 to 50% fragments >3"	0.00 0.00 0.49 0.97
Mounthope loam-----	25	Poor source OM < .5% pH between 4 and 6.5 above 40"	0.00 0.97	Fair source Depth to bedrock 40 to 60" LEP 3 to 9	0.74 0.86
Dunstone gravelly loam-----	20	Poor source AWC < 3" to 60" depth OM < .5% pH between 4 and 6.5 above 40"	0.00 0.00 0.92	Poor source Depth to bedrock < 40"	0.00

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
670:					
Oroshore gravelly loam-----	35	Fair source		Poor source	
		AWC 3 - 6" to 60" depth	0.28	Depth to bedrock < 40"	0.00
		Clay 27 to 40%	0.82	AASHTO GIN > 8 (low soil strength)	0.00
		25 to 50% fragments 3-10"	0.97	LEP 3 to 9	0.49
				Slopes 15 to 25%	0.50
				25 to 50% fragments >3"	0.97
Mounthope loam-----	25	Poor source		Fair source	
		OM < .5%	0.00	Slopes 15 to 25%	0.50
		pH between 4 and 6.5 above 40"	0.97	Depth to bedrock 40 to 60"	0.74
				LEP 3 to 9	0.86
Dunstone gravelly loam-----	20	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM < .5%	0.00	Slopes 15 to 25%	0.50
		pH between 4 and 6.5 above 40"	0.92		
671:					
Oroshore gravelly loam-----	35	Fair source		Poor source	
		AWC 3 - 6" to 60" depth	0.28	Depth to bedrock < 40"	0.00
		Clay 27 to 40%	0.82	Slopes > 25%	0.00
		25 to 50% fragments 3-10"	0.97	AASHTO GIN > 8 (low soil strength)	0.00
				LEP 3 to 9	0.49
				25 to 50% fragments >3"	0.97
Mounthope loam-----	25	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		pH between 4 and 6.5 above 40"	0.97	Depth to bedrock 40 to 60"	0.74
				LEP 3 to 9	0.86
Dunstone gravelly loam-----	20	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM < .5%	0.00	Slopes > 25%	0.00
		pH between 4 and 6.5 above 40"	0.92		
672:					
Oroshore gravelly loam-----	30	Fair source		Poor source	
		AWC 3 - 6" to 60" depth	0.28	Depth to bedrock < 40"	0.00
		Clay 27 to 40%	0.82	Slopes > 25%	0.00
		25 to 50% fragments 3-10"	0.97	AASHTO GIN > 8 (low soil strength)	0.00
				LEP 3 to 9	0.49
				25 to 50% fragments >3"	0.97

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
672: Mounthope loam-----	25	Poor source OM < .5% pH between 4 and 6.5 above 40"	0.00 0.97	Poor source Slopes > 25% Depth to bedrock 40 to 60" LEP 3 to 9	0.00 0.74 0.86
Dunstone gravelly loam-----	25	Poor source AWC < 3" to 60" depth OM < .5% pH between 4 and 6.5 above 40"	0.00 0.00 0.92	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
674: Chawanakee gravelly sandy loam----	30	Poor source AWC < 3" to 60" depth OM < .5% pH between 4 and 6.5 above 40" K factor < .10	0.00 0.00 0.68 0.99	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Bonneyridge sandy loam-----	30	Fair source pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.74 0.99	Poor source Slopes > 25%	0.00
Rock outcrop, quartz diorite-----	30	Not rated		Not rated	
675: Clearhayes sandy clay loam-----	70	Poor source OM < .5% AWC 3 - 6" to 60" depth Sand fractions 75 to 85% 25 to 50% fragments 3-10"	0.00 0.00 0.56 0.94	Fair source Saturation from 1 to 3' Depth to bedrock 40 to 60" 25 to 50% fragments >3"	0.18 0.23 0.99
Hamslough clay-----	15	Poor source Clay > 40% AWC < 3" to 60" depth Depth to pan 20 to 40"	0.00 0.00 0.29	Poor source Saturation < 1' depth Depth to pan < 40" LEP > 9	0.00 0.00 0.00
676: Carhart clay-----	50	Poor source Clay > 40% AWC 3 - 6" to 60" depth OM .5 to 1%	0.00 0.54 0.68	Poor source Depth to bedrock < 40" LEP > 9 AASHTO GIN > 8 (low soil strength) Saturation from 1 to 3'	0.00 0.00 0.00 0.06

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
676: Anita taxadjunct clay-----	40	Poor source Clay > 40% AWC < 3" to 60" depth OM .5 to 1%	0.00 0.00 0.68	Poor source Depth to bedrock < 40" Saturation < 1' depth LEP > 9 AASHTO GIN > 8 (low soil strength)	0.00 0.00 0.00 0.00
677: Tuscan gravelly loam-----	40	Poor source AWC < 3" to 60" depth Depth to pan < 20" Clay > 40% OM < .5%	0.00 0.00 0.00 0.00	Poor source Depth to bedrock < 40" Saturation < 1' depth Depth to pan < 40" AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.00 0.00 0.02
Fallager loam-----	25	Poor source Clay > 40% AWC < 3" to 60" depth Depth to pan < 20"	0.00 0.00 0.00	Poor source Depth to bedrock < 40" Saturation < 1' depth Depth to pan < 40" AASHTO GIN > 8 (low soil strength)	0.00 0.00 0.00 0.00
Anita, gravelly duripan-----	15	Poor source Clay > 40% AWC < 3" to 60" depth Depth to pan < 20" OM .5 to 1%	0.00 0.00 0.00 0.68	Poor source Depth to bedrock < 40" Saturation < 1' depth Depth to pan < 40" LEP > 9 AASHTO GIN > 8 (low soil strength)	0.00 0.00 0.00 0.00 0.00
679: Lucksev loam-----	40	Poor source AWC < 3" to 60" depth Clay > 40% OM < .5%	0.00 0.00 0.00	Poor source Depth to bedrock < 40" Saturation < 1' depth AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.00 0.17
Butteside gravelly loam-----	35	Poor source Clay > 40% OM < .5% AWC 3 - 6" to 60" depth	0.00 0.00 0.33	Poor source Depth to bedrock < 40" AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.07

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
679: Carhart clay-----	15	Poor source Clay > 40% AWC 3 - 6" to 60" depth OM .5 to 1%	0.00 0.54 0.68	Poor source Depth to bedrock < 40" LEP > 9 AASHTO GIN > 8 (low soil strength) Saturation from 1 to 3'	0.00 0.00 0.00 0.06
680: Lucksev loam-----	45	Poor source AWC < 3" to 60" depth Clay > 40% OM < .5%	0.00 0.00 0.00	Poor source Depth to bedrock < 40" Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.00 0.17
Butteside gravelly loam-----	40	Poor source Clay > 40% OM < .5% AWC 3 - 6" to 60" depth	0.00 0.00 0.33	Poor source Depth to bedrock < 40" Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.00 0.07
683: Typic Haploxeralfs, magnesian, low elevation-----	50	Poor source AWC < 3" to 60" depth Clay 27 to 40% Fragments 3-10" < 25%	0.00 0.50 0.99	Poor source Depth to bedrock < 40" AASHTO GIN > 8 (low soil strength) LEP 3 to 9 25 to 50% fragments >3"	0.00 0.00 0.39 0.99
Earlial very gravelly loam-----	20	Poor source AWC < 3" to 60" depth Clay 27 to 40% 25 to 50% fragments 3-10"	0.00 0.18 0.57	Poor source Depth to bedrock < 40" LEP 3 to 9 25 to 50% fragments >3"	0.00 0.33 0.57
Rock outcrop, serpentinite-----	15	Not rated		Not rated	
684: Typic Haploxeralfs, magnesian, low elevation-----	50	Poor source AWC < 3" to 60" depth Clay 27 to 40% Fragments 3-10" < 25%	0.00 0.50 0.99	Poor source Depth to bedrock < 40" AASHTO GIN > 8 (low soil strength) Slopes 15 to 25% LEP 3 to 9 25 to 50% fragments >3"	0.00 0.00 0.18 0.39 0.99

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
684: Earlall very gravelly loam-----	20	Poor source AWC < 3" to 60" depth Clay 27 to 40% 25 to 50% fragments 3-10"	0.00 0.18 0.57	Poor source Depth to bedrock < 40" LEP 3 to 9 Slopes 15 to 25% 25 to 50% fragments >3"	0.00 0.33 0.50 0.57
Rock outcrop, serpentinite-----	15	Not rated		Not rated	
685: Bosquejo taxadjunct, gravelly substratum-----	70	Poor source Clay > 40% OM < .5% AWC 3 - 6" to 60" depth	0.00 0.00 0.99	Poor source LEP > 9 Saturation from 1 to 3'	0.00 0.89
686: Redsluff taxadjunct clay loam-----	70	Fair source Clay 27 to 40%	0.32	Fair source LEP 3 to 9	0.64
687: Xerorthents, shallow-----	45	Poor source AWC < 3" to 60" depth Clay 27 to 40%	0.00 0.68	Poor source Depth to bedrock < 40" AASHTO GIN 5 to 8 (soil strength)	0.00 0.22
Typic Haploxeralfs gravelly loam--	40	Poor source OM < .5% AWC 3 - 6" to 60" depth Clay 27 to 40%	0.00 0.63 0.92	Poor source Depth to bedrock 40 to 60" LEP 3 to 9	0.00 0.60
700: Retsongulch very gravelly sandy loam-----	40	Poor source AWC < 3" to 60" depth OM < .5% 5 to 15% fragments >10" pH between 4 and 6.5 above 40" Fragments 3-10" < 25%	0.00 0.00 0.18 0.50 0.99	Poor source Depth to bedrock < 40" Slopes > 25% 25 to 50% fragments >3"	0.00 0.00 0.99
Flumewall gravelly sandy loam-----	25	Poor source AWC < 3" to 60" depth More than 15% fragments >10" pH between 4 and 6.5 above 40"	0.00 0.00 0.99	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
701:					
Powellton gravelly loam-----	40	Poor source OM < .5% pH between 4 and 6.5 above 40"	0.00 0.68	Poor source Slopes > 25% AASHTO GIN 5 to 8 (soil strength)	0.00 0.78
Obstruction gravelly sandy loam---	30	Fair source pH between 4 and 6.5 above 40"	0.68	Poor source Slopes > 25%	0.00
702:					
Cerpone gravelly loam-----	50	Fair source OM .5 to 1% Clay 27 to 40% pH between 4 and 6.5 above 40"	0.16 0.68 0.88	Fair source LEP 3 to 9 Depth to bedrock 40 to 60"	0.71 0.97
Typic Haploxeralfs, magnesian, very gravelly loam-----	20	Poor source Clay > 40% OM < .5% AWC 3 - 6" to 60" depth 25 to 50% fragments 3-10"	0.00 0.00 0.44 0.95	Fair source LEP 3 to 9 Depth to bedrock 40 to 60"	0.13 0.87
Earlal very gravelly loam-----	15	Poor source AWC < 3" to 60" depth Clay 27 to 40% 25 to 50% fragments 3-10"	0.00 0.18 0.57	Poor source Depth to bedrock < 40" LEP 3 to 9 25 to 50% fragments >3"	0.00 0.33 0.57
703:					
Cerpone gravelly loam-----	30	Fair source OM .5 to 1% Clay 27 to 40% pH between 4 and 6.5 above 40"	0.16 0.68 0.88	Fair source Slopes 15 to 25% LEP 3 to 9 Depth to bedrock 40 to 60"	0.18 0.71 0.97
Typic Haploxeralfs, magnesian, very gravelly loam-----	30	Poor source Clay > 40% OM < .5% AWC 3 - 6" to 60" depth 25 to 50% fragments 3-10"	0.00 0.00 0.44 0.95	Poor source Slopes > 25% LEP 3 to 9 Depth to bedrock 40 to 60"	0.00 0.13 0.87

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
703:					
Earlal very gravelly loam-----	15	Poor source AWC < 3" to 60" depth Clay 27 to 40% 25 to 50% fragments 3-10"	0.00 0.18 0.57	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9 25 to 50% fragments >3"	0.00 0.00 0.33 0.57
Rock outcrop, serpentinite-----	15	Not rated		Not rated	
704:					
Typic Haploxeralfs, magnesian, very gravelly loam-----	40	Poor source Clay > 40% OM < .5% AWC 3 - 6" to 60" depth 25 to 50% fragments 3-10"	0.00 0.00 0.44 0.95	Poor source Slopes > 25% LEP 3 to 9 Depth to bedrock 40 to 60"	0.00 0.13 0.87
Earlal very gravelly loam-----	20	Poor source AWC < 3" to 60" depth Clay 27 to 40% 25 to 50% fragments 3-10"	0.00 0.18 0.57	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9 25 to 50% fragments >3"	0.00 0.00 0.33 0.57
Cerpone gravelly loam-----	15	Fair source OM .5 to 1% Clay 27 to 40% pH between 4 and 6.5 above 40"	0.16 0.68 0.88	Poor source Slopes > 25% LEP 3 to 9 Depth to bedrock 40 to 60"	0.00 0.71 0.97
Rock outcrop, serpentinite-----	15	Not rated		Not rated	
705:					
Typic Haploxeralfs, magnesian, very gravelly loam-----	35	Poor source Clay > 40% OM < .5% AWC 3 - 6" to 60" depth 25 to 50% fragments 3-10"	0.00 0.00 0.44 0.95	Poor source Slopes > 25% LEP 3 to 9 Depth to bedrock 40 to 60"	0.00 0.13 0.87
Earlal very gravelly loam-----	25	Poor source AWC < 3" to 60" depth Clay 27 to 40% 25 to 50% fragments 3-10"	0.00 0.18 0.57	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9 25 to 50% fragments >3"	0.00 0.00 0.33 0.57

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
705:					
Cerpone gravelly loam-----	15	Fair source OM .5 to 1% Clay 27 to 40% pH between 4 and 6.5 above 40"	0.16 0.68 0.88	Poor source Slopes > 25% LEP 3 to 9 Depth to bedrock 40 to 60"	0.00 0.71 0.97
Rock outcrop, serpentinite-----	15	Not rated		Not rated	
711:					
Dixmine very gravelly loam-----	45	Fair source Clay 27 to 40% pH between 4 and 6.5 above 40" 25 to 50% fragments 3-10" AWC 3 - 6" to 60" depth	0.50 0.61 0.83 0.87	Fair source LEP 3 to 9 Depth to bedrock 40 to 60" 25 to 50% fragments >3"	0.73 0.84 0.99
Toadtown loam-----	40	Poor source OM < .5% pH between 4 and 6.5 above 40" Clay 27 to 40%	0.00 0.54 0.98	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.62
712:					
Dixmine very gravelly loam-----	50	Fair source Clay 27 to 40% pH between 4 and 6.5 above 40" 25 to 50% fragments 3-10" AWC 3 - 6" to 60" depth	0.50 0.61 0.83 0.87	Fair source Slopes 15 to 25% LEP 3 to 9 Depth to bedrock 40 to 60" 25 to 50% fragments >3"	0.18 0.73 0.84 0.99
Toadtown loam-----	40	Poor source OM < .5% pH between 4 and 6.5 above 40" Clay 27 to 40%	0.00 0.54 0.98	Poor source AASHTO GIN > 8 (low soil strength) Slopes 15 to 25% LEP 3 to 9	0.00 0.18 0.62
713:					
Dixmine very gravelly loam-----	50	Fair source Clay 27 to 40% pH between 4 and 6.5 above 40" 25 to 50% fragments 3-10" AWC 3 - 6" to 60" depth	0.50 0.61 0.83 0.87	Poor source Slopes > 25% LEP 3 to 9 Depth to bedrock 40 to 60" 25 to 50% fragments >3"	0.00 0.73 0.84 0.99
Toadtown loam-----	35	Poor source OM < .5% pH between 4 and 6.5 above 40" Clay 27 to 40%	0.00 0.54 0.98	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.62

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
714:					
Dixmine very gravelly loam-----	50	Fair source		Poor source	
		Clay 27 to 40%	0.50	Slopes > 25%	0.00
		pH between 4 and 6.5 above 40"	0.61	LEP 3 to 9	0.73
		25 to 50% fragments 3-10"	0.83	Depth to bedrock 40 to 60"	0.84
		AWC 3 - 6" to 60" depth	0.87	25 to 50% fragments >3"	0.99
Toadtown loam-----	35	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		pH between 4 and 6.5 above 40"	0.54	AASHTO GIN > 8 (low soil strength)	0.00
		Clay 27 to 40%	0.98	LEP 3 to 9	0.62
715:					
Logtrain gravelly loam-----	40	Fair source		Poor source	
		pH between 4 and 6.5 above 40"	0.50	Slopes > 25%	0.00
		5 to 15% fragments >10"	0.72	AASHTO GIN 5 to 8 (soil strength)	0.22
		AWC 3 - 6" to 60" depth	0.81	Depth to bedrock 40 to 60"	0.87
		Fragments 3-10" < 25%	0.99		
Bottlehill very gravelly loam-----	30	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		pH between 4 and 6.5 above 40"	0.50	Slopes > 25%	0.00
		Clay 27 to 40%	0.98	LEP 3 to 9	0.90
Walkermine very gravelly loam-----	20	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		pH between 4 and 6.5 above 40"	0.92	Slopes > 25%	0.00
		Fragments 3-10" < 25%	0.99	25 to 50% fragments >3"	0.99
716:					
Griffgulch very gravelly silt loam	40	Poor source		Poor source	
		Clay > 40%	0.00	AASHTO GIN > 8 (low soil strength)	0.00
		5 to 15% fragments >10"	0.00	LEP 3 to 9	0.34
		AWC 3 - 6" to 60" depth	0.47	25 to 50% fragments >3"	0.70
		25 to 50% fragments 3-10"	0.82	Depth to bedrock 40 to 60"	0.99
		pH between 4 and 6.5 above 40"	0.88		
Surnuf gravelly loam-----	40	Poor source		Poor source	
		Clay > 40%	0.00	AASHTO GIN > 8 (low soil strength)	0.00
		pH between 4 and 6.5 above 40"	0.96	LEP 3 to 9	0.23

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
717: Griffgulch very gravelly silt loam	40	Poor source Clay > 40% 5 to 15% fragments >10" AWC 3 - 6" to 60" depth 25 to 50% fragments 3-10" pH between 4 and 6.5 above 40"	0.00 0.00 0.47 0.82 0.88	Poor source AASHTO GIN > 8 (low soil strength) Slopes 15 to 25% LEP 3 to 9 25 to 50% fragments >3" Depth to bedrock 40 to 60"	0.00 0.18 0.34 0.70 0.99
Surnuf gravelly loam-----	40	Poor source Clay > 40% pH between 4 and 6.5 above 40"	0.00 0.96	Poor source AASHTO GIN > 8 (low soil strength) Slopes 15 to 25% LEP 3 to 9	0.00 0.18 0.23
718: Griffgulch very gravelly silt loam	35	Poor source Clay > 40% 5 to 15% fragments >10" AWC 3 - 6" to 60" depth 25 to 50% fragments 3-10" pH between 4 and 6.5 above 40"	0.00 0.00 0.47 0.82 0.88	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9 25 to 50% fragments >3" Depth to bedrock 40 to 60"	0.00 0.00 0.34 0.70 0.99
Surnuf gravelly loam-----	35	Poor source Clay > 40% pH between 4 and 6.5 above 40"	0.00 0.96	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.23
Spine taxadjunct very cobbly loam	15	Poor source AWC < 3" to 60" depth 25 to 50% fragments 3-10" pH between 4 and 6.5 above 40"	0.00 0.16 0.96	Poor source Depth to bedrock < 40" Slopes > 25% AASHTO GIN > 8 (low soil strength) 25 to 50% fragments >3" LEP 3 to 9	0.00 0.00 0.00 0.16 0.75
719: Griffgulch very gravelly silt loam	35	Poor source Clay > 40% 5 to 15% fragments >10" AWC 3 - 6" to 60" depth 25 to 50% fragments 3-10" pH between 4 and 6.5 above 40"	0.00 0.00 0.47 0.82 0.88	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9 25 to 50% fragments >3" Depth to bedrock 40 to 60"	0.00 0.00 0.34 0.70 0.99

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
719:					
Surnuf gravelly loam-----	30	Poor source		Poor source	
		Clay > 40%	0.00	Slopes > 25%	0.00
		pH between 4 and 6.5 above 40"	0.96	AASHTO GIN > 8 (low soil strength)	0.00
				LEP 3 to 9	0.23
Spine taxadjunct very cobbly loam	20	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		25 to 50% fragments 3-10"	0.16	Slopes > 25%	0.00
		pH between 4 and 6.5 above 40"	0.96	AASHTO GIN > 8 (low soil strength)	0.00
				25 to 50% fragments >3"	0.16
				LEP 3 to 9	0.75
720:					
Dystroxerepts extremely gravelly loam-----	40	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM .5 to 1%	0.32	Slopes > 25%	0.00
		pH between 4 and 6.5 above 40"	0.50	25 to 50% fragments >3"	0.52
		25 to 50% fragments 3-10"	0.52	LEP 3 to 9	0.99
		5 to 15% fragments >10"	0.92		
Haploxerafls very gravelly loam---	30	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Slopes > 25%	0.00
		OM < .5%	0.00	Depth to bedrock 40 to 60"	0.29
		5 to 15% fragments >10"	0.06	LEP 3 to 9	0.52
		25 to 50% fragments 3-10"	0.45	25 to 50% fragments >3"	0.55
		Clay 27 to 40%	0.50		
		pH between 4 and 6.5 above 40"	0.95		
Rock outcrop, metavolcanic-----	15	Not rated		Not rated	
721:					
Haploxerands, granitic till, medial sandy loam-----	70	Poor source		Good source	
		More than 15% fragments >10"	0.00		
		AWC 3 - 6" to 60" depth	0.43		
		pH between 4 and 6.5 above 40"	0.84		

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
722: Haploxerands, granitic till, medial sandy loam-----	70	Poor source More than 15% fragments >10" AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.43 0.84	Fair source Slopes 15 to 25%	0.50
723: Haploxerands, granitic till, medial sandy loam-----	70	Poor source More than 15% fragments >10" AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.43 0.84	Poor source Slopes > 25%	0.00
724: Haploxerands, volcanic till, cobble medial sandy loam-----	75	Fair source 5 to 15% fragments >10" pH between 4 and 6.5 above 40"	0.60 0.68	Good source	
725: Haploxerands, volcanic till, cobble medial sandy loam-----	75	Fair source 5 to 15% fragments >10" pH between 4 and 6.5 above 40"	0.60 0.68	Fair source Slopes 15 to 25%	0.50
726: Haploxerands, volcanic till, cobble medial sandy loam-----	75	Fair source 5 to 15% fragments >10" pH between 4 and 6.5 above 40"	0.60 0.68	Poor source Slopes > 25%	0.00
727: Bonneyridge sandy loam-----	85	Fair source pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.74 0.99	Good source	
728: Bonneyridge sandy loam-----	85	Fair source pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.74 0.99	Fair source Slopes 15 to 25%	0.18

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
729: Bonneyridge sandy loam-----	85	Fair source pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.74 0.99	Poor source Slopes > 25%	0.00
730: Tusccoll gravelly loam-----	60	Fair source pH between 4 and 6.5 above 40"	0.99	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.75
Schott very gravelly loam-----	25	Fair source AWC 3 - 6" to 60" depth 5 to 15% fragments >10" 25 to 50% fragments 3-10" Clay 27 to 40% pH between 4 and 6.5 above 40"	0.03 0.06 0.57 0.92 0.97	Poor source Slopes > 25% Depth to bedrock 40 to 60" LEP 3 to 9 25 to 50% fragments >3"	0.00 0.58 0.70 0.72
731: Tusccoll gravelly loam-----	50	Fair source pH between 4 and 6.5 above 40"	0.99	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.75
Schott very gravelly loam-----	35	Fair source AWC 3 - 6" to 60" depth 5 to 15% fragments >10" 25 to 50% fragments 3-10" Clay 27 to 40% pH between 4 and 6.5 above 40"	0.03 0.06 0.57 0.92 0.97	Poor source Slopes > 25% Depth to bedrock 40 to 60" LEP 3 to 9 25 to 50% fragments >3"	0.00 0.58 0.70 0.72
732: Bonepile taxadjunct, duripan substratum-----	90	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40" 25 to 50% fragments 3-10" Fragments >10" are < 5%	0.00 0.92 0.95 0.99	Fair source Depth to pan 40-60" 25 to 50% fragments >3"	0.29 0.99

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
733: Haploxeralfs, terrace, gravelly loam-----	75	Poor source More than 15% fragments >10" OM < .5% AWC 3 - 6" to 60" depth Clay 27 to 40% 25 to 50% fragments 3-10"	0.00 0.00 0.28 0.68 0.83	Fair source AASHTO GIN 5 to 8 (soil strength) LEP 3 to 9	0.22 0.75
734: Haploxerands medial sandy loam----	55	Good source		Good source	
Aquic Xerofluvents peaty very fine sandy loam-----	35	Poor source WEG = 1 or 2 K factor .10 -.35 pH between 4 and 6.5 above 40"	0.00 0.90 0.99	Poor source Saturation < 1' depth	0.00
735: Fluvaquents, loamy-----	80	Fair source OM .5 to 1%	0.68	Poor source Saturation < 1' depth	0.00
801: Obstruction gravelly sandy loam---	70	Fair source pH between 4 and 6.5 above 40"	0.68	Good source	
802: Obskel very gravelly sandy loam---	40	Fair source OM .5 to 1% AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40"	0.01 0.75 0.92	Poor source Slopes > 25% Depth to bedrock 40 to 60"	0.00 0.94
Obstruction gravelly sandy loam---	40	Fair source pH between 4 and 6.5 above 40"	0.68	Fair source Slopes 15 to 25%	0.18
803: Obskel very gravelly sandy loam---	40	Fair source OM .5 to 1% AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40"	0.01 0.75 0.92	Poor source Slopes > 25% Depth to bedrock 40 to 60"	0.00 0.94

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
803: Obstruction gravelly sandy loam---	40	Fair source pH between 4 and 6.5 above 40"	0.68	Poor source Slopes > 25%	0.00
804: Obskel very gravelly sandy loam---	35	Fair source OM .5 to 1% AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40"	0.01 0.75 0.92	Poor source Slopes > 25% Depth to bedrock 40 to 60"	0.00 0.94
Obstruction gravelly sandy loam---	25	Fair source pH between 4 and 6.5 above 40"	0.68	Poor source Slopes > 25%	0.00
Retsongulch very gravelly sandy loam-----	20	Poor source AWC < 3" to 60" depth OM < .5% 5 to 15% fragments >10" pH between 4 and 6.5 above 40" Fragments 3-10" < 25%	0.00 0.00 0.18 0.50 0.99	Poor source Depth to bedrock < 40" Slopes > 25% 25 to 50% fragments >3"	0.00 0.00 0.99
805: Bottlehill very gravelly loam----	50	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40" Clay 27 to 40%	0.00 0.50 0.98	Poor source Depth to bedrock < 40" LEP 3 to 9	0.00 0.90
Walkermine very gravelly loam----	20	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40" Fragments 3-10" < 25%	0.00 0.92 0.99	Poor source Depth to bedrock < 40" 25 to 50% fragments >3"	0.00 0.99
Logtrain gravelly loam-----	20	Fair source pH between 4 and 6.5 above 40" 5 to 15% fragments >10" AWC 3 - 6" to 60" depth Fragments 3-10" < 25%	0.50 0.72 0.81 0.99	Fair source AASHTO GIN 5 to 8 (soil strength) Depth to bedrock 40 to 60"	0.22 0.87
806: Bottlehill very gravelly loam----	50	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40" Clay 27 to 40%	0.00 0.50 0.98	Poor source Depth to bedrock < 40" Slopes 15 to 25% LEP 3 to 9	0.00 0.18 0.90

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
806: Walkermine very gravelly loam-----	20	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40" Fragments 3-10" < 25%	0.00 0.92 0.99	Poor source Depth to bedrock < 40" Slopes > 25% 25 to 50% fragments >3"	0.00 0.00 0.99
Logtrain gravelly loam-----	20	Fair source pH between 4 and 6.5 above 40" 5 to 15% fragments >10" AWC 3 - 6" to 60" depth Fragments 3-10" < 25%	0.50 0.72 0.81 0.99	Poor source Slopes > 25% AASHTO GIN 5 to 8 (soil strength) Depth to bedrock 40 to 60"	0.00 0.22 0.87
807: Bottlehill very gravelly loam-----	35	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40" Clay 27 to 40%	0.00 0.50 0.98	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.90
Logtrain gravelly loam-----	30	Fair source pH between 4 and 6.5 above 40" 5 to 15% fragments >10" AWC 3 - 6" to 60" depth Fragments 3-10" < 25%	0.50 0.72 0.81 0.99	Poor source Slopes > 25% AASHTO GIN 5 to 8 (soil strength) Depth to bedrock 40 to 60"	0.00 0.22 0.87
Walkermine very gravelly loam-----	25	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40" Fragments 3-10" < 25%	0.00 0.92 0.99	Poor source Depth to bedrock < 40" Slopes > 25% 25 to 50% fragments >3"	0.00 0.00 0.99
808: Bottlehill very gravelly loam-----	45	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40" Clay 27 to 40%	0.00 0.50 0.98	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.90
Walkermine very gravelly loam-----	20	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40" Fragments 3-10" < 25%	0.00 0.92 0.99	Poor source Depth to bedrock < 40" Slopes > 25% 25 to 50% fragments >3"	0.00 0.00 0.99

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
808: Logtrain gravelly loam-----	20	Fair source pH between 4 and 6.5 above 40" 5 to 15% fragments >10" AWC 3 - 6" to 60" depth Fragments 3-10" < 25%	0.50 0.72 0.81 0.99	Poor source Slopes > 25% AASHTO GIN 5 to 8 (soil strength) Depth to bedrock 40 to 60"	0.00 0.22 0.87
809: Walkermine very gravelly loam----	45	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40" Fragments 3-10" < 25%	0.00 0.92 0.99	Poor source Depth to bedrock < 40" Slopes > 25% 25 to 50% fragments >3"	0.00 0.00 0.99
Bottlehill very gravelly loam----	15	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40" Clay 27 to 40%	0.00 0.50 0.98	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.90
Logtrain gravelly loam-----	15	Fair source pH between 4 and 6.5 above 40" 5 to 15% fragments >10" AWC 3 - 6" to 60" depth Fragments 3-10" < 25%	0.50 0.72 0.81 0.99	Poor source Slopes > 25% AASHTO GIN 5 to 8 (soil strength) Depth to bedrock 40 to 60"	0.00 0.22 0.87
Rock outcrop, metavolcanic-----	15	Not rated		Not rated	
810: Dixmine very gravelly loam-----	35	Fair source Clay 27 to 40% pH between 4 and 6.5 above 40" 25 to 50% fragments 3-10" AWC 3 - 6" to 60" depth	0.50 0.61 0.83 0.87	Poor source Slopes > 25% LEP 3 to 9 Depth to bedrock 40 to 60" 25 to 50% fragments >3"	0.00 0.73 0.84 0.99
Mac gravelly loam-----	25	Poor source OM < .5% pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.00 0.50 0.59	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.79
Spine very gravelly loam-----	25	Poor source AWC < 3" to 60" depth OM < .5% pH between 4 and 6.5 above 40"	0.00 0.00 0.84	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.83

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
811:					
Powellton gravelly loam-----	50	Poor source OM < .5% pH between 4 and 6.5 above 40"	0.00 0.68	Fair source AASHTO GIN 5 to 8 (soil strength)	0.78
Toadtown loam-----	40	Poor source OM < .5% pH between 4 and 6.5 above 40" Clay 27 to 40%	0.00 0.54 0.98	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.62
812:					
Powellton gravelly loam-----	50	Poor source OM < .5% pH between 4 and 6.5 above 40"	0.00 0.68	Fair source Slopes 15 to 25% AASHTO GIN 5 to 8 (soil strength)	0.18 0.78
Toadtown loam-----	40	Poor source OM < .5% pH between 4 and 6.5 above 40" Clay 27 to 40%	0.00 0.54 0.98	Poor source AASHTO GIN > 8 (low soil strength) Slopes 15 to 25% LEP 3 to 9	0.00 0.18 0.62
813:					
Powellton gravelly loam-----	50	Poor source OM < .5% pH between 4 and 6.5 above 40"	0.00 0.68	Poor source Slopes > 25% AASHTO GIN 5 to 8 (soil strength)	0.00 0.78
Toadtown loam-----	40	Poor source OM < .5% pH between 4 and 6.5 above 40" Clay 27 to 40%	0.00 0.54 0.98	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.62
814:					
Mountyana gravelly loam-----	80	Fair source OM .5 to 1% pH between 4 and 6.5 above 40" 5 to 15% fragments >10" Clay 27 to 40%	0.08 0.54 0.61 0.82	Fair source LEP 3 to 9	0.79
815:					
Mountyana gravelly loam-----	80	Fair source OM .5 to 1% pH between 4 and 6.5 above 40" 5 to 15% fragments >10" Clay 27 to 40%	0.08 0.54 0.61 0.82	Fair source Slopes 15 to 25% LEP 3 to 9	0.18 0.79

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
817: Lydon very gravelly medial coarse sandy loam-----	80	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40" 25 to 50% fragments 3-10"	0.00 0.74 0.98	Poor source Depth to bedrock < 40" 25 to 50% fragments >3"	0.00 0.98
818: Lydon very gravelly medial coarse sandy loam-----	75	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40" 25 to 50% fragments 3-10"	0.00 0.74 0.98	Poor source Depth to bedrock < 40" Slopes 15 to 25% 25 to 50% fragments >3"	0.00 0.18 0.98
819: Lydon very gravelly medial coarse sandy loam-----	65	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40" 25 to 50% fragments 3-10"	0.00 0.74 0.98	Poor source Depth to bedrock < 40" Slopes > 25% 25 to 50% fragments >3"	0.00 0.00 0.98
Rock outcrop, mudflow breccia----	20	Not rated		Not rated	
820: Lydon very gravelly medial coarse sandy loam-----	60	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40" 25 to 50% fragments 3-10"	0.00 0.74 0.98	Poor source Depth to bedrock < 40" Slopes > 25% 25 to 50% fragments >3"	0.00 0.00 0.98
Rock outcrop, mudflow breccia----	25	Not rated		Not rated	
821: Lydon very gravelly medial coarse sandy loam-----	55	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40" 25 to 50% fragments 3-10"	0.00 0.74 0.98	Poor source Depth to bedrock < 40" Slopes > 25% 25 to 50% fragments >3"	0.00 0.00 0.98
Rock outcrop, mudflow breccia----	30	Not rated		Not rated	
822: Bonpile gravelly medial loam-----	85	Fair source AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40"	0.23 0.50	Fair source Depth to bedrock 40 to 60"	0.12

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
823: Bonpile gravelly medial loam-----	85	Fair source AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40"	0.23 0.50	Fair source Depth to bedrock 40 to 60" Slopes 15 to 25%	0.12 0.18
824: Beecee very gravelly medial loam--	85	Fair source pH between 4 and 6.5 above 40" 5 to 15% fragments >10" AWC 3 - 6" to 60" depth	0.68 0.70 0.99	Poor source Slopes > 25%	0.00
825: Beecee very gravelly medial loam--	60	Fair source pH between 4 and 6.5 above 40" 5 to 15% fragments >10" AWC 3 - 6" to 60" depth	0.68 0.70 0.99	Poor source Slopes > 25%	0.00
Lydon very gravelly medial coarse sandy loam-----	20	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40" 25 to 50% fragments 3-10"	0.00 0.74 0.98	Poor source Depth to bedrock < 40" Slopes > 25% 25 to 50% fragments >3"	0.00 0.00 0.98
826: Redbone gravelly medial sandy loam	80	Fair source AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40"	0.65 0.74	Fair source Depth to bedrock 40 to 60"	0.89
827: Redbone gravelly medial sandy loam	80	Fair source AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40"	0.65 0.74	Fair source Slopes 15 to 25% Depth to bedrock 40 to 60"	0.18 0.89
829: Paradiso loam-----	80	Poor source Clay > 40% OM .5 to 1% pH between 4 and 6.5 above 40"	0.00 0.08 0.68	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.32
830: Paradiso loam-----	75	Poor source Clay > 40% OM .5 to 1% pH between 4 and 6.5 above 40"	0.00 0.08 0.68	Poor source AASHTO GIN > 8 (low soil strength) Slopes 15 to 25% LEP 3 to 9	0.00 0.18 0.32

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
831:					
Surnuf gravelly loam-----	40	Poor source Clay > 40% pH between 4 and 6.5 above 40"	0.00 0.96	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.23
Bigridge loam-----	30	Poor source OM < .5% pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.00 0.74 0.78	Fair source Depth to bedrock 40 to 60"	0.65
Spine very gravelly loam-----	15	Poor source AWC < 3" to 60" depth OM < .5% pH between 4 and 6.5 above 40"	0.00 0.00 0.84	Poor source Depth to bedrock < 40" LEP 3 to 9	0.00 0.83
832:					
Surnuf gravelly loam-----	40	Poor source Clay > 40% pH between 4 and 6.5 above 40"	0.00 0.96	Poor source AASHTO GIN > 8 (low soil strength) Slopes 15 to 25% LEP 3 to 9	0.00 0.18 0.23
Bigridge loam-----	30	Poor source OM < .5% pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.00 0.74 0.78	Fair source Slopes 15 to 25% Depth to bedrock 40 to 60"	0.18 0.65
Spine very gravelly loam-----	15	Poor source AWC < 3" to 60" depth OM < .5% pH between 4 and 6.5 above 40"	0.00 0.00 0.84	Poor source Depth to bedrock < 40" Slopes 15 to 25% LEP 3 to 9	0.00 0.50 0.83
833:					
Surnuf gravelly loam-----	60	Poor source Clay > 40% pH between 4 and 6.5 above 40"	0.00 0.96	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.23
Bigridge loam-----	15	Poor source OM < .5% pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.00 0.74 0.78	Poor source Slopes > 25% Depth to bedrock 40 to 60"	0.00 0.65

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
833: Spine very gravelly loam-----	15	Poor source AWC < 3" to 60" depth OM < .5% pH between 4 and 6.5 above 40"	0.00 0.00 0.84	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.83
834: Hietanen gravelly loam-----	50	Fair source pH between 4 and 6.5 above 40"	0.68	Poor source AASHTO GIN > 8 (low soil strength) Depth to bedrock 40 to 60" LEP 3 to 9	0.00 0.58 0.96
Mac gravelly loam-----	30	Poor source OM < .5% pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.00 0.50 0.59	Poor source Depth to bedrock < 40" LEP 3 to 9	0.00 0.79
835: Hietanen gravelly loam-----	60	Fair source pH between 4 and 6.5 above 40"	0.68	Poor source AASHTO GIN > 8 (low soil strength) Slopes 15 to 25% Depth to bedrock 40 to 60" LEP 3 to 9	0.00 0.50 0.58 0.96
Mac gravelly loam-----	20	Poor source OM < .5% pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.00 0.50 0.59	Poor source Depth to bedrock < 40" LEP 3 to 9	0.00 0.79
836: Hietanen gravelly loam-----	50	Fair source pH between 4 and 6.5 above 40"	0.68	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) Depth to bedrock 40 to 60" LEP 3 to 9	0.00 0.00 0.58 0.96
Mac gravelly loam-----	20	Poor source OM < .5% pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.00 0.50 0.59	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.79

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
836: Spine very gravelly loam-----	15	Poor source AWC < 3" to 60" depth OM < .5% pH between 4 and 6.5 above 40"	0.00 0.00 0.84	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.83
837: Hietanen gravelly loam-----	35	Fair source pH between 4 and 6.5 above 40"	0.68	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) Depth to bedrock 40 to 60" LEP 3 to 9	0.00 0.00 0.58 0.96
Spine very gravelly loam-----	25	Poor source AWC < 3" to 60" depth OM < .5% pH between 4 and 6.5 above 40"	0.00 0.00 0.84	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.83
Mac gravelly loam-----	20	Poor source OM < .5% pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.00 0.50 0.59	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.79
838: Dixmine very gravelly loam-----	35	Fair source Clay 27 to 40% pH between 4 and 6.5 above 40" 25 to 50% fragments 3-10" AWC 3 - 6" to 60" depth	0.50 0.61 0.83 0.87	Poor source Slopes > 25% LEP 3 to 9 Depth to bedrock 40 to 60" 25 to 50% fragments >3"	0.00 0.73 0.84 0.99
Spine very gravelly loam-----	25	Poor source AWC < 3" to 60" depth OM < .5% pH between 4 and 6.5 above 40"	0.00 0.00 0.84	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.83
Mac gravelly loam-----	25	Poor source OM < .5% pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.00 0.50 0.59	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.79

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
839: Chawanakee gravelly sandy loam----	55	Poor source AWC < 3" to 60" depth OM < .5% pH between 4 and 6.5 above 40" K factor < .10	0.00 0.00 0.68 0.99	Poor source Depth to bedrock < 40"	0.00
Billscabin gravelly sandy loam----	35	Poor source OM < .5% AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.64 0.84	Good source	
841: Billscabin gravelly sandy loam----	50	Poor source OM < .5% AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.64 0.84	Poor source Slopes > 25%	0.00
Bonneyridge sandy loam-----	35	Fair source pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.74 0.99	Poor source Slopes > 25%	0.00
842: Billscabin gravelly sandy loam----	60	Poor source OM < .5% AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.64 0.84	Poor source Slopes > 25%	0.00
Bonneyridge sandy loam-----	25	Fair source pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.74 0.99	Poor source Slopes > 25%	0.00
846: Bonneyridge sandy loam-----	60	Fair source pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.74 0.99	Good source	
Lewisflat loam-----	20	Poor source OM < .5% pH between 4 and 6.5 above 40"	0.00 0.39	Good source	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
847: Bonneyridge sandy loam-----	60	Fair source pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.74 0.99	Poor source Slopes > 25%	0.00
Lewisflat loam-----	20	Poor source OM < .5% pH between 4 and 6.5 above 40"	0.00 0.39	Fair source Slopes 15 to 25%	0.18
848: Bonneyridge sandy loam-----	60	Fair source pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.74 0.99	Poor source Slopes > 25%	0.00
Lewisflat loam-----	20	Poor source OM < .5% pH between 4 and 6.5 above 40"	0.00 0.39	Poor source Slopes > 25%	0.00
850: Lewisflat loam-----	85	Poor source OM < .5% pH between 4 and 6.5 above 40"	0.00 0.39	Good source	
851: Lewisflat loam-----	80	Poor source OM < .5% pH between 4 and 6.5 above 40"	0.00 0.39	Fair source Slopes 15 to 25%	0.18
852: Lewisflat loam-----	75	Poor source OM < .5% pH between 4 and 6.5 above 40"	0.00 0.39	Poor source Slopes > 25%	0.00
860: Toadtown gravelly loam-----	60	Poor source Clay > 40% pH between 4 and 6.5 above 40"	0.00 0.84	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.31
Powellton silt loam-----	20	Fair source pH between 4 and 6.5 above 40" Clay 27 to 40%	0.39 0.96	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.93

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
861:					
Toadtown gravelly loam-----	60	Poor source Clay > 40% pH between 4 and 6.5 above 40"	0.00 0.84	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9 Slopes 15 to 25%	0.00 0.31 0.82
Powellton silt loam-----	20	Fair source pH between 4 and 6.5 above 40" Clay 27 to 40%	0.39 0.96	Poor source AASHTO GIN > 8 (low soil strength) Slopes 15 to 25% LEP 3 to 9	0.00 0.18 0.93
862:					
Toadtown gravelly loam-----	60	Poor source Clay > 40% pH between 4 and 6.5 above 40"	0.00 0.84	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.31
Powellton silt loam-----	20	Fair source pH between 4 and 6.5 above 40" Clay 27 to 40%	0.39 0.96	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.93
863:					
Toadtown gravelly loam-----	60	Poor source Clay > 40% pH between 4 and 6.5 above 40"	0.00 0.84	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.31
Powellton silt loam-----	20	Fair source pH between 4 and 6.5 above 40" Clay 27 to 40%	0.39 0.96	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.93
880:					
Sites taxadjunct gravelly loam----	50	Poor source Clay > 40% pH between 4 and 6.5 above 40"	0.00 0.97	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.12
Jocal taxadjunct gravelly loam----	35	Fair source pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.32 0.91	Fair source Depth to bedrock 40 to 60"	0.74

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
881: Sites taxadjunct gravelly loam----	50	Poor source Clay > 40% pH between 4 and 6.5 above 40"	0.00 0.97	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9 Slopes 15 to 25%	0.00 0.12 0.82
Jocal taxadjunct gravelly loam----	35	Fair source pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.32 0.91	Fair source Slopes 15 to 25% Depth to bedrock 40 to 60"	0.18 0.74
882: Sites taxadjunct gravelly loam----	50	Poor source Clay > 40% pH between 4 and 6.5 above 40"	0.00 0.97	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.12
Jocal taxadjunct gravelly loam----	35	Fair source pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.32 0.91	Poor source Slopes > 25% Depth to bedrock 40 to 60"	0.00 0.74
883: Sites taxadjunct gravelly loam----	50	Poor source Clay > 40% pH between 4 and 6.5 above 40"	0.00 0.97	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.12
Jocal taxadjunct gravelly loam----	40	Fair source pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.32 0.91	Poor source Slopes > 25% Depth to bedrock 40 to 60"	0.00 0.74
885: Rogerville silt loam-----	75	Poor source Clay > 40% OM .5 to 1% pH between 4 and 6.5 above 40"	0.00 0.29 0.61	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9 Depth to bedrock 40 to 60"	0.00 0.51 0.68
886: Rogerville silt loam-----	80	Poor source Clay > 40% OM .5 to 1% pH between 4 and 6.5 above 40"	0.00 0.29 0.61	Poor source AASHTO GIN > 8 (low soil strength) Slopes 15 to 25% LEP 3 to 9 Depth to bedrock 40 to 60"	0.00 0.18 0.51 0.68

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
892: Rogerville silt loam-----	85	Poor source Clay > 40% OM .5 to 1% pH between 4 and 6.5 above 40"	0.00 0.29 0.61	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9 Depth to bedrock 40 to 60"	0.00 0.00 0.51 0.68
893: Rogerville silt loam-----	85	Poor source Clay > 40% OM .5 to 1% pH between 4 and 6.5 above 40"	0.00 0.29 0.61	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9 Depth to bedrock 40 to 60"	0.00 0.00 0.51 0.68
902: Lava flows, Lovejoy basalt-----	50	Not rated		Not rated	
Lumpkin gravelly medial sandy loam-----	40	Poor source AWC < 3" to 60" depth Fragments 3-10" > 50% pH between 4 and 6.5 above 40"	0.00 0.00 0.54	Poor source Depth to bedrock < 40" Fragments >3" > 50%	0.00 0.00
903: Mudwash gravelly medial sandy loam	45	Fair source pH between 4 and 6.5 above 40"	0.39	Good source	
Timberisland very gravelly medial sandy loam-----	25	Poor source AWC < 3" to 60" depth 25 to 50% fragments 3-10" pH between 4 and 6.5 above 40"	0.00 0.32 0.68	Poor source Slopes > 25% Depth to bedrock 40 to 60" 25 to 50% fragments >3"	0.00 0.39 0.95
Lavatop gravelly medial fine sandy loam-----	20	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40" Fragments 3-10" < 25%	0.00 0.54 0.99	Poor source Depth to bedrock < 40" 25 to 50% fragments >3"	0.00 0.99
904: Lava flows, Lovejoy basalt-----	60	Not rated		Not rated	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
904: Lavatop gravelly medial fine sandy loam-----	20	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40" Fragments 3-10" < 25%	0.00 0.54 0.99	Poor source Depth to bedrock < 40" Slopes 15 to 25% 25 to 50% fragments >3"	0.00 0.18 0.99
905: Lava flows, Lovejoy basalt-----	60	Not rated		Not rated	
Lumpkin gravelly medial sandy loam-----	30	Poor source AWC < 3" to 60" depth Fragments 3-10" > 50% pH between 4 and 6.5 above 40"	0.00 0.00 0.54	Poor source Depth to bedrock < 40" Slopes > 25% Fragments >3" > 50%	0.00 0.00 0.00
906: Lava flows, Lovejoy basalt-----	60	Not rated		Not rated	
Lumpkin gravelly medial sandy loam-----	30	Poor source AWC < 3" to 60" depth Fragments 3-10" > 50% pH between 4 and 6.5 above 40"	0.00 0.00 0.54	Poor source Depth to bedrock < 40" Slopes > 25% Fragments >3" > 50%	0.00 0.00 0.00
911: Endoaquolls loam-----	75	Poor source Clay > 40%	0.00	Poor source Saturation < 1' depth LEP 3 to 9	0.00 0.54
923: Powderhouse medial sandy loam-----	45	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.50	Poor source Depth to bedrock < 40" 25 to 50% fragments >3"	0.00 0.99
McNair medial coarse sandy loam---	25	Fair source AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40"	0.16 0.16	Fair source Depth to bedrock 40 to 60"	0.98
Greenwell medial sandy loam-----	20	Fair source AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40"	0.09 0.68	Poor source Depth to bedrock < 40"	0.00

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
924:					
Powderhouse medial sandy loam-----	45	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		pH between 4 and 6.5 above 40"	0.50	Slopes 15 to 25%	0.18
				25 to 50% fragments >3"	0.99
McNair medial coarse sandy loam---	25	Fair source		Fair source	
		AWC 3 - 6" to 60" depth	0.16	Slopes 15 to 25%	0.18
		pH between 4 and 6.5 above 40"	0.16	Depth to bedrock 40 to 60"	0.98
Greenwell medial sandy loam-----	20	Fair source		Poor source	
		AWC 3 - 6" to 60" depth	0.09	Depth to bedrock < 40"	0.00
		pH between 4 and 6.5 above 40"	0.68	Slopes 15 to 25%	0.18
925:					
Powderhouse medial sandy loam-----	45	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		pH between 4 and 6.5 above 40"	0.50	Slopes > 25%	0.00
				25 to 50% fragments >3"	0.99
McNair medial coarse sandy loam---	25	Fair source		Poor source	
		AWC 3 - 6" to 60" depth	0.16	Slopes > 25%	0.00
		pH between 4 and 6.5 above 40"	0.16	Depth to bedrock 40 to 60"	0.98
Greenwell medial sandy loam-----	20	Fair source		Poor source	
		AWC 3 - 6" to 60" depth	0.09	Depth to bedrock < 40"	0.00
		pH between 4 and 6.5 above 40"	0.68	Slopes > 25%	0.00
930:					
Shakeridge gravelly medial coarse sandy loam-----	50	Fair source		Good source	
		AWC 3 - 6" to 60" depth	0.11		
		pH between 4 and 6.5 above 40"	0.92		
Timberisland very gravelly medial sandy loam-----	40	Poor source		Fair source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock 40 to 60"	0.39
		25 to 50% fragments 3-10"	0.32	25 to 50% fragments >3"	0.95
		pH between 4 and 6.5 above 40"	0.68		

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
931: Shakeridge gravelly medial coarse sandy loam-----	40	Fair source AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40"	0.11 0.92	Fair source Slopes 15 to 25%	0.18
Mudwash gravelly medial sandy loam	25	Fair source pH between 4 and 6.5 above 40"	0.39	Fair source Slopes 15 to 25%	0.18
Timberisland very gravelly medial sandy loam-----	15	Poor source AWC < 3" to 60" depth 25 to 50% fragments 3-10" pH between 4 and 6.5 above 40"	0.00 0.32 0.68	Fair source Slopes 15 to 25% Depth to bedrock 40 to 60" 25 to 50% fragments >3"	0.18 0.39 0.95
932: Shakeridge gravelly medial coarse sandy loam-----	50	Fair source AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40"	0.11 0.92	Poor source Slopes > 25%	0.00
Mudwash gravelly medial sandy loam	35	Fair source pH between 4 and 6.5 above 40"	0.39	Poor source Slopes > 25%	0.00
933: Shakeridge gravelly medial coarse sandy loam-----	80	Fair source AWC 3 - 6" to 60" depth pH between 4 and 6.5 above 40"	0.11 0.92	Poor source Slopes > 25%	0.00
934: Mudwash gravelly medial sandy loam	80	Fair source pH between 4 and 6.5 above 40"	0.39	Good source	
939: Fluvaquentic Humaquepts very fine sandy loam-----	85	Fair source pH between 4 and 6.5 above 40"	0.68	Fair source Saturation from 1 to 3'	0.04
940: Dejonah gravelly loam-----	50	Fair source pH between 4 and 6.5 above 40"	0.84	Good source	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
940: Stagpoint loam-----	30	Poor source More than 15% fragments >10" pH between 4 and 6.5 above 40" 25 to 50% fragments 3-10" AWC 3 - 6" to 60" depth	0.00 0.46 0.86 0.99	Fair source 25 to 50% fragments >3"	0.81
941: Dejonah gravelly loam-----	50	Fair source pH between 4 and 6.5 above 40"	0.84	Fair source Slopes 15 to 25%	0.18
Stagpoint loam-----	30	Poor source More than 15% fragments >10" pH between 4 and 6.5 above 40" 25 to 50% fragments 3-10" AWC 3 - 6" to 60" depth	0.00 0.46 0.86 0.99	Fair source Slopes 15 to 25% 25 to 50% fragments >3"	0.18 0.81
942: Stagpoint loam-----	50	Poor source More than 15% fragments >10" pH between 4 and 6.5 above 40" 25 to 50% fragments 3-10" AWC 3 - 6" to 60" depth	0.00 0.46 0.86 0.99	Poor source Slopes > 25% 25 to 50% fragments >3"	0.00 0.81
Dejonah gravelly loam-----	30	Fair source pH between 4 and 6.5 above 40"	0.84	Poor source Slopes > 25%	0.00
948: Stagpoint loam-----	55	Poor source More than 15% fragments >10" pH between 4 and 6.5 above 40" 25 to 50% fragments 3-10" AWC 3 - 6" to 60" depth	0.00 0.46 0.86 0.99	Poor source Slopes > 25% 25 to 50% fragments >3"	0.00 0.81
Dejonah gravelly loam-----	35	Fair source pH between 4 and 6.5 above 40"	0.84	Poor source Slopes > 25%	0.00
949: Rogerville taxadjunct fine sandy loam-----	80	Fair source pH between 4 and 6.5 above 40" 5 to 15% fragments >10"	0.32 0.80	Poor source Slopes > 25% Depth to bedrock 40 to 60"	0.00 0.98

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
950:					
Lumpkin taxadjunct very gravelly medial very fine sandy loam-----	40	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.68	Poor source Depth to bedrock < 40"	0.00
Rock outcrop, olivine basalt, andesite, or mudflow-----	25	Not rated		Not rated	
Powderhouse medial sandy loam-----	20	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.50	Poor source Depth to bedrock < 40" 25 to 50% fragments >3"	0.00 0.99
951:					
Lumpkin taxadjunct very gravelly medial very fine sandy loam-----	40	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.68	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.18
Rock outcrop, andesite-----	25	Not rated		Not rated	
Powderhouse medial sandy loam-----	20	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40"	0.00 0.50	Poor source Depth to bedrock < 40" Slopes 15 to 25% 25 to 50% fragments >3"	0.00 0.18 0.99
960:					
Surnuf gravelly loam, high elevation-----	85	Poor source Clay > 40% pH between 4 and 6.5 above 40" 5 to 15% fragments >10"	0.00 0.84 0.95	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.19
961:					
Surnuf gravelly loam, high elevation-----	85	Poor source Clay > 40% pH between 4 and 6.5 above 40" 5 to 15% fragments >10"	0.00 0.84 0.95	Poor source AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.19

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
962: Surnuf gravelly loam, high elevation-----	85	Poor source Clay > 40% pH between 4 and 6.5 above 40" 5 to 15% fragments >10"	0.00 0.84 0.95	Poor source AASHTO GIN > 8 (low soil strength) Slopes 15 to 25% LEP 3 to 9	0.00 0.18 0.19
963: Surnuf gravelly loam, high elevation-----	85	Poor source Clay > 40% pH between 4 and 6.5 above 40" 5 to 15% fragments >10"	0.00 0.84 0.95	Poor source Slopes > 25% AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.19
990: Riverwash, frequently flooded----	100	Not rated		Not rated	
991: Xerofluvents sandy loam, frequently flooded-----	75	Fair source OM .5 to 1% K factor < .10	0.68 0.99	Fair source Saturation from 1 to 3'	0.80
995: Pits, gravel-----	100	Not rated		Not rated	
996: Dumps, excavated material-----	100	Not rated		Not rated	
997: Pits-----	95	Not rated		Not rated	
998: Dumps, landfill-----	100	Not rated		Not rated	
999: Water-----	100	Not rated		Not rated	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
DAM: Dam, manmade-----	100	Not rated		Not rated	

The interpretation for reclamation material evaluates the following soil properties at variable depths in the soil: the amount of sand, clay, and fragments; the content of organic matter (OM); the wind erodibility group (WEG); the available water capacity (AWC); pH; salinity (EC); the amount of sodium (SAR); carbonates; and susceptibility of the soil to water erosion (K factor).

The interpretation for roadfill evaluates the following soil properties at variable depths in the soil: shrink-swell potential expressed as linear extensibility percent (LEP), depth to bedrock or a cemented pan, wetness, slope, soil strength expressed as AASHTO group index number (AASHTO GIN), and content of fragments.

Table 19a.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The rating is based on the limitation with the highest value. Only the three highest value limitations are listed. There may be more limitations. Fine-earth fractions and rock fragments are reported on a weight basis. An explanation of the rating criteria and of the abbreviations used in describing the limitations is given at the end of the table)

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
100: Anita clay-----	60	Limitations Ponding (any duration) Thin layer Saturation < 2' depth	1.00 1.00 1.00	Limitations Depth to pan < 20"	1.00
Galt clay-----	25	Limitations Ponding (any duration) Saturation < 2' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Depth to pan 20 to 60"	0.81
104: Bosquejo clay-----	85	Limitations Ponding (any duration) Saturation between 2-4'	1.00 0.18	Limitations Permeability .6-2"/hr (seepage)	0.08
105: Busacca clay loam-----	85	Limitations Ponding (any duration) Shrink-swell (LEP 3-6)	1.00 0.78	No limitations	
108: Tuscan gravelly loam-----	45	Limitations Thin layer Saturation < 2' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Depth to pan < 20"	1.00
Igo gravelly loam-----	20	Limitations Thin layer Saturation < 2' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Depth to pan < 20"	1.00
Anita clay-----	15	Limitations Ponding (any duration) Thin layer Saturation < 2' depth	1.00 1.00 1.00	Limitations Depth to pan < 20"	1.00

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
109: Bosquejo clay loam-----	85	Limitations Ponding (any duration) Saturation between 2-4'	1.00 0.18	Limitations Permeability .6-2"/hr (seepage)	0.08
110: Bosquejo silt loam, overwash, occasionally flooded-----	90	Limitations Ponding (any duration) Shrink-swell (LEP >6) MH or CH Unified and PI <40%	1.00 1.00 0.50	No limitations	
111yu: Auburn loam-----	40	Limitations Thin layer Piping	1.00 1.00	Limitations Depth to bedrock < 20" Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 1.00 0.50
Sobrante loam-----	40	Limitations Piping Thin layer Shrink-swell (LEP 3-6)	0.98 0.93 0.50	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	1.00 0.93 0.50
114yu: Auburn gravelly loam-----	40	Limitations Thin layer Piping	1.00 1.00	Limitations Depth to bedrock < 20" Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 1.00 0.50
Sobrante gravelly loam-----	40	Limitations Thin layer Shrink-swell (LEP 3-6)	0.70 0.50	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	1.00 0.70 0.50
118: Xerorthents, tailings-----	80	Limitations Seepage	1.00	Limitations Permeability > 2"/hr (seepage) Slopes 2 to 7%	1.00 0.01
118co: Clear Lake clay, frequently flooded-----	90	Limitations Shrink-swell (LEP >6) MH or CH Unified and PI >=40%	1.00 1.00	No limitations	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
119:					
Xerorthents, tailings-----	70	Limitations Seepage	1.00	Limitations Permeability > 2"/hr (seepage)	1.00
Urban land-----	30	Not rated		Not rated	
119yu:					
Auburn gravelly loam-----	30	Limitations Thin layer Piping	1.00 1.00	Limitations Slopes > 7% Depth to bedrock < 20" Permeability .6-2"/hr (seepage)	1.00 1.00 0.50
Sobrante gravelly loam-----	30	Limitations Thin layer Shrink-swell (LEP 3-6)	0.70 0.50	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	1.00 0.70 0.50
Rock outcrop-----	20	Not rated		Not rated	
120:					
Gridley taxadjunct clay loam-----	80	Limitations Ponding (any duration) Saturation < 2' depth Thin layer	1.00 1.00 0.99	Limitations Depth to pan 20 to 60"	0.99
121:					
Boga loam-----	45	Limitations Ponding (any duration) Saturation between 2-4' Shrink-swell (LEP 3-6)	1.00 0.53 0.38	Limitations Permeability .6-2"/hr (seepage)	0.01
Loemstone loam-----	40	Limitations Ponding (any duration) Shrink-swell (LEP 3-6) Saturation between 2-4'	1.00 0.56 0.53	Limitations Permeability .6-2"/hr (seepage)	0.02
121su:					
Columbia fine sandy loam, frequently flooded-----	80	No limitations		Limitations Permeability > 2"/hr (seepage)	1.00

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
125: Gridley taxadjunct loam-----	65	Limitations Ponding (any duration) Saturation < 2' depth Thin layer	1.00 1.00 0.99	Limitations Depth to pan 20 to 60"	0.99
Calcic Haploxerolls sandy loam----	20	Limitations Piping Saturation between 2-4'	0.78 0.78	Limitations Permeability > 2"/hr (seepage)	1.00
126: Liveoak sandy loam-----	85	Limitations Saturation between 2-4'	0.86	Limitations Permeability > 2"/hr (seepage)	1.00
127: Gridley taxadjunct loam-----	85	Limitations Ponding (any duration) Saturation < 2' depth Thin layer	1.00 1.00 0.99	Limitations Depth to pan 20 to 60"	0.99
130: Eastbiggs loam-----	80	Limitations Saturation < 2' depth Shrink-swell (LEP >6) Thin layer	1.00 1.00 0.93	Limitations Depth to pan 20 to 60" Permeability .6-2"/hr (seepage)	0.93 0.08
133: Eastbiggs loam-----	50	Limitations Saturation < 2' depth Shrink-swell (LEP >6) Thin layer	1.00 1.00 0.93	Limitations Depth to pan 20 to 60" Permeability .6-2"/hr (seepage)	0.93 0.08
Galt clay loam-----	40	Limitations Ponding (any duration) Saturation < 2' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Depth to pan 20 to 60"	0.86
136: Duric Xerarents, cut-----	35	Limitations Ponding (any duration) Thin layer Saturation < 2' depth	1.00 1.00 1.00	Limitations Depth to pan < 20"	1.00

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
136: Duric Xerarents, fill-----	30	Limitations Ponding (any duration) Saturation between 2-4' Thin layer	1.00 0.24 0.16	Limitations Permeability > 2"/hr (seepage) Depth to pan 20 to 60"	1.00 0.16
Eastbiggs fine sandy loam, leveled-----	25	Limitations Ponding (any duration) Saturation < 2' depth Thin layer	1.00 1.00 0.86	Limitations Depth to pan 20 to 60"	0.86
138su: Liveoak sandy clay loam-----	85	Limitations Saturation between 2-4'	0.86	Limitations Permeability > 2"/hr (seepage)	0.99
139su: Liveoak taxadjunct loam, frequently flooded-----	45	Limitations Piping Thin layer	1.00 0.03	Limitations Permeability .6-2"/hr (seepage) Depth to pan 20 to 60"	0.50 0.03
Galt taxadjunct clay loam, frequently flooded-----	40	Limitations Saturation < 2' depth Thin layer Piping	1.00 0.99 0.50	Limitations Depth to pan 20 to 60" Permeability .6-2"/hr (seepage)	0.99 0.50
143su: Marcum clay loam-----	45	Limitations Shrink-swell (LEP >6) MH or CH Unified and PI <40% Thin layer	1.00 0.50 0.34	Limitations Depth to bedrock from 20-60"	0.34
Gridley clay loam-----	40	Limitations Shrink-swell (LEP >6) Thin layer MH or CH Unified and PI <40%	1.00 0.61 0.50	Limitations Depth to bedrock from 20-60"	0.61
149yu: Flanly sandy loam-----	80	Limitations Piping Thin layer Shrink-swell (LEP 3-6)	1.00 0.74 0.50	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	1.00 0.74 0.50

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
150: Columbia stratified sand to fine sandy loam-----	85	Limitations Saturation between 2-4'	0.18	Limitations Permeability > 2"/hr (seepage)	1.00
150su: Olashes sandy loam-----	85	Limitations Shrink-swell (LEP 3-6)	0.50	Limitations Permeability > 2"/hr (seepage)	1.00
151yu: Flanly sandy loam-----	80	Limitations Piping Thin layer Shrink-swell (LEP 3-6)	1.00 0.74 0.50	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	1.00 0.74 0.50
152: Gianella fine sandy loam, frequently flooded-----	85	Limitations Piping	1.00	Limitations Permeability > 2"/hr (seepage)	1.00
153: Gianella sandy loam, frequently flooded-----	85	No limitations		Limitations Permeability > 2"/hr (seepage)	1.00
154: Gianella silt loam, frequently flooded-----	85	Limitations Piping Seepage	1.00 0.10	Limitations Permeability > 2"/hr (seepage)	1.00
158: Gianella fine sandy loam, occasionally flooded-----	85	Limitations Seepage	0.10	Limitations Permeability > 2"/hr (seepage)	1.00
160: Gianella loam, occasionally flooded-----	85	Limitations Piping	1.00	Limitations Permeability > 2"/hr (seepage)	1.00

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
161: Gianella fine sandy loam, rarely flooded-----	90	Limitations Seepage	0.10	Limitations Permeability > 2"/hr (seepage)	1.00
162: Gianella loam, rarely flooded----	90	Limitations Piping	1.00	Limitations Permeability > 2"/hr (seepage)	1.00
163yu: Holillipah loamy sand-----	85	No limitations		Limitations Permeability > 2"/hr (seepage)	1.00
165yu: Holland loam-----	40	Limitations Piping Shrink-swell (LEP 3-6)	0.85 0.50	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.50
Hoda loam-----	25	Limitations Shrink-swell (LEP 3-6) MH or CH Unified and PI <40%	0.50 0.50	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.50
Hotaw loam-----	20	Limitations Piping Thin layer Shrink-swell (LEP 3-6)	0.95 0.74 0.50	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	1.00 0.74 0.50
173yu: Hotaw loam-----	45	Limitations Piping Thin layer Shrink-swell (LEP 3-6)	0.95 0.74 0.50	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	1.00 0.74 0.50
Chawanakee gravelly sandy loam----	20	Limitations Thin layer	1.00	Limitations Permeability > 2"/hr (seepage) Depth to bedrock < 20" Slopes > 7%	1.00 1.00 1.00
Holland loam-----	15	Limitations Piping Shrink-swell (LEP 3-6)	0.85 0.50	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.50

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
175: Farwell clay loam, rarely flooded	85	Limitations Shrink-swell (LEP 3-6)	0.92	Limitations Permeability .6-2"/hr (seepage)	0.01
176: Farwell loam, occasionally flooded-----	85	Limitations Piping	0.15	Limitations Permeability .6-2"/hr (seepage)	0.92
176yu: Jocal loam-----	80	Limitations Shrink-swell (LEP 3-6) Piping	0.50 0.30	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.50
177: Farwell silt loam, occasionally flooded-----	85	No limitations		Limitations Permeability > 2"/hr (seepage)	1.00
178: Arbuckle gravelly loam-----	87	No limitations		Limitations Permeability .6-2"/hr (seepage)	0.68
179: Moda taxadjunct loam-----	65	Limitations Ponding (any duration) Saturation < 2' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Depth to pan 20 to 60" Permeability .6-2"/hr (seepage)	0.99 0.32
Arbuckle gravelly loam-----	20	No limitations		Limitations Permeability .6-2"/hr (seepage)	0.68
180: Dodgeland silty clay loam, occasionally flooded-----	85	Limitations Ponding (any duration) Saturation < 2' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	No limitations	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
181: Dodge land silty clay loam, frequently flooded-----	80	Limitations Ponding (any duration) Saturation < 2' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	No limitations	
188yu: Mariposa taxadjunct gravelly loam	80	Limitations Thin layer	0.99	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	1.00 0.99 0.50
189: Esquon silt loam, overwash-----	90	Limitations Ponding (any duration) Shrink-swell (LEP >6) Saturation between 2-4'	1.00 1.00 0.86	Limitations Permeability > 2"/hr (seepage)	1.00
189yu: Mariposa taxadjunct gravelly loam	80	Limitations Thin layer	0.99	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	1.00 0.99 0.50
196yu: Mildred cobbly loam-----	80	Limitations Shrink-swell (LEP >6) Thin layer MH or CH Unified and PI <40%	1.00 0.99 0.50	Limitations Slopes > 7% Depth to bedrock from 20-60"	1.00 0.99
200: Parrott silt loam, occasionally flooded-----	85	Limitations Ponding (any duration) Piping	1.00 0.78	Limitations Permeability .6-2"/hr (seepage)	0.98
201: Parrott silt loam, frequently flooded-----	85	Limitations Ponding (any duration) Piping	1.00 0.78	Limitations Permeability .6-2"/hr (seepage)	0.98

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
203: Kusalslough silty clay loam, occasionally flooded-----	85	Limitations Ponding (any duration) Shrink-swell (LEP >6) MH or CH Unified and PI <40%	1.00 1.00 0.50	No limitations	
205: Parrott silt loam, frequently flooded-----	50	Limitations Ponding (any duration) Piping	1.00 0.78	Limitations Permeability .6-2"/hr (seepage)	0.98
Vermet silt loam, frequently flooded-----	35	Limitations Ponding (any duration) Saturation < 2' depth Shrink-swell (LEP 3-6)	1.00 1.00 0.68	Limitations Permeability .6-2"/hr (seepage)	0.82
206: Islandbar sandy loam-----	60	No limitations		Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 0.99
Chawanakee gravelly sandy loam----	30	Limitations Thin layer	1.00	Limitations Permeability > 2"/hr (seepage) Depth to bedrock < 20" Slopes > 7%	1.00 1.00 0.99
207: Islandbar sandy loam-----	60	No limitations		Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
Chawanakee gravelly sandy loam----	30	Limitations Thin layer	1.00	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock < 20"	1.00 1.00 1.00
208: Islandbar sandy loam-----	60	No limitations		Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
208: Chawanakee gravelly sandy loam----	30	Limitations Thin layer	1.00	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock < 20"	1.00 1.00 1.00
209: Islandbar sandy loam-----	60	No limitations		Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
Chawanakee gravelly sandy loam----	30	Limitations Thin layer	1.00	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock < 20"	1.00 1.00 1.00
210: Featherfalls sandy loam-----	50	Limitations Shrink-swell (LEP 3-6)	0.92	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	0.99 0.68
Islandbar sandy loam-----	35	No limitations		Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 0.99
211: Featherfalls sandy loam-----	55	Limitations Shrink-swell (LEP 3-6)	0.92	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.68
Islandbar sandy loam-----	35	No limitations		Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
212: Featherfalls sandy loam-----	55	Limitations Shrink-swell (LEP 3-6)	0.92	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.68
Islandbar sandy loam-----	35	No limitations		Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
213:					
Featherfalls sandy loam-----	45	Limitations Shrink-swell (LEP 3-6)	0.92	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.68
Islandbar sandy loam-----	35	No limitations		Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
214:					
Crystalhill gravelly coarse sandy loam-----	35	Limitations Seepage	0.50	Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 1.00
Oregongulch gravelly sandy loam---	20	No limitations		Limitations Permeability > 2"/hr (seepage) Slopes > 7% Depth to bedrock from 20-60"	1.00 1.00 0.98
Craigsaddle coarse sandy loam----	20	No limitations		Limitations Permeability > 2"/hr (seepage) Slopes 2 to 7% Depth to bedrock from 20-60"	1.00 0.91 0.01
Rock outcrop, trondhemite-----	10	Not rated		Not rated	
215:					
Crystalhill gravelly coarse sandy loam-----	35	Limitations Seepage	0.50	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
Oregongulch gravelly sandy loam---	20	No limitations		Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.98
Craigsaddle coarse sandy loam----	20	No limitations		Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.01
Rock outcrop, trondhemite-----	10	Not rated		Not rated	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
216: Crystalhill gravelly coarse sandy loam-----	35	Limitations Seepage	0.50	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
Oregongulch gravelly sandy loam---	20	No limitations		Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.98
Craigsaddle coarse sandy loam-----	20	No limitations		Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.01
Rock outcrop, trondhemite-----	10	Not rated		Not rated	
217: Crystalhill gravelly coarse sandy loam-----	35	Limitations Seepage	0.50	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
Oregongulch gravelly sandy loam---	20	No limitations		Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.98
Craigsaddle coarse sandy loam-----	20	No limitations		Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.01
Rock outcrop, trondhemite-----	10	Not rated		Not rated	
218: Rock outcrop, quartz diorite-----	60	Not rated		Not rated	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
218: Lithic Xerorthents gravelly sandy loam-----	20	Not rated		Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00
Chawanakee gravelly sandy loam----	15	Limitations Thin layer	1.00	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock < 20"	1.00 1.00 1.00
219: Rock outcrop, quartz diorite-----	60	Not rated		Not rated	
Lithic Xerorthents gravelly sandy loam-----	20	Not rated		Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00
Chawanakee gravelly sandy loam----	15	Limitations Thin layer	1.00	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock < 20"	1.00 1.00 1.00
220: Esquon clay, frequently flooded---	60	Limitations Ponding (any duration) Saturation < 2' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Depth to pan 20 to 60"	0.11
Clear Lake silty clay loam, overwash-----	30	Limitations Ponding (any duration) Saturation < 2' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	No limitations	
221yu: Sites loam-----	85	Limitations Shrink-swell (LEP 3-6) MH or CH Unified and PI <40% Piping	0.50 0.50 0.19	Limitations Slopes 2 to 7% Permeability .6-2"/hr (seepage)	0.66 0.50

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
222yu: Sites loam-----	85	Limitations Shrink-swell (LEP 3-6) MH or CH Unified and PI <40% Piping	0.50 0.50 0.19	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.50
225yu: Sites gravelly loam, bedrock substratum-----	80	Limitations Shrink-swell (LEP 3-6) MH or CH Unified and PI <40% Thin layer	0.50 0.50 0.04	Limitations Slopes 2 to 7% Depth to bedrock from 20-60"	0.66 0.04
226yu: Sites gravelly loam, bedrock substratum-----	80	Limitations Shrink-swell (LEP 3-6) MH or CH Unified and PI <40% Thin layer	0.50 0.50 0.04	Limitations Slopes > 7% Depth to bedrock from 20-60"	1.00 0.04
227yu: Sites gravelly loam, bedrock substratum-----	80	Limitations Shrink-swell (LEP 3-6) MH or CH Unified and PI <40% Thin layer	0.50 0.50 0.04	Limitations Slopes > 7% Depth to bedrock from 20-60"	1.00 0.04
242yu: Surnuf loam-----	80	Limitations Thin layer Piping	1.00 1.00	Limitations Slopes > 7%	1.00
243yu: Surnuf loam-----	80	Limitations Thin layer Piping	1.00 1.00	Limitations Slopes > 7%	1.00
244yu: Surnuf loam-----	80	Limitations Thin layer Piping	1.00 1.00	Limitations Slopes > 7%	1.00

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
245: Surnuf loam-----	80	Limitations Thin layer Piping	1.00 1.00	Limitations Slopes > 7%	1.00
248yu: Trainer loam-----	85	No limitations		Limitations Permeability > 2"/hr (seepage)	1.00
250: Llanoseco, occasionally flooded---	90	Limitations Ponding (any duration) Shrink-swell (LEP >6) MH or CH Unified and PI <40%	1.00 1.00 0.50	No limitations	
252: Whitecabin silty clay, occasionally flooded-----	60	Limitations Ponding (any duration) Shrink-swell (LEP >6) Saturation between 2-4'	1.00 1.00 0.98	Limitations Depth to pan 20 to 60"	0.05
Ordferry silty clay, occasionally flooded-----	25	Limitations Ponding (any duration) Saturation < 2' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Depth to pan 20 to 60"	0.88
252yu: Woodleaf gravelly loam-----	80	Limitations Thin layer Fragments (>3") 15-35% Shrink-swell (LEP 3-6)	0.91 0.66 0.50	Limitations Slopes > 7% Depth to bedrock from 20-60"	1.00 0.91
253yu: Woodleaf gravelly loam-----	80	Limitations Thin layer Fragments (>3") 15-35% Shrink-swell (LEP 3-6)	0.91 0.66 0.50	Limitations Slopes > 7% Depth to bedrock from 20-60"	1.00 0.91

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
255: Whitecabin silty clay loam, occasionally flooded-----	60	Limitations Ponding (any duration) Shrink-swell (LEP >6) Saturation between 2-4'	1.00 1.00 0.98	Limitations Depth to pan 20 to 60"	0.29
Ordferry silty clay, occasionally flooded-----	30	Limitations Ponding (any duration) Saturation < 2' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Depth to pan 20 to 60"	0.88
256: Whitecabin silt loam, occasionally flooded-----	85	Limitations Ponding (any duration) Shrink-swell (LEP >6) Saturation between 2-4'	1.00 1.00 0.98	Limitations Depth to pan 20 to 60"	0.03
257: Llanoseco, frequently flooded----	90	Limitations Ponding (any duration) Shrink-swell (LEP >6) MH or CH Unified and PI <40%	1.00 1.00 0.50	No limitations	
258: Codora, occasionally flooded-----	85	Limitations Ponding (any duration) Shrink-swell (LEP 3-6) Saturation between 2-4'	1.00 0.78 0.32	No limitations	
260: Ordferry silty clay, occasionally flooded-----	90	Limitations Ponding (any duration) Saturation < 2' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Depth to pan 20 to 60"	0.88
280: Columbia taxadjunct stratified very fine sandy loam-----	80	Limitations Saturation < 2' depth Piping	1.00 1.00	Limitations Permeability > 2"/hr (seepage)	1.00

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
290: Perkins gravelly loam-----	90	No limitations		Limitations Permeability > 2"/hr (seepage)	1.00
300: Redsluff gravelly loam-----	80	Limitations Seepage Saturation between 2-4'	1.00 0.53	Limitations Permeability > 2"/hr (seepage)	1.00
301: Wafap gravelly loam-----	70	Limitations Saturation < 2' depth Shrink-swell (LEP >6) Fragments (>3") > 35%	1.00 1.00 1.00	Limitations Depth to pan 20 to 60"	0.22
Hamslough clay-----	15	Limitations Ponding (any duration) Saturation < 2' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Depth to pan 20 to 60"	0.93
302: Redtough loam-----	50	Limitations Thin layer Saturation < 2' depth Fragments (>3") 15-35%	1.00 1.00 0.30	Limitations Depth to pan < 20" Permeability .6-2"/hr (seepage)	1.00 0.01
Redswale cobbly loam-----	35	Limitations Ponding (any duration) Thin layer Saturation < 2' depth	1.00 1.00 1.00	Limitations Depth to pan < 20"	1.00
303: Munjar gravelly loam-----	60	Limitations Saturation < 2' depth Shrink-swell (LEP >6) Thin layer	1.00 1.00 0.83	Limitations Depth to pan 20 to 60" Permeability .6-2"/hr (seepage)	0.83 0.68
Tuscan taxadjunct gravelly clay loam-----	20	Limitations Saturation < 2' depth Shrink-swell (LEP >6) Thin layer	1.00 1.00 0.88	Limitations Depth to pan 20 to 60"	0.88

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
303: Galt clay-----	10	Limitations Ponding (any duration) Saturation < 2' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Depth to pan 20 to 60"	0.81
304: Redtough loam-----	80	Limitations Thin layer Fragments (>3") 15-35% Piping	1.00 0.30 0.18	Limitations Depth to pan < 20" Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 1.00 0.01
305: Redtough gravelly loam-----	45	Limitations Thin layer Saturation < 2' depth Piping	1.00 1.00 0.16	Limitations Depth to pan < 20" Permeability .6-2"/hr (seepage)	1.00 0.01
Redswale loam-----	25	Limitations Ponding (any duration) Thin layer Saturation < 2' depth	1.00 1.00 1.00	Limitations Depth to pan < 20"	1.00
Anita, gravelly duripan-----	20	Limitations Ponding (any duration) Thin layer Saturation < 2' depth	1.00 1.00 1.00	Limitations Depth to pan < 20"	1.00
306: Duric Xerarents, fill-----	50	Limitations Ponding (any duration) Saturation < 2' depth Thin layer	1.00 1.00 0.46	Limitations Permeability > 2"/hr (seepage) Depth to pan 20 to 60"	0.99 0.46
Duric Xerarents, cut-----	40	Limitations Ponding (any duration) Thin layer Saturation < 2' depth	1.00 1.00 1.00	Limitations Depth to pan < 20" Permeability > 2"/hr (seepage)	1.00 1.00

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
307: Duric Xerarents clay loam, leveled-----	70	Limitations Ponding (any duration) Thin layer Saturation < 2' depth	1.00 1.00 1.00	Limitations Depth to pan < 20"	1.00
310: Kimball loam-----	85	Limitations Thin layer Piping	1.00 0.47	Limitations Permeability .6-2"/hr (seepage)	0.32
317: Thompsonflat loam-----	75	Limitations Shrink-swell (LEP 3-6)	0.32	Limitations Permeability .6-2"/hr (seepage) Slopes 2 to 7%	0.32 0.31
318: Thompsonflat fine sandy loam-----	50	No limitations		Limitations Slopes 2 to 7%	0.31
Oroville gravelly fine sandy loam	40	Limitations Ponding (any duration) Saturation < 2' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Depth to pan 20 to 60" Slopes 2 to 7%	0.99 0.01
320: Vistarobles sandy loam-----	50	Limitations Ponding (any duration) Thin layer Saturation < 2' depth	1.00 1.00 1.00	Limitations Permeability > 2"/hr (seepage) Depth to pan < 20"	1.00 1.00
Redding loam-----	40	Limitations Saturation < 2' depth Thin layer	0.99 0.70	Limitations Depth to pan 20 to 60" Permeability .6-2"/hr (seepage)	0.70 0.68
321: Durixeralfs, fine-loamy, gravelly fine sandy loam-----	50	Limitations Saturation < 2' depth Thin layer	1.00 0.93	Limitations Depth to pan 20 to 60" Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	0.93 0.24 0.08

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
321: Durixeralfs, loamy-skeletal, gravelly fine sandy loam-----	20	Limitations Ponding (any duration) Thin layer Saturation < 2' depth	1.00 1.00 1.00	Limitations Depth to pan < 20" Depth to bedrock from 20-60"	1.00 0.93
Typic Petraquepts silty clay-----	15	Limitations Ponding (any duration) Thin layer Saturation < 2' depth	1.00 1.00 1.00	Limitations Depth to pan < 20" Depth to bedrock from 20-60"	1.00 0.88
330: Wilsoncreek loam, occasionally flooded-----	60	Limitations Piping	0.97	Limitations Permeability > 2"/hr (seepage)	1.00
Trainer loam, occasionally flooded-----	25	Limitations Piping Saturation between 2-4'	0.87 0.46	Limitations Permeability > 2"/hr (seepage)	1.00
331: Thompsonflat loam-----	85	Limitations Shrink-swell (LEP 3-6)	0.32	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.32
335: Galt clay loam-----	85	Limitations Ponding (any duration) Saturation < 2' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Depth to pan 20 to 60"	0.86
336: Galt clay-----	90	Limitations Ponding (any duration) Saturation < 2' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Depth to pan 20 to 60"	0.81
337: Galt clay loam-----	85	Limitations Ponding (any duration) Saturation < 2' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Depth to pan 20 to 60"	0.86

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
338: Oxyaquic Xerofluvents silt loam---	90	Limitations Ponding (any duration) Seepage Saturation between 2-4'	1.00 0.50 0.18	Limitations Permeability > 2"/hr (seepage)	1.00
339: Oxyaquic Xerofluvents sandy loam, frequently flooded-----	90	Limitations Ponding (any duration) Seepage Saturation between 2-4'	1.00 0.50 0.18	Limitations Permeability > 2"/hr (seepage)	1.00
340: Rock outcrop, Lovejoy basalt-----	35	Not rated		Not rated	
Thermalrocks very gravelly loam---	25	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.50	Limitations Depth to bedrock < 20" Slopes 2 to 7%	1.00 0.31
Campbellhills gravelly loam-----	20	Limitations Saturation < 2' depth Shrink-swell (LEP 3-6) Thin layer	1.00 0.82 0.11	Limitations Slopes 2 to 7% Depth to bedrock from 20-60"	0.31 0.11
341: Elsley loam-----	25	Limitations Saturation < 2' depth Fragments (>3") 15-35% Thin layer	1.00 0.90 0.56	Limitations Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage) Slopes 2 to 7%	0.56 0.02 0.01
Beatsonhollow gravelly loam-----	25	Limitations Ponding (any duration) Thin layer Saturation < 2' depth	1.00 1.00 1.00	Limitations Depth to bedrock < 20" Slopes 2 to 7% Permeability .6-2"/hr (seepage)	1.00 0.01 0.01
Campbellhills gravelly loam-----	20	Limitations Saturation < 2' depth Shrink-swell (LEP 3-6) Thin layer	1.00 0.82 0.11	Limitations Depth to bedrock from 20-60"	0.11
Rock outcrop, Lovejoy basalt-----	20	Not rated		Not rated	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
342:					
Thermalrocks very gravelly loam---	40	Limitations		Limitations	
		Thin layer	1.00	Depth to bedrock < 20"	1.00
		Fragments (>3") 15-35%	0.50	Slopes > 7%	1.00
Beatsonhollow taxadjunct fine sandy loam-----	35	Limitations		Limitations	
		Thin layer	1.00	Depth to bedrock < 20"	1.00
		Saturation < 2' depth	1.00	Permeability .6-2"/hr (seepage)	0.32
Rock outcrop, Lovejoy basalt-----	15	Not rated		Not rated	
343:					
Coalcanyon very cobbly loam-----	50	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
		Piping	0.22	Permeability .6-2"/hr (seepage)	0.08
		Shrink-swell (LEP 3-6)	0.18		
Coonhollow gravelly loam-----	35	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
		Piping	0.28	Depth to bedrock from 20-60"	0.26
		Thin layer	0.26	Permeability .6-2"/hr (seepage)	0.08
344:					
Coalcanyon very cobbly loam-----	45	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
		Piping	0.22	Permeability .6-2"/hr (seepage)	0.08
		Shrink-swell (LEP 3-6)	0.18		
Coonhollow gravelly loam-----	30	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
		Piping	0.28	Depth to bedrock from 20-60"	0.26
		Thin layer	0.26	Permeability .6-2"/hr (seepage)	0.08
Rock outcrop, Lovejoy basalt-----	15	Not rated		Not rated	
346:					
Cherotable loam-----	50	Limitations		Limitations	
		Shrink-swell (LEP >6)	1.00	Slopes 2 to 7%	0.31
		MH or CH Unified and PI <40%	0.50	Depth to bedrock from 20-60"	0.26
		Thin layer	0.26		

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
346: Elsey loam-----	35	Limitations Saturation < 2' depth Fragments (>3") 15-35% Thin layer	1.00 0.90 0.56	Limitations Depth to bedrock from 20-60" Slopes 2 to 7% Permeability .6-2"/hr (seepage)	0.56 0.31 0.02
347: Haplic Palexeralfs loam-----	90	Limitations Shrink-swell (LEP >6) Fragments (>3") 15-35%	0.99 0.17	Limitations Slopes 2 to 7%	0.31
353: Cherokeespring gravelly silt loam	80	Limitations Shrink-swell (LEP >6) MH or CH Unified and PI <40%	1.00 0.50	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.01
355: Coalcanyon very cobbly loam-----	55	Limitations Fragments (>3") > 35% Piping Shrink-swell (LEP 3-6)	1.00 0.22 0.18	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.08
Talus-----	35	Not rated		Not rated	
356: Coalcanyon very cobbly loam-----	45	Limitations Fragments (>3") > 35% Piping Shrink-swell (LEP 3-6)	1.00 0.22 0.18	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.08
Rock outcrop, basalt cliffs-----	20	Not rated		Not rated	
Talus-----	20	Not rated		Not rated	
Coonhollow gravelly loam-----	10	Limitations Fragments (>3") > 35% Piping Thin layer	1.00 0.28 0.26	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	1.00 0.26 0.08
360: Typic Xerofluvents, coarse-loamy--	45	Limitations Saturation between 2-4' Seepage	0.18 0.10	Limitations Permeability > 2"/hr (seepage)	1.00

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
360: Typic Xerofluvents, sandy-skeletal	40	Limitations Seepage Saturation between 2-4'	1.00 0.18	Limitations Permeability > 2"/hr (seepage)	1.00
361: Typic Xerofluvents, sandy-skeletal	85	Limitations Seepage Saturation between 2-4'	1.00 0.18	Limitations Permeability > 2"/hr (seepage)	1.00
362: Ultic Haploxeralfs, sandstone, low elevation, very deep-----	60	No limitations		Limitations Permeability > 2"/hr (seepage) Slopes 2 to 7%	1.00 0.01
Ultic Haploxeralfs, sandstone, low elevation, deep-----	25	Limitations Piping Thin layer	1.00 0.42	Limitations Permeability > 2"/hr (seepage) Depth to bedrock from 20-60" Slopes 2 to 7%	1.00 0.42 0.01
363: Ultic Haploxeralfs, sandstone, low elevation, very deep-----	60	No limitations		Limitations Permeability > 2"/hr (seepage) Slopes 2 to 7%	1.00 0.31
Ultic Haploxeralfs, sandstone, low elevation, deep-----	30	Limitations Piping Thin layer	1.00 0.42	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.42
364: Ultic Haploxeralfs, sandstone, low elevation, deep-----	50	Limitations Piping Thin layer	1.00 0.42	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.42

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
364: Ultic Haploxeralfs, sandstone, low elevation, very deep-----	40	No limitations		Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
365: Palexerults gravelly loam-----	80	Limitations Shrink-swell (LEP >6) MH or CH Unified and PI <40%	1.00 0.50	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.01
366: Palexerults gravelly loam-----	80	Limitations Shrink-swell (LEP >6) MH or CH Unified and PI <40%	1.00 0.50	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.01
370: Palexerults gravelly loam-----	80	Limitations Shrink-swell (LEP >6) MH or CH Unified and PI <40%	1.00 0.50	Limitations Slopes 2 to 7% Permeability .6-2"/hr (seepage)	0.91 0.01
375: Wickscorner loam-----	80	Limitations Shrink-swell (LEP >6)	1.00	Limitations Slopes 2 to 7%	0.31
376: Flagcanyon gravelly loam-----	50	Limitations Saturation < 2' depth Thin layer Shrink-swell (LEP 3-6)	0.99 0.86 0.32	Limitations Depth to pan 20 to 60" Slopes 2 to 7% Permeability .6-2"/hr (seepage)	0.86 0.08 0.01
Wickscorner loam-----	35	Limitations Shrink-swell (LEP >6)	1.00	Limitations Slopes 2 to 7%	0.01
377: Flagcanyon taxadjunct fine sandy loam-----	55	Limitations Ponding (any duration) Saturation < 2' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Depth to pan 20 to 60"	0.83

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
377:					
Durixeralfs, clayey-skeletal, loam	20	Limitations Ponding (any duration) Thin layer Saturation < 2' depth	1.00 1.00 1.00	Limitations Depth to pan < 20"	1.00
Duraquerts gravelly clay-----	15	Limitations Ponding (any duration) Saturation < 2' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Depth to pan 20 to 60"	0.99
400:					
Subaco taxadjunct clay-----	85	Limitations Ponding (any duration) Saturation < 2' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Depth to pan 20 to 60"	0.70
415:					
Ignord fine sandy loam-----	90	No limitations		Limitations Permeability > 2"/hr (seepage)	1.00
416:					
Calcic Haploxerolls sandy loam----	90	Limitations Piping Saturation between 2-4'	1.00 0.78	Limitations Permeability > 2"/hr (seepage)	1.00
418:					
Almendra loam-----	85	Limitations Piping	0.96	Limitations Permeability .6-2"/hr (seepage)	0.68
419:					
Conejo fine sandy loam, overwash--	85	Limitations Shrink-swell (LEP 3-6) Piping	0.78 0.08	Limitations Permeability > 2"/hr (seepage)	1.00
420:					
Conejo clay loam-----	85	Limitations Piping	0.06	Limitations Permeability > 2"/hr (seepage)	0.99
425:					
Vina fine sandy loam-----	85	Limitations Seepage	0.10	Limitations Permeability > 2"/hr (seepage)	1.00

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
426: Vina loam-----	85	Limitations Piping	1.00	Limitations Permeability .6-2"/hr (seepage)	0.92
439: Oxyaquic Xerofluvents clay-----	85	Limitations Ponding (any duration) Shrink-swell (LEP >6) Saturation < 2' depth	1.00 1.00 0.99	Limitations Permeability > 2"/hr (seepage)	1.00
440: Oxyaquic Xerofluvents silt loam, frequently flooded-----	80	Limitations Ponding (any duration) Saturation between 2-4' Piping	1.00 0.86 0.81	Limitations Permeability > 2"/hr (seepage)	1.00
441: Oxyaquic Xerofluvents very fine sandy loam-----	90	Limitations Ponding (any duration) Piping Saturation between 2-4'	1.00 0.98 0.86	Limitations Permeability > 2"/hr (seepage)	1.00
442: Durixerolls clay loam-----	55	Limitations Ponding (any duration) Saturation < 2' depth Thin layer	1.00 1.00 0.77	Limitations Depth to pan 20 to 60"	0.77
Haploxerolls clay loam-----	30	Limitations Saturation between 2-4' Piping Thin layer	0.86 0.05 0.01	Limitations Permeability .6-2"/hr (seepage) Depth to pan 20 to 60"	0.32 0.01
443: Durixerolls loam-----	60	Limitations Saturation < 2' depth Thin layer Piping	1.00 0.95 0.37	Limitations Depth to pan 20 to 60" Permeability .6-2"/hr (seepage)	0.95 0.87

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
443: Haploxerolls loam-----	25	Limitations Saturation between 2-4' Piping Thin layer	0.86 0.46 0.06	Limitations Permeability > 2"/hr (seepage) Depth to pan 20 to 60"	1.00 0.06
445: Chico loam-----	85	Limitations Piping Shrink-swell (LEP 3-6)	0.08 0.01	Limitations Permeability .6-2"/hr (seepage)	0.01
447: Charger fine sandy loam-----	80	Limitations Saturation between 2-4' Seepage	0.18 0.10	Limitations Permeability > 2"/hr (seepage)	1.00
448: Haploxerolls clay loam-----	75	No limitations		Limitations Permeability .6-2"/hr (seepage)	0.08
449: Haploxerolls loam-----	75	Limitations Piping	0.54	Limitations Permeability > 2"/hr (seepage)	1.00
500: Lofgren clay-----	45	Limitations Ponding (any duration) Saturation < 2' depth MH or CH Unified and PI >=40%	1.00 1.00 1.00	Limitations Depth to pan 20 to 60"	0.19
Blavo clay-----	40	Limitations Ponding (any duration) Saturation < 2' depth MH or CH Unified and PI >=40%	1.00 1.00 1.00	Limitations Depth to pan 20 to 60"	0.66
501: Lofgren clay, occasionally flooded-----	45	Limitations Ponding (any duration) Saturation < 2' depth MH or CH Unified and PI >=40%	1.00 1.00 1.00	Limitations Depth to pan 20 to 60"	0.26

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
501: Blavo clay, occasionally flooded--	40	Limitations Ponding (any duration) Saturation < 2' depth MH or CH Unified and PI >=40%	1.00 1.00 1.00	Limitations Depth to pan 20 to 60"	0.66
502: Blavo silt loam, overwash, occasionally flooded-----	80	Limitations Ponding (any duration) Saturation < 2' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Depth to pan 20 to 60"	0.66
519: Edjobe silty clay-----	85	Limitations Ponding (any duration) Shrink-swell (LEP >6) Saturation between 2-4'	1.00 1.00 0.86	No limitations	
520: Esquon clay-----	60	Limitations Ponding (any duration) Shrink-swell (LEP >6) Saturation between 2-4'	1.00 1.00 0.86	Limitations Permeability .6-2"/hr (seepage) Depth to pan 20 to 60"	0.32 0.01
Neerdobe clay-----	30	Limitations Ponding (any duration) Saturation < 2' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Permeability .6-2"/hr (seepage) Depth to pan 20 to 60"	0.92 0.56
521: Neerdobe silt loam, overwash-----	85	Limitations Ponding (any duration) Shrink-swell (LEP >6) Saturation between 2-4'	1.00 1.00 0.86	Limitations Permeability > 2"/hr (seepage) Depth to pan 20 to 60"	1.00 0.19
522: Clear Lake silty clay loam, overwash-----	80	Limitations Ponding (any duration) Saturation < 2' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	No limitations	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
523: Esquon silty clay loam, overwash--	80	Limitations Ponding (any duration) Saturation < 2' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Depth to pan 20 to 60"	0.22
525: Govstanford loam-----	85	Limitations Piping Saturation < 2' depth Thin layer	1.00 0.99 0.74	Limitations Permeability > 2"/hr (seepage)	1.00
526: Govstanford loam, occasionally flooded-----	85	Limitations Piping Saturation < 2' depth Thin layer	1.00 0.99 0.74	Limitations Permeability > 2"/hr (seepage)	1.00
528: Neerdobe clay loam-----	90	Limitations Ponding (any duration) Saturation < 2' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Depth to pan 20 to 60"	0.97
550: Dunstone loam, dry-----	60	Limitations Thin layer Piping	1.00 0.77	Limitations Depth to bedrock < 20" Permeability .6-2"/hr (seepage) Slopes 2 to 7%	1.00 0.68 0.66
Loafercreek silt loam, dry-----	20	Limitations Piping Thin layer	0.96 0.88	Limitations Permeability > 2"/hr (seepage) Slopes > 7% Depth to bedrock from 20-60"	0.99 0.99 0.88
551: Dunstone loam, dry-----	35	Limitations Thin layer Piping	1.00 0.77	Limitations Slopes > 7% Depth to bedrock < 20" Permeability .6-2"/hr (seepage)	1.00 1.00 0.68

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
551:					
Lomarica loam-----	15	Limitations Shrink-swell (LEP >6) Thin layer	1.00 0.81	Limitations Slopes > 7% Depth to bedrock from 20-60"	1.00 0.81
Argonaut taxadjunct loam-----	15	Limitations Shrink-swell (LEP >6) Thin layer MH or CH Unified and PI <40%	1.00 0.86 0.50	Limitations Slopes > 7% Depth to bedrock from 20-60"	1.00 0.86
552:					
Dunstone gravelly loam-----	45	Limitations Thin layer	1.00	Limitations Depth to bedrock < 20" Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.99 0.01
Loafercreek gravelly loam-----	40	Limitations Thin layer Piping	0.83 0.72	Limitations Permeability > 2"/hr (seepage) Slopes > 7% Depth to bedrock from 20-60"	1.00 0.99 0.83
553:					
Dunstone gravelly loam-----	45	Limitations Thin layer	1.00	Limitations Slopes > 7% Depth to bedrock < 20" Permeability .6-2"/hr (seepage)	1.00 1.00 0.01
Loafercreek gravelly loam-----	40	Limitations Thin layer Piping	0.83 0.72	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.83
554:					
Dunstone gravelly loam-----	45	Limitations Thin layer	1.00	Limitations Slopes > 7% Depth to bedrock < 20" Permeability .6-2"/hr (seepage)	1.00 1.00 0.01
Loafercreek gravelly loam-----	40	Limitations Thin layer Piping	0.83 0.72	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.83

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
555:					
Dunstone gravelly loam-----	45	Limitations Thin layer	1.00	Limitations Slopes > 7% Depth to bedrock < 20" Permeability .6-2"/hr (seepage)	1.00 1.00 0.01
Loafercreek gravelly loam-----	40	Limitations Thin layer Piping	0.83 0.72	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.83
556:					
Mounthope loam-----	50	Limitations Thin layer Shrink-swell (LEP 3-6)	0.06 0.06	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	0.99 0.06 0.01
Hartsmill gravelly loam-----	40	Limitations Shrink-swell (LEP >6) Fragments (>3") 15-35% MH or CH Unified and PI <40%	1.00 0.70 0.50	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	0.99 0.92
557:					
Mounthope loam-----	50	Limitations Thin layer Shrink-swell (LEP 3-6)	0.06 0.06	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	1.00 0.06 0.01
Hartsmill gravelly loam-----	40	Limitations Shrink-swell (LEP >6) Fragments (>3") 15-35% MH or CH Unified and PI <40%	1.00 0.70 0.50	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.92
558:					
Hartsmill gravelly loam-----	55	Limitations Shrink-swell (LEP >6) Fragments (>3") 15-35% MH or CH Unified and PI <40%	1.00 0.70 0.50	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.92
Mounthope loam-----	30	Limitations Thin layer Shrink-swell (LEP 3-6)	0.06 0.06	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	1.00 0.06 0.01

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
559:					
Hartsmill gravelly loam-----	55	Limitations Shrink-swell (LEP >6) Fragments (>3") 15-35% MH or CH Unified and PI <40%	1.00 0.70 0.50	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.92
Mounthope loam-----	30	Limitations Thin layer Shrink-swell (LEP 3-6)	0.06 0.06	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	1.00 0.06 0.01
560:					
Hartsmill gravelly loam-----	50	Limitations Shrink-swell (LEP >6) Fragments (>3") 15-35% MH or CH Unified and PI <40%	1.00 0.70 0.50	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.92
Mounthope loam-----	30	Limitations Thin layer Shrink-swell (LEP 3-6)	0.06 0.06	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	1.00 0.06 0.01
561:					
Bigridge loam-----	50	Limitations Thin layer	0.09	Limitations Permeability > 2"/hr (seepage) Slopes > 7% Depth to bedrock from 20-60"	0.99 0.99 0.09
Minniecreek loam-----	35	Limitations Thin layer Shrink-swell (LEP 3-6) Piping	0.81 0.50 0.01	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	0.99 0.81 0.01
562:					
Bigridge loam-----	50	Limitations Thin layer	0.09	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 0.99 0.09
Minniecreek loam-----	35	Limitations Thin layer Shrink-swell (LEP 3-6) Piping	0.81 0.50 0.01	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	1.00 0.81 0.01

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
563:					
Bigridge loam-----	50	Limitations Thin layer	0.09	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 0.99 0.09
Minniecreek loam-----	35	Limitations Thin layer Shrink-swell (LEP 3-6) Piping	0.81 0.50 0.01	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	1.00 0.81 0.01
564:					
Bigridge loam-----	50	Limitations Thin layer	0.09	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 0.99 0.09
Minniecreek loam-----	35	Limitations Thin layer Shrink-swell (LEP 3-6) Piping	0.81 0.50 0.01	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	1.00 0.81 0.01
565:					
Dunstone loam, dry-----	35	Limitations Thin layer Piping	1.00 0.77	Limitations Depth to bedrock < 20" Permeability .6-2"/hr (seepage) Slopes 2 to 7%	1.00 0.68 0.66
Argonaut taxadjunct loam-----	30	Limitations Shrink-swell (LEP >6) Thin layer MH or CH Unified and PI <40%	1.00 0.86 0.50	Limitations Slopes > 7% Depth to bedrock from 20-60"	0.99 0.86
Sunnyslope loam-----	20	Limitations Thin layer	1.00	Limitations Depth to bedrock < 20" Slopes 2 to 7%	1.00 0.91
566:					
Dunstone loam, dry-----	45	Limitations Thin layer Piping	1.00 0.77	Limitations Depth to bedrock < 20" Permeability .6-2"/hr (seepage) Slopes 2 to 7%	1.00 0.68 0.66

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
566:					
Loafercreek silt loam, dry-----	20	Limitations Piping Thin layer	0.96 0.88	Limitations Permeability > 2"/hr (seepage) Slopes > 7% Depth to bedrock from 20-60"	0.99 0.99 0.88
Katskillhill loam-----	15	Limitations Shrink-swell (LEP >6) MH or CH Unified and PI <40% Thin layer	1.00 0.50 0.37	Limitations Slopes > 7% Depth to bedrock from 20-60"	0.99 0.37
567:					
Dunstone loam, dry-----	40	Limitations Thin layer Piping	1.00 0.77	Limitations Depth to bedrock < 20" Permeability .6-2"/hr (seepage) Slopes 2 to 7%	1.00 0.68 0.66
Loafercreek silt loam, dry-----	25	Limitations Piping Thin layer	0.96 0.88	Limitations Permeability > 2"/hr (seepage) Slopes > 7% Depth to bedrock from 20-60"	0.99 0.99 0.88
Argonaut taxadjunct loam-----	20	Limitations Shrink-swell (LEP >6) Thin layer MH or CH Unified and PI <40%	1.00 0.86 0.50	Limitations Slopes > 7% Depth to bedrock from 20-60"	0.99 0.86
577:					
Parkshill coarse sandy loam-----	40	No limitations		Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 0.99
Flanly loam-----	25	Limitations Thin layer	0.99	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	0.99 0.99 0.82
Hurleton gravelly sandy loam-----	20	Limitations Thin layer	0.96	Limitations Permeability > 2"/hr (seepage) Slopes > 7% Depth to bedrock from 20-60"	1.00 1.00 0.96

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
578:					
Flanly loam-----	45	Limitations Thin layer	0.99	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	0.99 0.99 0.82
Swedesflat cobbly fine sandy loam	35	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.01	Limitations Depth to bedrock < 20" Slopes > 7%	1.00 1.00
580:					
Surnuf taxadjunct loam-----	40	Limitations Shrink-swell (LEP >6) MH or CH Unified and PI <40%	1.00 0.50	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	0.99 0.32
Griffgulch very gravelly silt loam	25	Limitations Shrink-swell (LEP >6) Fragments (>3") > 35% MH or CH Unified and PI <40%	1.00 1.00 0.50	Limitations Slopes > 7% Depth to bedrock from 20-60"	0.99 0.01
Rock outcrop, metavolcanic-----	20	Not rated		Not rated	
581:					
Surnuf taxadjunct loam-----	65	Limitations Shrink-swell (LEP >6) MH or CH Unified and PI <40%	1.00 0.50	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.32
Griffgulch very gravelly silt loam	20	Limitations Shrink-swell (LEP >6) Fragments (>3") > 35% MH or CH Unified and PI <40%	1.00 1.00 0.50	Limitations Slopes > 7% Depth to bedrock from 20-60"	1.00 0.01
582:					
Surnuf taxadjunct loam-----	50	Limitations Shrink-swell (LEP >6) MH or CH Unified and PI <40%	1.00 0.50	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.32
Griffgulch very gravelly silt loam	35	Limitations Shrink-swell (LEP >6) Fragments (>3") > 35% MH or CH Unified and PI <40%	1.00 1.00 0.50	Limitations Slopes > 7% Depth to bedrock from 20-60"	1.00 0.01

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
583:					
Surnuf taxadjunct loam-----	50	Limitations Shrink-swell (LEP >6) MH or CH Unified and PI <40%	1.00 0.50	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.32
Griffgulch very gravelly silt loam	35	Limitations Shrink-swell (LEP >6) Fragments (>3") > 35% MH or CH Unified and PI <40%	1.00 1.00 0.50	Limitations Slopes > 7% Depth to bedrock from 20-60"	1.00 0.01
584:					
Flanly loam-----	35	Limitations Thin layer	0.99	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	1.00 0.99 0.82
Swedesflat cobbly fine sandy loam	30	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.01	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00
Rackerby very gravelly sandy loam	25	Limitations Thin layer	1.00	Limitations Slopes > 7% Depth to bedrock < 20" Permeability .6-2"/hr (seepage)	1.00 1.00 0.92
585:					
Flanly loam-----	45	Limitations Thin layer	0.99	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	0.99 0.99 0.82
Sommeysflat loam-----	35	Limitations Piping	0.75	Limitations Permeability .6-2"/hr (seepage) Slopes 2 to 7%	0.98 0.31
586:					
Sommeysflat loam-----	45	Limitations Piping	0.75	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.98
Mounthope loam-----	40	Limitations Thin layer Shrink-swell (LEP 3-6)	0.06 0.06	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	1.00 0.06 0.01

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
587:					
Sommeyleft loam-----	35	Limitations Piping	0.75	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.98
Mounthope loam-----	30	Limitations Thin layer Shrink-swell (LEP 3-6)	0.06 0.06	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	1.00 0.06 0.01
Hurleton gravelly sandy loam-----	25	Limitations Thin layer	0.96	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.96
588:					
Ultic Haploxeralfs, thermic, high terrace-----	95	Limitations Saturation < 2' depth Thin layer	1.00 0.81	Limitations Slopes 2 to 7% Permeability .6-2"/hr (seepage)	0.91 0.08
589:					
Ultic Haploxeralfs, thermic, high terrace-----	95	Limitations Saturation < 2' depth Thin layer	1.00 0.81	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.08
590:					
Vistarobles sandy loam-----	30	Limitations Ponding (any duration) Thin layer Saturation < 2' depth	1.00 1.00 1.00	Limitations Permeability > 2"/hr (seepage) Depth to pan < 20"	1.00 1.00
Redding loam-----	25	Limitations Saturation < 2' depth Thin layer	0.99 0.70	Limitations Depth to pan 20 to 60" Permeability .6-2"/hr (seepage)	0.70 0.68
Argonaut taxadjunct loam-----	20	Limitations Shrink-swell (LEP >6) Thin layer MH or CH Unified and PI <40%	1.00 0.86 0.50	Limitations Depth to bedrock from 20-60" Slopes 2 to 7%	0.86 0.08

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
590: Haploxererts gravelly silty clay--	15	Limitations Ponding (any duration) Saturation < 2' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Depth to bedrock from 20-60" Slopes 2 to 7%	0.42 0.31
603: Oroville gravelly fine sandy loam	30	Limitations Ponding (any duration) Saturation < 2' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Depth to pan 20 to 60" Slopes 2 to 7%	0.99 0.01
Thermalito sandy loam-----	25	Limitations Saturation < 2' depth Thin layer Shrink-swell (LEP 3-6)	1.00 0.83 0.06	Limitations Depth to pan 20 to 60" Slopes 2 to 7%	0.83 0.01
Fernandez sandy loam-----	15	Limitations Shrink-swell (LEP >6) Saturation between 2-4'	1.00 0.18	No limitations	
Thompsonflat fine sandy loam-----	15	No limitations		Limitations Slopes 2 to 7%	0.31
605: Duric Xerarents fine sandy loam, leveled-----	75	Limitations Ponding (any duration) Thin layer Saturation < 2' depth	1.00 1.00 1.00	Limitations Depth to pan < 20"	1.00
Oroville gravelly fine sandy loam	20	Limitations Ponding (any duration) Saturation < 2' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Depth to pan 20 to 60"	0.99
606: Redtough loam-----	45	Limitations Thin layer Saturation < 2' depth Fragments (>3") 15-35%	1.00 1.00 0.30	Limitations Depth to pan < 20" Permeability .6-2"/hr (seepage)	1.00 0.01

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
606:					
Fallager loam-----	30	Limitations		Limitations	
		Ponding (any duration)	1.00	Depth to pan < 20"	1.00
		Thin layer	1.00		
		Saturation < 2' depth	1.00		
Anita, gravelly duripan-----	15	Limitations		Limitations	
		Ponding (any duration)	1.00	Depth to pan < 20"	1.00
		Thin layer	1.00		
		Saturation < 2' depth	1.00		
609:					
Anita, gravelly duripan-----	50	Limitations		Limitations	
		Ponding (any duration)	1.00	Depth to pan < 20"	1.00
		Thin layer	1.00		
		Saturation < 2' depth	1.00		
Tuscan taxadjunct gravelly clay loam-----	40	Limitations		Limitations	
		Saturation < 2' depth	1.00	Depth to pan 20 to 60"	0.88
		Shrink-swell (LEP >6)	1.00		
		Thin layer	0.88		
614:					
Doemill gravelly loam-----	50	Limitations		Limitations	
		Thin layer	1.00	Depth to bedrock < 20"	1.00
		Saturation < 2' depth	1.00	Permeability .6-2"/hr (seepage)	0.32
		Piping	0.86		
Jokerst very cobbly loam-----	40	Limitations		Limitations	
		Ponding (any duration)	1.00	Depth to bedrock < 20"	1.00
		Thin layer	1.00		
		Saturation < 2' depth	1.00		
615:					
Doemill gravelly loam-----	50	Limitations		Limitations	
		Thin layer	1.00	Depth to bedrock < 20"	1.00
		Saturation < 2' depth	1.00	Permeability .6-2"/hr (seepage)	0.32
		Piping	0.86	Slopes 2 to 7%	0.01
Jokerst very cobbly loam-----	40	Limitations		Limitations	
		Ponding (any duration)	1.00	Depth to bedrock < 20"	1.00
		Thin layer	1.00	Slopes 2 to 7%	0.01
		Saturation < 2' depth	1.00		

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
616:					
Jokerst very cobbly loam-----	35	Limitations		Limitations	
		Thin layer	1.00	Depth to bedrock < 20"	1.00
		Saturation < 2' depth	1.00	Slopes > 7%	1.00
		Piping	0.98		
Doemill gravelly loam-----	35	Limitations		Limitations	
		Thin layer	1.00	Depth to bedrock < 20"	1.00
		Saturation < 2' depth	1.00	Slopes > 7%	1.00
		Piping	0.86	Permeability .6-2"/hr (seepage)	0.32
Typic Haploxeralfs gravelly loam--	15	Limitations		Limitations	
		Shrink-swell (LEP 3-6)	0.78	Slopes > 7%	1.00
		Fragments (>3") 15-35%	0.13		
617:					
Doemill gravelly loam-----	35	Limitations		Limitations	
		Thin layer	1.00	Slopes > 7%	1.00
		Saturation < 2' depth	1.00	Depth to bedrock < 20"	1.00
		Piping	0.86	Permeability .6-2"/hr (seepage)	0.32
Jokerst very cobbly loam-----	30	Limitations		Limitations	
		Thin layer	1.00	Slopes > 7%	1.00
		Saturation < 2' depth	1.00	Depth to bedrock < 20"	1.00
		Piping	0.98		
Typic Haploxeralfs gravelly loam--	20	Limitations		Limitations	
		Shrink-swell (LEP 3-6)	0.78	Slopes > 7%	1.00
		Fragments (>3") 15-35%	0.13		
619:					
Carhart taxadjunct clay-----	90	Limitations		Limitations	
		Ponding (any duration)	1.00	Depth to bedrock < 20"	1.00
		Thin layer	1.00		
		Saturation < 2' depth	1.00		
620:					
Doemill gravelly loam-----	40	Limitations		Limitations	
		Thin layer	1.00	Depth to bedrock < 20"	1.00
		Saturation < 2' depth	1.00	Permeability .6-2"/hr (seepage)	0.32
		Piping	0.86	Slopes 2 to 7%	0.31

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
620:					
Jokerst very cobbly loam-----	25	Limitations		Limitations	
		Ponding (any duration)	1.00	Depth to bedrock < 20"	1.00
		Thin layer	1.00	Slopes 2 to 7%	0.31
		Saturation < 2' depth	1.00		
Ultic Haploxeralfs, thermic, gravelly loam-----	20	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Depth to bedrock from 20-60"	0.83
		Saturation between 2-4'	0.89	Slopes 2 to 7%	0.08
		Thin layer	0.83		
621:					
Doemill gravelly loam-----	30	Limitations		Limitations	
		Thin layer	1.00	Depth to bedrock < 20"	1.00
		Saturation < 2' depth	1.00	Slopes > 7%	1.00
		Piping	0.86	Permeability .6-2"/hr (seepage)	0.32
Jokerst very cobbly loam-----	30	Limitations		Limitations	
		Thin layer	1.00	Depth to bedrock < 20"	1.00
		Saturation < 2' depth	1.00	Slopes > 7%	1.00
		Piping	0.98		
Ultic Haploxeralfs, thermic, gravelly loam-----	20	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
		Saturation between 2-4'	0.86	Depth to bedrock from 20-60"	0.83
		Thin layer	0.83		
622:					
Xerorthents, shallow-----	40	Limitations		Limitations	
		Thin layer	1.00	Slopes > 7%	1.00
		Shrink-swell (LEP >6)	1.00	Depth to bedrock < 20"	1.00
		Fragments (>3") 15-35%	0.13		
Typic Haploxeralfs gravelly loam--	30	Limitations		Limitations	
		Shrink-swell (LEP 3-6)	0.78	Slopes > 7%	1.00
		Thin layer	0.46	Depth to bedrock from 20-60"	0.46
		Fragments (>3") 15-35%	0.13		
Rock outcrop, mudflow-breccia cliffs-----	15	Not rated		Not rated	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
623: Xerorthents, shallow-----	40	Limitations Thin layer Shrink-swell (LEP >6) Fragments (>3") 15-35%	1.00 1.00 0.13	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00
Typic Haploxeralfs gravelly loam--	25	Limitations Shrink-swell (LEP 3-6) Thin layer Fragments (>3") 15-35%	0.78 0.46 0.13	Limitations Slopes > 7% Depth to bedrock from 20-60"	1.00 0.46
Rock outcrop, mudflow-breccia cliffs-----	20	Not rated		Not rated	
624: Ultic Haploxeralfs, mesic, gravelly loam-----	60	Limitations Fragments (>3") > 35% Piping Shrink-swell (LEP 3-6)	1.00 0.69 0.50	Limitations Depth to bedrock from 20-60" Slopes 2 to 7%	0.37 0.08
Rockstripe very gravelly loam-----	25	Limitations Thin layer Fragments (>3") 15-35% Piping	1.00 0.60 0.40	Limitations Depth to bedrock < 20" Slopes 2 to 7%	1.00 0.31
625: Ultic Haploxeralfs, mesic, gravelly loam-----	50	Limitations Fragments (>3") > 35% Piping Shrink-swell (LEP 3-6)	1.00 0.69 0.50	Limitations Slopes > 7% Depth to bedrock from 20-60"	1.00 0.37
Rockstripe very gravelly loam-----	35	Limitations Thin layer Fragments (>3") 15-35% Piping	1.00 0.60 0.40	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00
626: Ultic Haploxeralfs gravelly loam--	40	Limitations Shrink-swell (LEP >6) Thin layer	1.00 0.16	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	1.00 0.16 0.01

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
626:					
Rockstripe very gravelly loam-----	35	Limitations Thin layer Fragments (>3") 15-35% Piping	1.00 0.60 0.40	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00
Rock outcrop, mudflow-breccia cliffs-----	15	Not rated		Not rated	
627:					
Ultic Haploxeralfs gravelly loam--	40	Limitations Shrink-swell (LEP >6) Thin layer	1.00 0.16	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	1.00 0.16 0.01
Rockstripe very gravelly loam-----	35	Limitations Thin layer Fragments (>3") 15-35% Piping	1.00 0.60 0.40	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00
Rock outcrop, mudflow-breccia cliffs-----	15	Not rated		Not rated	
628:					
Rockstripe very gravelly loam-----	40	Limitations Thin layer Fragments (>3") 15-35% Piping	1.00 0.60 0.40	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00
Ultic Haploxeralfs gravelly loam--	35	Limitations Shrink-swell (LEP >6) Thin layer	1.00 0.16	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	1.00 0.16 0.01
Rock outcrop, mudflow-breccia cliffs-----	20	Not rated		Not rated	
629:					
Slideland gravelly loam-----	80	Limitations Shrink-swell (LEP >6)	1.00	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.01

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
630: Slideland gravelly loam-----	80	Limitations Shrink-swell (LEP >6)	1.00	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.01
631: Slideland gravelly loam-----	80	Limitations Shrink-swell (LEP >6)	1.00	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.01
632: Ultic Haploxeralfs, conglomerate, very deep-----	50	Limitations Shrink-swell (LEP 3-6) Piping Fragments (>3") 15-35%	0.50 0.19 0.13	Limitations Slopes > 7%	1.00
Ultic Haploxeralfs, conglomerate, moderately deep-----	40	Limitations Fragments (>3") > 35% Thin layer Shrink-swell (LEP 3-6)	0.99 0.96 0.22	Limitations Depth to bedrock from 20-60" Slopes 2 to 7%	0.96 0.66
633: Ultic Haploxeralfs, conglomerate, very deep-----	60	Limitations Shrink-swell (LEP 3-6) Piping Fragments (>3") 15-35%	0.50 0.19 0.13	Limitations Slopes > 7%	1.00
Ultic Haploxeralfs, conglomerate, moderately deep-----	30	Limitations Fragments (>3") > 35% Thin layer Shrink-swell (LEP 3-6)	0.99 0.96 0.22	Limitations Slopes > 7% Depth to bedrock from 20-60"	1.00 0.96
634: Ultic Haploxeralfs, conglomerate, very deep-----	60	Limitations Shrink-swell (LEP 3-6) Piping Fragments (>3") 15-35%	0.50 0.19 0.13	Limitations Slopes > 7%	1.00

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
634: Ultic Haploxeralfs, conglomerate, moderately deep-----	30	Limitations Fragments (>3") > 35% Thin layer Shrink-swell (LEP 3-6)	0.99 0.96 0.22	Limitations Slopes > 7% Depth to bedrock from 20-60"	1.00 0.96
635: Ultic Haploxeralfs, conglomerate, very deep-----	50	Limitations Shrink-swell (LEP 3-6) Piping Fragments (>3") 15-35%	0.50 0.20 0.13	Limitations Slopes > 7%	1.00
Ultic Haploxeralfs, conglomerate, moderately deep-----	40	Limitations Fragments (>3") > 35% Thin layer Shrink-swell (LEP 3-6)	0.99 0.96 0.22	Limitations Slopes > 7% Depth to bedrock from 20-60"	1.00 0.96
636: Ultic Haploxeralfs, conglomerate, moderately deep-----	50	Limitations Fragments (>3") > 35% Thin layer Shrink-swell (LEP 3-6)	0.99 0.96 0.22	Limitations Slopes > 7% Depth to bedrock from 20-60"	1.00 0.96
Ultic Haploxeralfs, conglomerate, very deep-----	40	Limitations Shrink-swell (LEP 3-6) Piping Fragments (>3") 15-35%	0.50 0.20 0.13	Limitations Slopes > 7%	1.00
637: Ultic Haploxeralfs, sandstone----	80	No limitations		Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	0.99 0.50
638: Ultic Haploxeralfs, sandstone----	80	No limitations		Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.50

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
639: Ultic Haploxeralfs, sandstone-----	75	No limitations		Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.50
640: Ultic Haploxeralfs, sandstone-----	75	No limitations		Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.50
641: Ultic Haploxeralfs, sandstone-----	75	No limitations		Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.50
642: Chinacamp gravelly loam-----	70	Limitations Shrink-swell (LEP >6) Fragments (>3") 15-35%	1.00 0.39	Limitations Slopes 2 to 7%	0.31
643: Chinacamp gravelly loam-----	70	Limitations Shrink-swell (LEP >6) Fragments (>3") 15-35%	1.00 0.39	Limitations Slopes > 7%	1.00
644: Chinacamp gravelly loam-----	70	Limitations Shrink-swell (LEP >6) Fragments (>3") 15-35%	1.00 0.39	Limitations Slopes > 7%	1.00
645: Chinacamp gravelly loam-----	70	Limitations Shrink-swell (LEP >6) Fragments (>3") 15-35%	1.00 0.39	Limitations Slopes > 7%	1.00
646: Coalcanyon taxadjunct very gravelly loam-----	80	Limitations Fragments (>3") > 35% Shrink-swell (LEP 3-6)	0.99 0.78	Limitations Slopes 2 to 7% Permeability .6-2"/hr (seepage)	0.31 0.01

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
647: Coalcanyon taxadjunct very gravelly loam-----	75	Limitations Fragments (>3") > 35% Shrink-swell (LEP 3-6)	0.99 0.78	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.01
648: Coalcanyon taxadjunct very gravelly loam-----	80	Limitations Fragments (>3") > 35% Shrink-swell (LEP 3-6)	0.99 0.78	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.01
649: Coalcanyon taxadjunct very gravelly loam-----	75	Limitations Fragments (>3") > 35% Shrink-swell (LEP 3-6)	0.99 0.78	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.01
650: Schott very gravelly loam-----	65	Limitations Fragments (>3") > 35% Shrink-swell (LEP 3-6) Thin layer	1.00 0.78 0.11	Limitations Slopes 2 to 7% Depth to bedrock from 20-60"	0.31 0.11
651: Schott very gravelly loam-----	65	Limitations Fragments (>3") > 35% Shrink-swell (LEP 3-6) Thin layer	1.00 0.78 0.11	Limitations Slopes > 7% Depth to bedrock from 20-60"	1.00 0.11
652: Schott very gravelly loam-----	65	Limitations Fragments (>3") > 35% Shrink-swell (LEP 3-6) Thin layer	1.00 0.78 0.11	Limitations Slopes > 7% Depth to bedrock from 20-60"	1.00 0.11
Rock outcrop, mudflow breccia----	20	Not rated		Not rated	
654: Coridge bouldery loam-----	70	Limitations Saturation < 2' depth Shrink-swell (LEP >6) Thin layer	1.00 1.00 0.98	Limitations Depth to bedrock from 20-60" Slopes 2 to 7%	0.98 0.91

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
654: Rock outcrop, Cohasset basalt-----	20	Not rated		Not rated	
655: Coridge bouldery loam-----	70	Limitations Shrink-swell (LEP >6) Saturation < 2' depth Thin layer	1.00 0.99 0.98	Limitations Slopes > 7% Depth to bedrock from 20-60"	1.00 0.98
Rock outcrop, Cohasset basalt-----	20	Not rated		Not rated	
656: Rock outcrop, basalt cliffs-----	40	Not rated		Not rated	
Coalcanyon taxadjunct very gravelly loam-----	40	Limitations Fragments (>3") > 35% Shrink-swell (LEP 3-6)	0.99 0.78	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.01
657: Bonneyridge sandy loam-----	35	Limitations Seepage	0.50	Limitations Permeability > 2"/hr (seepage) Slopes 2 to 7%	1.00 0.91
Chawanakee gravelly sandy loam----	30	Limitations Thin layer	1.00	Limitations Permeability > 2"/hr (seepage) Depth to bedrock < 20" Slopes 2 to 7%	1.00 1.00 0.91
Rock outcrop, quartz diorite-----	20	Not rated		Not rated	
658: Bonneyridge sandy loam-----	35	Limitations Seepage	0.50	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
Chawanakee gravelly sandy loam----	30	Limitations Thin layer	1.00	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock < 20"	1.00 1.00 1.00
Rock outcrop, quartz diorite-----	25	Not rated		Not rated	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
659:					
Bonneyridge sandy loam-----	35	Limitations Seepage	0.50	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
Chawanakee gravelly sandy loam----	30	Limitations Thin layer	1.00	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock < 20"	1.00 1.00 1.00
Rock outcrop, quartz diorite-----	25	Not rated		Not rated	
660:					
Bonneyridge sandy loam-----	30	Limitations Seepage	0.50	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
Chawanakee gravelly sandy loam----	30	Limitations Thin layer	1.00	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock < 20"	1.00 1.00 1.00
Rock outcrop, quartz diorite-----	30	Not rated		Not rated	
661:					
Millerridge gravelly sandy clay loam-----	45	Limitations Shrink-swell (LEP >6) Thin layer Fragments (>3") 15-35%	1.00 0.94 0.30	Limitations Depth to bedrock from 20-60" Slopes 2 to 7%	0.94 0.31
Boxrobber cobbly sandy clay loam--	40	Limitations Thin layer Shrink-swell (LEP >6) Fragments (>3") 15-35%	1.00 0.99 0.72	Limitations Depth to bedrock < 20" Slopes 2 to 7%	1.00 0.31
662:					
Millerridge gravelly sandy clay loam-----	45	Limitations Shrink-swell (LEP >6) Thin layer Fragments (>3") 15-35%	1.00 0.94 0.30	Limitations Slopes > 7% Depth to bedrock from 20-60"	1.00 0.94

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
662: Boxrobber cobbly sandy clay loam--	40	Limitations Thin layer Shrink-swell (LEP >6) Fragments (>3") 15-35%	1.00 0.99 0.72	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00
663: Millerridge gravelly sandy clay loam-----	45	Limitations Shrink-swell (LEP >6) Thin layer Fragments (>3") 15-35%	1.00 0.94 0.30	Limitations Slopes > 7% Depth to bedrock from 20-60"	1.00 0.94
Boxrobber cobbly sandy clay loam--	40	Limitations Thin layer Shrink-swell (LEP >6) Fragments (>3") 15-35%	1.00 0.99 0.72	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00
664: Millerridge gravelly sandy clay loam-----	45	Limitations Shrink-swell (LEP >6) Thin layer Fragments (>3") 15-35%	1.00 0.94 0.30	Limitations Slopes > 7% Depth to bedrock from 20-60"	1.00 0.94
Boxrobber cobbly sandy clay loam--	40	Limitations Thin layer Shrink-swell (LEP >6) Fragments (>3") 15-35%	1.00 0.99 0.72	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00
665: Surnuf gravelly loam-----	40	Limitations Shrink-swell (LEP >6) MH or CH Unified and PI <40%	1.00 0.50	Limitations Slopes > 7%	0.99
Bigridge loam-----	40	Limitations Thin layer	0.09	Limitations Permeability > 2"/hr (seepage) Slopes > 7% Depth to bedrock from 20-60"	0.99 0.99 0.09

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
666: Surnuf gravelly loam-----	40	Limitations Shrink-swell (LEP >6) MH or CH Unified and PI <40%	1.00 0.50	Limitations Slopes > 7%	1.00
Bigridge loam-----	40	Limitations Thin layer	0.09	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 0.99 0.09
667: Surnuf gravelly loam-----	40	Limitations Shrink-swell (LEP >6) MH or CH Unified and PI <40%	1.00 0.50	Limitations Slopes > 7%	1.00
Bigridge loam-----	40	Limitations Thin layer	0.09	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 0.99 0.09
668: Surnuf gravelly loam-----	40	Limitations Shrink-swell (LEP >6) MH or CH Unified and PI <40%	1.00 0.50	Limitations Slopes > 7%	1.00
Bigridge loam-----	40	Limitations Thin layer	0.09	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 0.99 0.09
669: Oroshore gravelly loam-----	35	Limitations Shrink-swell (LEP >6) Fragments (>3") 15-35% Thin layer	1.00 0.77 0.74	Limitations Slopes > 7% Depth to bedrock from 20-60"	0.99 0.74
Mounthope loam-----	25	Limitations Thin layer Shrink-swell (LEP 3-6)	0.06 0.06	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	0.99 0.06 0.01

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
669: Dunstone gravelly loam-----	20	Limitations Thin layer	1.00	Limitations Depth to bedrock < 20" Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.99 0.01
670: Oroshore gravelly loam-----	35	Limitations Shrink-swell (LEP >6) Fragments (>3") 15-35% Thin layer	1.00 0.77 0.74	Limitations Slopes > 7% Depth to bedrock from 20-60"	1.00 0.74
Mounthope loam-----	25	Limitations Thin layer Shrink-swell (LEP 3-6)	0.06 0.06	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	1.00 0.06 0.01
Dunstone gravelly loam-----	20	Limitations Thin layer	1.00	Limitations Slopes > 7% Depth to bedrock < 20" Permeability .6-2"/hr (seepage)	1.00 1.00 0.01
671: Oroshore gravelly loam-----	35	Limitations Shrink-swell (LEP >6) Fragments (>3") 15-35% Thin layer	1.00 0.77 0.74	Limitations Slopes > 7% Depth to bedrock from 20-60"	1.00 0.74
Mounthope loam-----	25	Limitations Thin layer Shrink-swell (LEP 3-6)	0.06 0.06	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	1.00 0.06 0.01
Dunstone gravelly loam-----	20	Limitations Thin layer	1.00	Limitations Slopes > 7% Depth to bedrock < 20" Permeability .6-2"/hr (seepage)	1.00 1.00 0.01
672: Oroshore gravelly loam-----	30	Limitations Shrink-swell (LEP >6) Fragments (>3") 15-35% Thin layer	1.00 0.77 0.74	Limitations Slopes > 7% Depth to bedrock from 20-60"	1.00 0.74

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
672:					
Mounthope loam-----	25	Limitations		Limitations	
		Thin layer	0.06	Slopes > 7%	1.00
		Shrink-swell (LEP 3-6)	0.06	Depth to bedrock from 20-60"	0.06
				Permeability .6-2"/hr (seepage)	0.01
Dunstone gravelly loam-----	25	Limitations		Limitations	
		Thin layer	1.00	Slopes > 7%	1.00
				Depth to bedrock < 20"	1.00
				Permeability .6-2"/hr (seepage)	0.01
674:					
Chawanakee gravelly sandy loam----	30	Limitations		Limitations	
		Thin layer	1.00	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
				Depth to bedrock < 20"	1.00
Bonneyridge sandy loam-----	30	Limitations		Limitations	
		Seepage	0.50	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
Rock outcrop, quartz diorite-----	30	Not rated		Not rated	
675:					
Clearhayes sandy clay loam-----	70	Limitations		Limitations	
		Saturation < 2' depth	1.00	Permeability > 2"/hr (seepage)	1.00
		Seepage	1.00	Depth to bedrock from 20-60"	0.22
		Fragments (>3") 15-35%	0.61		
Hamslough clay-----	15	Limitations		Limitations	
		Ponding (any duration)	1.00	Depth to pan 20 to 60"	0.93
		Saturation < 2' depth	1.00		
		Shrink-swell (LEP >6)	1.00		
676:					
Carhart clay-----	50	Limitations		Limitations	
		Ponding (any duration)	1.00	Depth to bedrock from 20-60"	0.86
		Saturation < 2' depth	1.00	Slopes 2 to 7%	0.01
		Shrink-swell (LEP >6)	1.00		

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
676: Anita taxadjunct clay-----	40	Limitations Ponding (any duration) Thin layer Saturation < 2' depth	1.00 1.00 1.00	Limitations Depth to bedrock < 20"	1.00
677: Tuscan gravelly loam-----	40	Limitations Thin layer Saturation < 2' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Depth to pan < 20" Depth to bedrock from 20-60"	1.00 0.70
Fallager loam-----	25	Limitations Ponding (any duration) Thin layer Saturation < 2' depth	1.00 1.00 1.00	Limitations Depth to pan < 20" Depth to bedrock from 20-60"	1.00 0.83
Anita, gravelly duripan-----	15	Limitations Ponding (any duration) Thin layer Saturation < 2' depth	1.00 1.00 1.00	Limitations Depth to pan < 20" Depth to bedrock from 20-60"	1.00 0.52
679: Lucksev loam-----	40	Limitations Thin layer Saturation < 2' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Depth to bedrock < 20" Slopes 2 to 7%	1.00 0.01
Butteside gravelly loam-----	35	Limitations Shrink-swell (LEP >6) Thin layer MH or CH Unified and PI <40%	1.00 0.93 0.50	Limitations Depth to bedrock from 20-60" Slopes 2 to 7%	0.93 0.91
Carhart clay-----	15	Limitations Saturation < 2' depth Shrink-swell (LEP >6) MH or CH Unified and PI >=40%	1.00 1.00 1.00	Limitations Depth to bedrock from 20-60" Slopes 2 to 7%	0.86 0.31
680: Lucksev loam-----	45	Limitations Thin layer Shrink-swell (LEP >6) MH or CH Unified and PI <40%	1.00 1.00 0.50	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
680: Butteside gravelly loam-----	40	Limitations Shrink-swell (LEP >6) Thin layer MH or CH Unified and PI <40%	1.00 0.93 0.50	Limitations Slopes > 7% Depth to bedrock from 20-60"	1.00 0.93
683: Typic Haploxeralfs, magnesian, low elevation-----	50	Limitations Shrink-swell (LEP >6) Thin layer Fragments (>3") 15-35%	1.00 0.86 0.66	Limitations Slopes > 7% Depth to bedrock from 20-60"	0.99 0.86
Earlal very gravelly loam-----	20	Limitations Thin layer Fragments (>3") > 35% Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Depth to bedrock < 20" Slopes > 7%	1.00 1.00
Rock outcrop, serpentinite-----	15	Not rated		Not rated	
684: Typic Haploxeralfs, magnesian, low elevation-----	50	Limitations Shrink-swell (LEP >6) Thin layer Fragments (>3") 15-35%	1.00 0.86 0.66	Limitations Slopes > 7% Depth to bedrock from 20-60"	1.00 0.86
Earlal very gravelly loam-----	20	Limitations Thin layer Fragments (>3") > 35% Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00
Rock outcrop, serpentinite-----	15	Not rated		Not rated	
685: Bosquejo taxadjunct, gravelly substratum-----	70	Limitations Ponding (any duration) Shrink-swell (LEP >6) Saturation between 2-4'	1.00 1.00 0.86	No limitations	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
686: Redsluff taxadjunct clay loam-----	70	Limitations Shrink-swell (LEP 3-6) Saturation between 2-4'	0.50 0.46	No limitations	
687: Xerorthents, shallow-----	45	Limitations Thin layer Shrink-swell (LEP >6) Fragments (>3") 15-35%	1.00 1.00 0.13	Limitations Depth to bedrock < 20" Slopes 2 to 7%	1.00 0.31
Typic Haploxeraalfs gravelly loam--	40	Limitations Shrink-swell (LEP 3-6) Thin layer Fragments (>3") 15-35%	0.78 0.46 0.13	Limitations Slopes > 7% Depth to bedrock from 20-60"	1.00 0.46
700: Retsongulch very gravelly sandy loam-----	40	Limitations Fragments (>3") > 35% Thin layer	1.00 0.86	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.86
Flumewall gravelly sandy loam-----	25	Limitations Thin layer Fragments (>3") > 35%	1.00 1.00	Limitations Slopes > 7% Depth to bedrock < 20" Permeability .6-2"/hr (seepage)	1.00 1.00 0.01
701: Powellton gravelly loam-----	40	Limitations Piping	0.66	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.50
Obstruction gravelly sandy loam---	30	No limitations		Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
702: Cerpone gravelly loam-----	50	Limitations Shrink-swell (LEP 3-6) Thin layer	0.50 0.01	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	1.00 0.01 0.01

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
702:					
Typic Haploxeralfs, magnesian, very gravelly loam-----	20	Limitations Shrink-swell (LEP >6) Fragments (>3") 15-35% Thin layer	1.00 0.20 0.03	Limitations Slopes > 7% Depth to bedrock from 20-60"	1.00 0.03
Earlall very gravelly loam-----	15	Limitations Thin layer Fragments (>3") > 35% Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Depth to bedrock < 20" Slopes > 7%	1.00 1.00
703:					
Cerpone gravelly loam-----	30	Limitations Shrink-swell (LEP 3-6) Thin layer	0.50 0.01	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	1.00 0.01 0.01
Typic Haploxeralfs, magnesian, very gravelly loam-----	30	Limitations Shrink-swell (LEP >6) Fragments (>3") 15-35% Thin layer	1.00 0.20 0.03	Limitations Slopes > 7% Depth to bedrock from 20-60"	1.00 0.03
Earlall very gravelly loam-----	15	Limitations Thin layer Fragments (>3") > 35% Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00
Rock outcrop, serpentinite-----	15	Not rated		Not rated	
704:					
Typic Haploxeralfs, magnesian, very gravelly loam-----	40	Limitations Shrink-swell (LEP >6) Fragments (>3") 15-35% Thin layer	1.00 0.20 0.03	Limitations Slopes > 7% Depth to bedrock from 20-60"	1.00 0.03
Earlall very gravelly loam-----	20	Limitations Thin layer Fragments (>3") > 35% Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
704:					
Cerpone gravelly loam-----	15	Limitations Shrink-swell (LEP 3-6) Thin layer	0.50 0.01	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	1.00 0.01 0.01
Rock outcrop, serpentinite-----	15	Not rated		Not rated	
705:					
Typic Haploxeralfs, magnesian, very gravelly loam-----	35	Limitations Shrink-swell (LEP >6) Fragments (>3") 15-35% Thin layer	1.00 0.20 0.03	Limitations Slopes > 7% Depth to bedrock from 20-60"	1.00 0.03
Earlal very gravelly loam-----	25	Limitations Thin layer Fragments (>3") > 35% Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00
Cerpone gravelly loam-----	15	Limitations Shrink-swell (LEP 3-6) Thin layer	0.50 0.01	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	1.00 0.01 0.01
Rock outcrop, serpentinite-----	15	Not rated		Not rated	
711:					
Dixmine very gravelly loam-----	45	Limitations Fragments (>3") 15-35% Shrink-swell (LEP 3-6) Thin layer	0.61 0.06 0.04	Limitations Slopes > 7% Permeability .6-2"/hr (seepage) Depth to bedrock from 20-60"	0.99 0.08 0.04
Toadtown loam-----	40	Limitations Shrink-swell (LEP 3-6)	0.50	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	0.99 0.68
712:					
Dixmine very gravelly loam-----	50	Limitations Fragments (>3") 15-35% Shrink-swell (LEP 3-6) Thin layer	0.61 0.06 0.04	Limitations Slopes > 7% Permeability .6-2"/hr (seepage) Depth to bedrock from 20-60"	1.00 0.08 0.04

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
712: Toadtown loam-----	40	Limitations Shrink-swell (LEP 3-6)	0.50	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.68
713: Dixmine very gravelly loam-----	50	Limitations Fragments (>3") 15-35% Shrink-swell (LEP 3-6) Thin layer	0.61 0.06 0.04	Limitations Slopes > 7% Permeability .6-2"/hr (seepage) Depth to bedrock from 20-60"	1.00 0.08 0.04
Toadtown loam-----	35	Limitations Shrink-swell (LEP 3-6)	0.50	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.68
714: Dixmine very gravelly loam-----	50	Limitations Fragments (>3") 15-35% Shrink-swell (LEP 3-6) Thin layer	0.61 0.06 0.04	Limitations Slopes > 7% Permeability .6-2"/hr (seepage) Depth to bedrock from 20-60"	1.00 0.08 0.04
Toadtown loam-----	35	Limitations Shrink-swell (LEP 3-6)	0.50	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.68
715: Logtrain gravelly loam-----	40	Limitations Fragments (>3") 15-35% Thin layer	0.47 0.03	Limitations Slopes > 7% Permeability .6-2"/hr (seepage) Depth to bedrock from 20-60"	1.00 0.08 0.03
Bottlehill very gravelly loam-----	30	Limitations Thin layer Shrink-swell (LEP 3-6)	0.81 0.50	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	1.00 0.81 0.08
Walkermine very gravelly loam-----	20	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.61	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
716:					
Griffgulch very gravelly silt loam	40	Limitations		Limitations	
		Shrink-swell (LEP >6)	1.00	Slopes 2 to 7%	0.91
		Fragments (>3") > 35%	1.00	Depth to bedrock from 20-60"	0.01
		MH or CH Unified and PI <40%	0.50		
Surnuf gravelly loam-----	40	Limitations		Limitations	
		Shrink-swell (LEP >6)	1.00	Slopes > 7%	0.99
		MH or CH Unified and PI <40%	0.50		
717:					
Griffgulch very gravelly silt loam	40	Limitations		Limitations	
		Shrink-swell (LEP >6)	1.00	Slopes > 7%	1.00
		Fragments (>3") > 35%	1.00	Depth to bedrock from 20-60"	0.01
		MH or CH Unified and PI <40%	0.50		
Surnuf gravelly loam-----	40	Limitations		Limitations	
		Shrink-swell (LEP >6)	1.00	Slopes > 7%	1.00
		MH or CH Unified and PI <40%	0.50		
718:					
Griffgulch very gravelly silt loam	35	Limitations		Limitations	
		Shrink-swell (LEP >6)	1.00	Slopes > 7%	1.00
		Fragments (>3") > 35%	1.00	Depth to bedrock from 20-60"	0.01
		MH or CH Unified and PI <40%	0.50		
Surnuf gravelly loam-----	35	Limitations		Limitations	
		Shrink-swell (LEP >6)	1.00	Slopes > 7%	1.00
		MH or CH Unified and PI <40%	0.50		
Spine taxadjunct very cobbly loam	15	Limitations		Limitations	
		Thin layer	1.00	Slopes > 7%	1.00
		Fragments (>3") > 35%	1.00	Depth to bedrock < 20"	1.00
		Shrink-swell (LEP 3-6)	0.50		
719:					
Griffgulch very gravelly silt loam	35	Limitations		Limitations	
		Shrink-swell (LEP >6)	1.00	Slopes > 7%	1.00
		Fragments (>3") > 35%	1.00	Depth to bedrock from 20-60"	0.01
		MH or CH Unified and PI <40%	0.50		
Surnuf gravelly loam-----	30	Limitations		Limitations	
		Shrink-swell (LEP >6)	1.00	Slopes > 7%	1.00
		MH or CH Unified and PI <40%	0.50		

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
719: Spine taxadjunct very cobbly loam	20	Limitations Thin layer Fragments (>3") > 35% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00
720: Dystroxerepts extremely gravelly loam-----	40	Limitations Fragments (>3") > 35% Thin layer	1.00 0.56	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	1.00 0.56 0.01
Haploxeraalfs very gravelly loam---	30	Limitations Fragments (>3") > 35% Shrink-swell (LEP >6) Thin layer	1.00 1.00 0.19	Limitations Slopes > 7% Depth to bedrock from 20-60"	1.00 0.19
Rock outcrop, metavolcanic-----	15	Not rated		Not rated	
721: Haploxerands, granitic till, medial sandy loam-----	70	Limitations Seepage Fragments (>3") 15-35%	0.10 0.06	Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 1.00
722: Haploxerands, granitic till, medial sandy loam-----	70	Limitations Seepage Fragments (>3") 15-35%	0.10 0.06	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
723: Haploxerands, granitic till, medial sandy loam-----	70	Limitations Seepage Fragments (>3") 15-35%	0.10 0.06	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
724: Haploxerands, volcanic till, cobbly medial sandy loam-----	75	Limitations Fragments (>3") 15-35%	0.15	Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 1.00

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
725: Haploxerands, volcanic till, cobbly medial sandy loam-----	75	Limitations Fragments (>3") 15-35%	0.15	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
726: Haploxerands, volcanic till, cobbly medial sandy loam-----	75	Limitations Fragments (>3") 15-35%	0.15	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
727: Bonneyridge sandy loam-----	85	Limitations Seepage	0.50	Limitations Permeability > 2"/hr (seepage) Slopes 2 to 7%	1.00 0.31
728: Bonneyridge sandy loam-----	85	Limitations Seepage	0.50	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
729: Bonneyridge sandy loam-----	85	Limitations Seepage	0.50	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
730: Tusccoll gravelly loam-----	60	Limitations Shrink-swell (LEP >6)	1.00	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.01
Schott very gravelly loam-----	25	Limitations Fragments (>3") > 35% Shrink-swell (LEP 3-6) Thin layer	1.00 0.78 0.11	Limitations Slopes > 7% Depth to bedrock from 20-60"	1.00 0.11
731: Tusccoll gravelly loam-----	50	Limitations Shrink-swell (LEP >6)	1.00	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.01

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
731: Schott very gravelly loam-----	35	Limitations Fragments (>3") > 35% Shrink-swell (LEP 3-6) Thin layer	1.00 0.78 0.11	Limitations Slopes > 7% Depth to bedrock from 20-60"	1.00 0.11
732: Bonepile taxadjunct, duripan substratum-----	90	Limitations Fragments (>3") 15-35% Saturation between 2-4' Thin layer	0.85 0.37 0.19	Limitations Permeability > 2"/hr (seepage) Depth to pan 20 to 60"	1.00 0.19
733: Haploxeralfs, terrace, gravelly loam-----	75	Limitations Fragments (>3") > 35% Shrink-swell (LEP 3-6)	1.00 0.78	Limitations Permeability .6-2"/hr (seepage)	0.01
734: Haploxerands medial sandy loam---	55	No limitations		Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 1.00
Aquic Xerofluvents peaty very fine sandy loam-----	35	Limitations Saturation < 2' depth	1.00	Limitations Permeability > 2"/hr (seepage) Slopes 2 to 7%	1.00 0.08
735: Fluvaquents, loamy-----	80	Limitations Saturation < 2' depth Piping	1.00 0.90	Limitations Permeability > 2"/hr (seepage)	1.00
801: Obstruction gravelly sandy loam---	70	No limitations		Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 1.00

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
802: Obskel very gravelly sandy loam---	40	Limitations Thin layer	0.02	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.02
Obstruction gravelly sandy loam---	40	No limitations		Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
803: Obskel very gravelly sandy loam---	40	Limitations Thin layer	0.02	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.02
Obstruction gravelly sandy loam---	40	No limitations		Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
804: Obskel very gravelly sandy loam---	35	Limitations Thin layer	0.02	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.02
Obstruction gravelly sandy loam---	25	No limitations		Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
Retsongulch very gravelly sandy loam-----	20	Limitations Fragments (>3") > 35% Thin layer	1.00 0.86	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.86
805: Bottlehill very gravelly loam----	50	Limitations Thin layer Shrink-swell (LEP 3-6)	0.81 0.50	Limitations Slopes 2 to 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	0.91 0.81 0.08

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
805:					
Walkermine very gravelly loam-----	20	Limitations		Limitations	
		Thin layer	1.00	Depth to bedrock < 20"	1.00
		Fragments (>3") 15-35%	0.61	Slopes > 7%	1.00
Logtrain gravelly loam-----	20	Limitations		Limitations	
		Fragments (>3") 15-35%	0.47	Slopes 2 to 7%	0.91
		Thin layer	0.03	Permeability .6-2"/hr (seepage)	0.08
				Depth to bedrock from 20-60"	0.03
806:					
Bottlehill very gravelly loam-----	50	Limitations		Limitations	
		Thin layer	0.81	Slopes > 7%	1.00
		Shrink-swell (LEP 3-6)	0.50	Depth to bedrock from 20-60"	0.81
				Permeability .6-2"/hr (seepage)	0.08
Walkermine very gravelly loam-----	20	Limitations		Limitations	
		Thin layer	1.00	Slopes > 7%	1.00
		Fragments (>3") 15-35%	0.61	Depth to bedrock < 20"	1.00
Logtrain gravelly loam-----	20	Limitations		Limitations	
		Fragments (>3") 15-35%	0.47	Slopes > 7%	1.00
		Thin layer	0.03	Permeability .6-2"/hr (seepage)	0.08
				Depth to bedrock from 20-60"	0.03
807:					
Bottlehill very gravelly loam-----	35	Limitations		Limitations	
		Thin layer	0.81	Slopes > 7%	1.00
		Shrink-swell (LEP 3-6)	0.50	Depth to bedrock from 20-60"	0.81
				Permeability .6-2"/hr (seepage)	0.08
Logtrain gravelly loam-----	30	Limitations		Limitations	
		Fragments (>3") 15-35%	0.47	Slopes > 7%	1.00
		Thin layer	0.03	Permeability .6-2"/hr (seepage)	0.08
				Depth to bedrock from 20-60"	0.03
Walkermine very gravelly loam-----	25	Limitations		Limitations	
		Thin layer	1.00	Slopes > 7%	1.00
		Fragments (>3") 15-35%	0.61	Depth to bedrock < 20"	1.00

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
808:					
Bottlehill very gravelly loam-----	45	Limitations		Limitations	
		Thin layer	0.81	Slopes > 7%	1.00
		Shrink-swell (LEP 3-6)	0.50	Depth to bedrock from 20-60"	0.81
				Permeability .6-2"/hr (seepage)	0.08
Walkermine very gravelly loam-----	20	Limitations		Limitations	
		Thin layer	1.00	Slopes > 7%	1.00
		Fragments (>3") 15-35%	0.61	Depth to bedrock < 20"	1.00
Logtrain gravelly loam-----	20	Limitations		Limitations	
		Fragments (>3") 15-35%	0.47	Slopes > 7%	1.00
		Thin layer	0.03	Permeability .6-2"/hr (seepage)	0.08
				Depth to bedrock from 20-60"	0.03
809:					
Walkermine very gravelly loam-----	45	Limitations		Limitations	
		Thin layer	1.00	Slopes > 7%	1.00
		Fragments (>3") 15-35%	0.61	Depth to bedrock < 20"	1.00
Bottlehill very gravelly loam-----	15	Limitations		Limitations	
		Thin layer	0.81	Slopes > 7%	1.00
		Shrink-swell (LEP 3-6)	0.50	Depth to bedrock from 20-60"	0.81
				Permeability .6-2"/hr (seepage)	0.08
Logtrain gravelly loam-----	15	Limitations		Limitations	
		Fragments (>3") 15-35%	0.47	Slopes > 7%	1.00
		Thin layer	0.03	Permeability .6-2"/hr (seepage)	0.08
				Depth to bedrock from 20-60"	0.03
Rock outcrop, metavolcanic-----	15	Not rated		Not rated	
810:					
Dixmine very gravelly loam-----	35	Limitations		Limitations	
		Fragments (>3") 15-35%	0.61	Slopes > 7%	1.00
		Shrink-swell (LEP 3-6)	0.06	Permeability .6-2"/hr (seepage)	0.08
		Thin layer	0.04	Depth to bedrock from 20-60"	0.04
Mac gravelly loam-----	25	Limitations		Limitations	
		Thin layer	0.61	Slopes > 7%	1.00
		Shrink-swell (LEP 3-6)	0.22	Depth to bedrock from 20-60"	0.61
				Permeability .6-2"/hr (seepage)	0.01

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
810: Spine very gravelly loam-----	25	Limitations Thin layer Shrink-swell (LEP 3-6)	1.00 0.22	Limitations Slopes > 7% Depth to bedrock < 20" Permeability .6-2"/hr (seepage)	1.00 1.00 0.01
811: Powellton gravelly loam-----	50	Limitations Piping	0.66	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.50
Toadtown loam-----	40	Limitations Shrink-swell (LEP 3-6)	0.50	Limitations Slopes 2 to 7% Permeability .6-2"/hr (seepage)	0.91 0.68
812: Powellton gravelly loam-----	50	Limitations Piping	0.66	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.50
Toadtown loam-----	40	Limitations Shrink-swell (LEP 3-6)	0.50	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.68
813: Powellton gravelly loam-----	50	Limitations Piping	0.66	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.50
Toadtown loam-----	40	Limitations Shrink-swell (LEP 3-6)	0.50	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.68
814: Mountyana gravelly loam-----	80	Limitations Shrink-swell (LEP 3-6)	0.22	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.08
815: Mountyana gravelly loam-----	80	Limitations Shrink-swell (LEP 3-6)	0.22	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.08

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
817: Lydon very gravelly medial coarse sandy loam-----	80	Limitations Fragments (>3") 15-35% Thin layer	0.74 0.71	Limitations Permeability > 2"/hr (seepage) Depth to bedrock from 20-60" Slopes 2 to 7%	1.00 0.71 0.31
818: Lydon very gravelly medial coarse sandy loam-----	75	Limitations Fragments (>3") 15-35% Thin layer	0.74 0.71	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.71
819: Lydon very gravelly medial coarse sandy loam-----	65	Limitations Fragments (>3") 15-35% Thin layer	0.74 0.71	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.71
Rock outcrop, mudflow breccia----	20	Not rated		Not rated	
820: Lydon very gravelly medial coarse sandy loam-----	60	Limitations Fragments (>3") 15-35% Thin layer	0.74 0.71	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.71
Rock outcrop, mudflow breccia----	25	Not rated		Not rated	
821: Lydon very gravelly medial coarse sandy loam-----	55	Limitations Fragments (>3") 15-35% Thin layer	0.74 0.71	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.71
Rock outcrop, mudflow breccia----	30	Not rated		Not rated	
822: Bonepile gravelly medial loam----	85	Limitations Thin layer Fragments (>3") 15-35%	0.29 0.01	Limitations Permeability .6-2"/hr (seepage) Slopes 2 to 7% Depth to bedrock from 20-60"	0.68 0.31 0.29

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
823: Bonpile gravelly medial loam-----	85	Limitations Thin layer Fragments (>3") 15-35%	0.29 0.01	Limitations Slopes > 7% Permeability .6-2"/hr (seepage) Depth to bedrock from 20-60"	1.00 0.68 0.29
824: Beecee very gravelly medial loam--	85	No limitations		Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.50
825: Beecee very gravelly medial loam--	60	No limitations		Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.50
Lydon very gravelly medial coarse sandy loam-----	20	Limitations Fragments (>3") 15-35% Thin layer	0.74 0.71	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.71
826: Redbone gravelly medial sandy loam	80	Limitations Thin layer	0.03	Limitations Permeability > 2"/hr (seepage) Slopes > 7% Depth to bedrock from 20-60"	1.00 1.00 0.03
827: Redbone gravelly medial sandy loam	80	Limitations Thin layer	0.03	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.03
829: Paradiso loam-----	80	Limitations Shrink-swell (LEP >6) MH or CH Unified and PI <40%	1.00 0.50	Limitations Slopes 2 to 7% Permeability .6-2"/hr (seepage)	0.31 0.01
830: Paradiso loam-----	75	Limitations Shrink-swell (LEP >6) MH or CH Unified and PI <40%	1.00 0.50	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.01

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
831:					
Surnuf gravelly loam-----	40	Limitations Shrink-swell (LEP >6) MH or CH Unified and PI <40%	1.00 0.50	Limitations Slopes > 7%	0.99
Bigridge loam-----	30	Limitations Thin layer	0.09	Limitations Permeability > 2"/hr (seepage) Slopes > 7% Depth to bedrock from 20-60"	0.99 0.99 0.09
Spine very gravelly loam-----	15	Limitations Thin layer Shrink-swell (LEP 3-6)	1.00 0.22	Limitations Depth to bedrock < 20" Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 1.00 0.01
832:					
Surnuf gravelly loam-----	40	Limitations Shrink-swell (LEP >6) MH or CH Unified and PI <40%	1.00 0.50	Limitations Slopes > 7%	1.00
Bigridge loam-----	30	Limitations Thin layer	0.09	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 0.99 0.09
Spine very gravelly loam-----	15	Limitations Thin layer Shrink-swell (LEP 3-6)	1.00 0.22	Limitations Slopes > 7% Depth to bedrock < 20" Permeability .6-2"/hr (seepage)	1.00 1.00 0.01
833:					
Surnuf gravelly loam-----	60	Limitations Shrink-swell (LEP >6) MH or CH Unified and PI <40%	1.00 0.50	Limitations Slopes > 7%	1.00
Bigridge loam-----	15	Limitations Thin layer	0.09	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 0.99 0.09
Spine very gravelly loam-----	15	Limitations Thin layer Shrink-swell (LEP 3-6)	1.00 0.22	Limitations Slopes > 7% Depth to bedrock < 20" Permeability .6-2"/hr (seepage)	1.00 1.00 0.01

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
834:					
Hietanen gravelly loam-----	50	Limitations		Limitations	
		Piping	0.36	Slopes 2 to 7%	0.31
		Thin layer	0.11	Depth to bedrock from 20-60"	0.11
				Permeability .6-2"/hr (seepage)	0.02
Mac gravelly loam-----	30	Limitations		Limitations	
		Thin layer	0.61	Slopes 2 to 7%	0.91
		Shrink-swell (LEP 3-6)	0.22	Depth to bedrock from 20-60"	0.61
				Permeability .6-2"/hr (seepage)	0.01
835:					
Hietanen gravelly loam-----	60	Limitations		Limitations	
		Piping	0.36	Slopes > 7%	1.00
		Thin layer	0.11	Depth to bedrock from 20-60"	0.11
				Permeability .6-2"/hr (seepage)	0.02
Mac gravelly loam-----	20	Limitations		Limitations	
		Thin layer	0.61	Slopes > 7%	1.00
		Shrink-swell (LEP 3-6)	0.22	Depth to bedrock from 20-60"	0.61
				Permeability .6-2"/hr (seepage)	0.01
836:					
Hietanen gravelly loam-----	50	Limitations		Limitations	
		Piping	0.36	Slopes > 7%	1.00
		Thin layer	0.11	Depth to bedrock from 20-60"	0.11
				Permeability .6-2"/hr (seepage)	0.02
Mac gravelly loam-----	20	Limitations		Limitations	
		Thin layer	0.61	Slopes > 7%	1.00
		Shrink-swell (LEP 3-6)	0.22	Depth to bedrock from 20-60"	0.61
				Permeability .6-2"/hr (seepage)	0.01
Spine very gravelly loam-----	15	Limitations		Limitations	
		Thin layer	1.00	Slopes > 7%	1.00
		Shrink-swell (LEP 3-6)	0.22	Depth to bedrock < 20"	1.00
				Permeability .6-2"/hr (seepage)	0.01
837:					
Hietanen gravelly loam-----	35	Limitations		Limitations	
		Piping	0.36	Slopes > 7%	1.00
		Thin layer	0.11	Depth to bedrock from 20-60"	0.11
				Permeability .6-2"/hr (seepage)	0.02

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
837:					
Spine very gravelly loam-----	25	Limitations		Limitations	
		Thin layer	1.00	Slopes > 7%	1.00
		Shrink-swell (LEP 3-6)	0.22	Depth to bedrock < 20"	1.00
				Permeability .6-2"/hr (seepage)	0.01
Mac gravelly loam-----	20	Limitations		Limitations	
		Thin layer	0.61	Slopes > 7%	1.00
		Shrink-swell (LEP 3-6)	0.22	Depth to bedrock from 20-60"	0.61
				Permeability .6-2"/hr (seepage)	0.01
838:					
Dixmine very gravelly loam-----	35	Limitations		Limitations	
		Fragments (>3") 15-35%	0.61	Slopes > 7%	1.00
		Shrink-swell (LEP 3-6)	0.06	Permeability .6-2"/hr (seepage)	0.08
		Thin layer	0.04	Depth to bedrock from 20-60"	0.04
Spine very gravelly loam-----	25	Limitations		Limitations	
		Thin layer	1.00	Slopes > 7%	1.00
		Shrink-swell (LEP 3-6)	0.22	Depth to bedrock < 20"	1.00
				Permeability .6-2"/hr (seepage)	0.01
Mac gravelly loam-----	25	Limitations		Limitations	
		Thin layer	0.61	Slopes > 7%	1.00
		Shrink-swell (LEP 3-6)	0.22	Depth to bedrock from 20-60"	0.61
				Permeability .6-2"/hr (seepage)	0.01
839:					
Chawanakee gravelly sandy loam----	55	Limitations		Limitations	
		Thin layer	1.00	Permeability > 2"/hr (seepage)	1.00
				Depth to bedrock < 20"	1.00
				Slopes > 7%	1.00
Billscabin gravelly sandy loam----	35	Limitations		Limitations	
		Seepage	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes > 7%	1.00
841:					
Billscabin gravelly sandy loam----	50	Limitations		Limitations	
		Seepage	1.00	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
841: Bonneyridge sandy loam-----	35	Limitations Seepage	0.50	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
842: Billscabin gravelly sandy loam---	60	Limitations Seepage	1.00	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
Bonneyridge sandy loam-----	25	Limitations Seepage	0.50	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
846: Bonneyridge sandy loam-----	60	Limitations Seepage	0.50	Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 0.99
Lewisflat loam-----	20	Limitations Piping	0.96	Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 0.99
847: Bonneyridge sandy loam-----	60	Limitations Seepage	0.50	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
Lewisflat loam-----	20	Limitations Piping	0.96	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
848: Bonneyridge sandy loam-----	60	Limitations Seepage	0.50	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
Lewisflat loam-----	20	Limitations Piping	0.96	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
850: Lewisflat loam-----	85	Limitations Piping	0.96	Limitations Permeability > 2"/hr (seepage) Slopes 2 to 7%	1.00 0.01
851: Lewisflat loam-----	80	Limitations Piping	0.96	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
852: Lewisflat loam-----	75	Limitations Piping	0.96	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
860: Toadtown gravelly loam-----	60	Limitations Shrink-swell (LEP >6) MH or CH Unified and PI <40%	1.00 0.50	Limitations Slopes > 7%	0.99
Powellton silt loam-----	20	Limitations Piping	0.50	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	0.99 0.32
861: Toadtown gravelly loam-----	60	Limitations Shrink-swell (LEP >6) MH or CH Unified and PI <40%	1.00 0.50	Limitations Slopes > 7%	1.00
Powellton silt loam-----	20	Limitations Piping	0.50	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.32
862: Toadtown gravelly loam-----	60	Limitations Shrink-swell (LEP >6) MH or CH Unified and PI <40%	1.00 0.50	Limitations Slopes > 7%	1.00
Powellton silt loam-----	20	Limitations Piping	0.50	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.32

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
863:					
Toadtown gravelly loam-----	60	Limitations		Limitations	
		Shrink-swell (LEP >6)	1.00	Slopes > 7%	1.00
		MH or CH Unified and PI <40%	0.50		
Powellton silt loam-----	20	Limitations		Limitations	
		Piping	0.50	Slopes > 7%	1.00
				Permeability .6-2"/hr (seepage)	0.32
880:					
Sites taxadjunct gravelly loam----	50	Limitations		Limitations	
		Shrink-swell (LEP >6)	1.00	Slopes > 7%	0.99
		MH or CH Unified and PI <40%	0.50		
Jocal taxadjunct gravelly loam----	35	Limitations		Limitations	
		Thin layer	0.06	Slopes > 7%	0.99
				Permeability .6-2"/hr (seepage)	0.82
				Depth to bedrock from 20-60"	0.06
881:					
Sites taxadjunct gravelly loam----	50	Limitations		Limitations	
		Shrink-swell (LEP >6)	1.00	Slopes > 7%	1.00
		MH or CH Unified and PI <40%	0.50		
Jocal taxadjunct gravelly loam----	35	Limitations		Limitations	
		Thin layer	0.06	Slopes > 7%	1.00
				Permeability .6-2"/hr (seepage)	0.82
				Depth to bedrock from 20-60"	0.06
882:					
Sites taxadjunct gravelly loam----	50	Limitations		Limitations	
		Shrink-swell (LEP >6)	1.00	Slopes > 7%	1.00
		MH or CH Unified and PI <40%	0.50		
Jocal taxadjunct gravelly loam----	35	Limitations		Limitations	
		Thin layer	0.06	Slopes > 7%	1.00
				Permeability .6-2"/hr (seepage)	0.82
				Depth to bedrock from 20-60"	0.06
883:					
Sites taxadjunct gravelly loam----	50	Limitations		Limitations	
		Shrink-swell (LEP >6)	1.00	Slopes > 7%	1.00
		MH or CH Unified and PI <40%	0.50		

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
883: Jocal taxadjunct gravelly loam----	40	Limitations Thin layer	0.06	Limitations Slopes > 7% Permeability .6-2"/hr (seepage) Depth to bedrock from 20-60"	1.00 0.82 0.06
885: Rogerville silt loam-----	75	Limitations Shrink-swell (LEP >6) MH or CH Unified and PI <40% Thin layer	1.00 0.50 0.08	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	0.99 0.08 0.01
886: Rogerville silt loam-----	80	Limitations Shrink-swell (LEP >6) MH or CH Unified and PI <40% Thin layer	1.00 0.50 0.08	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	1.00 0.08 0.01
892: Rogerville silt loam-----	85	Limitations Shrink-swell (LEP >6) MH or CH Unified and PI <40% Thin layer	1.00 0.50 0.08	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	1.00 0.08 0.01
893: Rogerville silt loam-----	85	Limitations Shrink-swell (LEP >6) MH or CH Unified and PI <40% Thin layer	1.00 0.50 0.08	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (seepage)	1.00 0.08 0.01
902: Lava flows, Lovejoy basalt-----	50	Not rated		Not rated	
Lumpkin gravelly medial sandy loam	40	Not rated		Limitations Depth to bedrock < 20" Permeability > 2"/hr (seepage) Slopes 2 to 7%	1.00 1.00 0.31
903: Mudwash gravelly medial sandy loam	45	No limitations		Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 0.99

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
903:					
Timberisland very gravelly medial sandy loam-----	25	Not rated		Limitations	
				Permeability > 2"/hr (seepage)	1.00
				Slopes > 7%	1.00
				Depth to bedrock from 20-60"	0.16
Lavatop gravelly medial fine sandy loam-----	20	Not rated		Limitations	
				Permeability > 2"/hr (seepage)	0.99
				Slopes > 7%	0.99
				Depth to bedrock from 20-60"	0.95
904:					
Lava flows, Lovejoy basalt-----	60	Not rated		Not rated	
Lavatop gravelly medial fine sandy loam-----	20	Not rated		Limitations	
				Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	0.99
				Depth to bedrock from 20-60"	0.95
905:					
Lava flows, Lovejoy basalt-----	60	Not rated		Not rated	
Lumpkin gravelly medial sandy loam-----	30	Not rated		Limitations	
				Slopes > 7%	1.00
				Depth to bedrock < 20"	1.00
				Permeability > 2"/hr (seepage)	1.00
906:					
Lava flows, Lovejoy basalt-----	60	Not rated		Not rated	
Lumpkin gravelly medial sandy loam-----	30	Not rated		Limitations	
				Slopes > 7%	1.00
				Depth to bedrock < 20"	1.00
				Permeability > 2"/hr (seepage)	1.00

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
911: Endoaquolls loam-----	75	Limitations Saturation < 2' depth Shrink-swell (LEP >6) MH or CH Unified and PI <40%	1.00 1.00 0.50	Limitations Permeability .6-2"/hr (seepage) Slopes 2 to 7%	0.02 0.01
923: Powderhouse medial sandy loam----	45	Not rated		Limitations Permeability > 2"/hr (seepage) Slopes > 7% Depth to bedrock from 20-60"	1.00 0.99 0.66
McNair medial coarse sandy loam---	25	No limitations		Limitations Permeability > 2"/hr (seepage) Slopes > 7% Depth to bedrock from 20-60"	1.00 0.99 0.01
Greenwell medial sandy loam-----	20	Not rated		Limitations Permeability > 2"/hr (seepage) Slopes > 7% Depth to bedrock from 20-60"	1.00 0.99 0.79
924: Powderhouse medial sandy loam----	45	Not rated		Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.66
McNair medial coarse sandy loam---	25	No limitations		Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.01
Greenwell medial sandy loam-----	20	Not rated		Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.79
925: Powderhouse medial sandy loam----	45	Not rated		Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.66

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
925:					
McNair medial coarse sandy loam---	25	No limitations		Limitations	
				Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
				Depth to bedrock from 20-60"	0.01
Greenwell medial sandy loam-----	20	Not rated		Limitations	
				Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
				Depth to bedrock from 20-60"	0.79
930:					
Shakeridge gravelly medial coarse sandy loam-----	50	Limitations		Limitations	
		Organic matter (PT, OL, OH)	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes > 7%	0.99
Timberisland very gravelly medial sandy loam-----	40	Not rated		Limitations	
				Permeability > 2"/hr (seepage)	1.00
				Slopes > 7%	0.99
				Depth to bedrock from 20-60"	0.16
931:					
Shakeridge gravelly medial coarse sandy loam-----	40	Limitations		Limitations	
		Organic matter (PT, OL, OH)	1.00	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
Mudwash gravelly medial sandy loam	25	No limitations		Limitations	
				Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
Timberisland very gravelly medial sandy loam-----	15	Not rated		Limitations	
				Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
				Depth to bedrock from 20-60"	0.16

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
932: Shakeridge gravelly medial coarse sandy loam-----	50	Limitations Organic matter (PT, OL, OH)	1.00	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
Mudwash gravelly medial sandy loam	35	No limitations		Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
933: Shakeridge gravelly medial coarse sandy loam-----	80	Limitations Organic matter (PT, OL, OH)	1.00	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
934: Mudwash gravelly medial sandy loam	80	No limitations		Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 0.99
939: Fluvaquentic Humaquepts very fine sandy loam-----	85	Limitations Saturation < 2' depth Piping	1.00 0.58	Limitations Permeability > 2"/hr (seepage) Slopes 2 to 7%	1.00 0.01
940: Dejonah gravelly loam-----	50	Limitations Piping	0.99	Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 0.99
Stagpoint loam-----	30	Limitations Fragments (>3") > 35% Piping	1.00 1.00	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	0.99 0.98
941: Dejonah gravelly loam-----	50	Limitations Piping	0.99	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
941: Stagpoint loam-----	30	Limitations Fragments (>3") > 35% Piping	1.00 1.00	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.98
942: Stagpoint loam-----	50	Limitations Fragments (>3") > 35% Piping	1.00 1.00	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.98
Dejonah gravelly loam-----	30	Limitations Piping	0.99	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
948: Stagpoint loam-----	55	Limitations Fragments (>3") > 35% Piping	1.00 1.00	Limitations Slopes > 7% Permeability .6-2"/hr (seepage)	1.00 0.98
Dejonah gravelly loam-----	35	Limitations Piping	0.99	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
949: Rogerville taxadjunct fine sandy loam-----	80	Limitations Shrink-swell (LEP 3-6) Thin layer	0.06 0.01	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 0.99 0.01
950: Lumpkin taxadjunct very gravelly medial very fine sandy loam-----	40	Not rated		Limitations Depth to bedrock < 20" Slopes > 7%	1.00 0.99
Rock outcrop, olivine basalt, andesite, or mudflow-----	25	Not rated		Not rated	
Powderhouse medial sandy loam-----	20	Not rated		Limitations Permeability > 2"/hr (seepage) Slopes > 7% Depth to bedrock from 20-60"	1.00 0.99 0.66

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
951: Lumpkin taxadjunct very gravelly medial very fine sandy loam-----	40	Not rated		Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00
Rock outcrop, andesite-----	25	Not rated		Not rated	
Powderhouse medial sandy loam-----	20	Not rated		Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.66
960: Surnuf gravelly loam, high elevation-----	85	Limitations Shrink-swell (LEP >6) MH or CH Unified and PI <40%	1.00 0.50	Limitations Slopes 2 to 7%	0.31
961: Surnuf gravelly loam, high elevation-----	85	Limitations Shrink-swell (LEP >6) MH or CH Unified and PI <40%	1.00 0.50	Limitations Slopes > 7%	1.00
962: Surnuf gravelly loam, high elevation-----	85	Limitations Shrink-swell (LEP >6) MH or CH Unified and PI <40%	1.00 0.50	Limitations Slopes > 7%	1.00
963: Surnuf gravelly loam, high elevation-----	85	Limitations Shrink-swell (LEP >6) MH or CH Unified and PI <40%	1.00 0.50	Limitations Slopes > 7%	1.00
990: Riverwash, frequently flooded-----	100	Not rated		Not rated	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitations	Value	Limitations	Value
991: Xerofluvents sandy loam, frequently flooded-----	75	Limitations Saturation between 2-4'	0.93	Limitations Permeability > 2"/hr (seepage) Slopes 2 to 7%	1.00 0.08
995: Pits, gravel-----	100	Not rated		Not rated	
996: Dumps, excavated material-----	100	Not rated		Not rated	
997: Pits-----	95	Not rated		Not rated	
998: Dumps, landfill-----	100	Not rated		Not rated	
999: Water-----	100	Not rated		Not rated	
DAM: Dam, manmade-----	100	Not rated		Not rated	

The interpretation for embankments, dikes, and levees evaluates the following soil properties at variable depths in the soil: ponding; wetness; depth to a restrictive layer; fragments more than 3 inches in size; salinity (EC); Unified classes for a high content of organic matter (PT, OL, and OH); Unified classes that are hard to pack (MH and CH); permeability that is too rapid, allowing seepage; piping as determined by Atterberg limits of liquid limit (LL) and plasticity index (PI); sodium content (SAR); and gypsum content.

The interpretation for pond reservoir areas evaluates the following soil properties at variable depths in the soil: slope, depth to hard or soft bedrock, depth to a cemented pan, marly textures, gypsum content, and permeability that is too rapid, allowing seepage.

Table 19b.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. Only the soils that are used for the production of commonly grown crops or for livestock grazing are listed. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. The rating is based on the limitation with the highest value. Only the five highest value limitations are listed. There may be more limitations. Fine-earth fractions and rock fragments are reported on a weight basis. An explanation of the rating criteria and of the abbreviations used in describing the limitations is given at the end of the table)

Map symbol and soil name	Pct. of map unit	Basin or paddy irrigation		Graded border irrigation	
		Limitations	Value	Limitations	Value
100: Anita-----	60	Limitations AWC < 2" to 40" Depth to pan <40"	1.00 1.00	Limitations Saturation < 24" depth during growing season Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00
Galt-----	25	Limitations Depth to pan <40" AWC from 2 - 6"	1.00 0.57	Limitations Depth to pan <40" Permeability <.2"/hr Saturation < 24" depth during growing season	1.00 1.00 1.00
104: Bosquejo-----	85	No limitations		Limitations Permeability <.2"/hr	1.00
105: Busacca-----	85	Limitations SAR from 0.5 - 10 to 40" depth	0.01	Limitations SAR from 0.5 - 10 to 40" depth	0.01
108: Tuscan-----	45	Limitations Sandy or loamy surface textures AWC < 2" to 40" Depth to pan <40"	1.00 1.00 1.00	Limitations Saturation < 24" depth during growing season Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00
Igo-----	20	Limitations Sandy or loamy surface textures AWC < 2" to 40" Depth to pan <40"	1.00 1.00 1.00	Limitations Saturation < 24" depth during growing season Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00
Anita-----	15	Limitations AWC < 2" to 40" Depth to pan <40"	1.00 1.00	Limitations Saturation < 24" depth during growing season Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00
109: Bosquejo-----	85	No limitations		Limitations Permeability <.2"/hr	1.00
110: Bosquejo-----	90	No limitations		Limitations Permeability <.2"/hr	1.00
118: Xerorthents, tailings-----	80	Limitations Permeability \geq 1.2"/hr AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00	Limitations AWC < 2" to 40" Slopes > 2% Seepage	1.00 1.00 1.00

Table 19b.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Basin or paddy irrigation		Graded border irrigation	
		Limitations	Value	Limitations	Value
118co: Clear Lake-----	90	Limitations Flooding >= frequent in growing season SAR from 0.5 - 10 to 40" depth	1.00 0.65	Limitations Permeability <.2"/hr Flooding >= frequent in growing season SAR from 0.5 - 10 to 40" depth	1.00 0.65
119: Xerorthents, tailings-----	70	Limitations Permeability >= 1.2"/hr AWC < 2" to 40"	1.00 1.00	Limitations AWC < 2" to 40" Seepage	1.00 1.00
120: Gridley taxadjunct	80	Limitations Depth to pan <40" AWC < 2" to 40"	1.00 1.00	Limitations Depth to pan <40" Permeability <.2"/hr AWC < 2" to 40"	1.00 1.00 1.00
121: Boga-----	45	Limitations Sandy or loamy surface textures	1.00	No limitations	
Loemstone-----	40	Limitations Sandy or loamy surface textures SAR from 0.5 - 10 to 40" depth	1.00 0.01	Limitations Permeability <.2"/hr SAR from 0.5 - 10 to 40" depth	1.00 0.01
121su: Columbia-----	80	Limitations Permeability >= 1.2"/hr Flooding >= frequent in growing season AWC from 2 - 6"	1.00 1.00 0.80	Limitations Flooding >= frequent in growing season AWC from 2 - 6"	1.00 0.80
125: Gridley taxadjunct	65	Limitations Sandy or loamy surface textures Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00	Limitations Depth to pan <40" Permeability <.2"/hr AWC < 2" to 40"	1.00 1.00 1.00
Calcic Haploxerolls	20	Limitations Permeability >= 1.2"/hr SAR > 10 to 40" depth EC 4-8 dS/m	1.00 1.00 0.50	Limitations SAR > 10 to 40" depth EC 4-8 dS/m AWC from 2 - 6"	1.00 0.50 0.49
126: Liveoak-----	85	Limitations Permeability >= 1.2"/hr AWC from 2 - 6"	1.00 0.40	Limitations AWC from 2 - 6"	0.40
127: Gridley taxadjunct	85	Limitations Sandy or loamy surface textures Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00	Limitations Depth to pan <40" Permeability <.2"/hr AWC < 2" to 40"	1.00 1.00 1.00

Table 19b.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Basin or paddy irrigation		Graded border irrigation	
		Limitations	Value	Limitations	Value
130: Eastbiggs-----	80	Limitations Sandy or loamy surface textures Depth to pan <40" AWC from 2 - 6"	1.00 1.00 0.72	Limitations Depth to pan <40" Saturation < 24" depth during growing season AWC from 2 - 6"	1.00 1.00 0.72
133: Eastbiggs-----	50	Limitations Sandy or loamy surface textures Depth to pan <40" AWC from 2 - 6"	1.00 1.00 0.72	Limitations Depth to pan <40" Saturation < 24" depth during growing season AWC from 2 - 6"	1.00 1.00 0.72
Galt-----	40	Limitations Depth to pan <40" AWC from 2 - 6"	1.00 0.35	Limitations Depth to pan <40" Permeability <.2"/hr Saturation < 24" depth during growing season	1.00 1.00 1.00
136: Duric Xerarents----	35	Limitations AWC < 2" to 40" Depth to pan <40"	1.00 1.00	Limitations Saturation < 24" depth during growing season Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00
Duric Xerarents----	30	Limitations Permeability >= 1.2"/hr AWC from 2 - 6"	1.00 0.11	Limitations Permeability <.2"/hr AWC from 2 - 6"	1.00 0.11
Eastbiggs-----	25	Limitations Depth to pan <40" AWC from 2 - 6"	1.00 0.50	Limitations Depth to pan <40" Saturation < 24" depth during growing season AWC from 2 - 6"	1.00 1.00 0.50
138su: Liveoak-----	85	Limitations Permeability >= 1.2"/hr	1.00	No limitations	
139su: Liveoak taxadjunct	45	Limitations Sandy or loamy surface textures Flooding >= frequent in growing season	1.00 1.00	Limitations Flooding >= frequent in growing season	1.00
Galt taxadjunct----	40	Limitations Depth to pan <40" Flooding >= frequent in growing season AWC from 2 - 6"	1.00 1.00 0.99	Limitations Depth to pan <40" Saturation < 24" depth during growing season Flooding >= frequent in growing season	1.00 1.00 1.00
143su: Marcum-----	45	Limitations Bedrock (soft) < 40" depth	0.56	Limitations Permeability <.2"/hr Bedrock (soft) < 40" depth	1.00 0.56
Gridley-----	40	Limitations Bedrock (soft) < 40" depth	0.96	Limitations Bedrock (soft) < 40" depth	0.96

Table 19b.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Basin or paddy irrigation		Graded border irrigation	
		Limitations	Value	Limitations	Value
150: Columbia-----	85	Limitations Permeability >= 1.2"/hr Flooding >= frequent in growing season AWC from 2 - 6"	1.00 1.00 0.32	Limitations Sand textures in surface Flooding >= frequent in growing season AWC from 2 - 6"	1.00 1.00 0.32
150su: Olashes-----	85	Limitations Permeability >= 1.2"/hr AWC from 2 - 6"	1.00 0.08	Limitations AWC from 2 - 6"	0.08
152: Gianella-----	85	Limitations Permeability >= 1.2"/hr Flooding >= frequent in growing season	1.00 1.00	Limitations Flooding >= frequent in growing season	1.00
153: Gianella-----	85	Limitations Permeability >= 1.2"/hr Flooding >= frequent in growing season AWC from 2 - 6"	1.00 1.00 0.86	Limitations Flooding >= frequent in growing season AWC from 2 - 6"	1.00 0.86
154: Gianella-----	85	Limitations Permeability >= 1.2"/hr Flooding >= frequent in growing season AWC from 2 - 6"	1.00 1.00 0.21	Limitations Flooding >= frequent in growing season AWC from 2 - 6" Seepage	1.00 0.21 0.10
158: Gianella-----	85	Limitations Permeability >= 1.2"/hr AWC from 2 - 6"	1.00 0.16	Limitations AWC from 2 - 6" Seepage	0.16 0.10
160: Gianella-----	85	Limitations Sandy or loamy surface textures Permeability >= 1.2"/hr	1.00 1.00	No limitations	
161: Gianella-----	90	Limitations Permeability >= 1.2"/hr AWC from 2 - 6"	1.00 0.16	Limitations AWC from 2 - 6" Seepage	0.16 0.10
162: Gianella-----	90	Limitations Sandy or loamy surface textures Permeability >= 1.2"/hr	1.00 1.00	No limitations	
163yu: Holillipah-----	85	Limitations AWC < 2" to 40" Permeability >= 1.2"/hr Flooding >= frequent in growing season	1.00 1.00 1.00	Limitations Sand textures in surface WEG = 1 or 2 AWC < 2" to 40"	1.00 1.00 1.00

Table 19b.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Basin or paddy irrigation		Graded border irrigation	
		Limitations	Value	Limitations	Value
175: Farwell-----	85	Limitations SAR from 0.5 - 10 to 40" depth	0.01	Limitations SAR from 0.5 - 10 to 40" depth	0.01
176: Farwell-----	85	Limitations Sandy or loamy surface textures Permeability >= 1.2"/hr SAR from 0.5 - 10 to 40" depth	1.00 1.00 0.01	Limitations SAR from 0.5 - 10 to 40" depth	0.01
177: Farwell-----	85	Limitations SAR from 0.5 - 10 to 40" depth	0.01	Limitations SAR from 0.5 - 10 to 40" depth	0.01
178: Arbuckle-----	87	Limitations Sandy or loamy surface textures Permeability >= 1.2"/hr	1.00 1.00	No limitations	
179: Moda taxadjunct----	65	Limitations Sandy or loamy surface textures AWC < 2" to 40" Permeability >= 1.2"/hr	1.00 1.00 1.00	Limitations Depth to pan <40" AWC < 2" to 40" Saturation < 24" depth during growing season	1.00 1.00 1.00
Arbuckle-----	20	Limitations Sandy or loamy surface textures Permeability >= 1.2"/hr	1.00 1.00	No limitations	
180: Dodgeland-----	85	No limitations		Limitations Permeability <.2"/hr Saturation < 24" depth during growing season	1.00 1.00
181: Dodgeland-----	80	Limitations Flooding >= frequent in growing season	1.00	Limitations Permeability <.2"/hr Saturation < 24" depth during growing season Flooding >= frequent in growing season	1.00 1.00 1.00
189: Esquon-----	90	No limitations		Limitations Permeability <.2"/hr	1.00
200: Parrott-----	85	Limitations SAR from 0.5 - 10 to 40" depth	0.01	Limitations SAR from 0.5 - 10 to 40" depth	0.01
201: Parrott-----	85	Limitations Flooding >= frequent in growing season SAR from 0.5 - 10 to 40" depth	1.00 0.01	Limitations Flooding >= frequent in growing season SAR from 0.5 - 10 to 40" depth	1.00 0.01
203: Kusalslough-----	85	No limitations		Limitations Permeability <.2"/hr	1.00

Table 19b.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Basin or paddy irrigation		Graded border irrigation	
		Limitations	Value	Limitations	Value
205: Parrott-----	50	Limitations Flooding >= frequent in growing season SAR from 0.5 - 10 to 40" depth	1.00 0.01	Limitations Flooding >= frequent in growing season SAR from 0.5 - 10 to 40" depth	1.00 0.01
Vermet-----	35	Limitations Permeability >= 1.2"/hr Flooding >= frequent in growing season	1.00 1.00	Limitations Saturation < 24" depth during growing season Flooding >= frequent in growing season	1.00 1.00
220: Esquon-----	60	Limitations Flooding >= frequent in growing season AWC from 2 - 6"	1.00 0.05	Limitations Permeability <.2"/hr Flooding >= frequent in growing season Saturation between 24-36" during growing season	1.00 1.00 0.47
Clear Lake-----	30	Limitations Flooding >= frequent in growing season	1.00	Limitations Permeability <.2"/hr Saturation < 24" depth during growing season Flooding >= frequent in growing season	1.00 1.00 1.00
248yu: Trainer-----	85	Limitations Sandy or loamy surface textures Permeability >= 1.2"/hr AWC from 2 - 6"	1.00 1.00 0.21	Limitations AWC from 2 - 6"	0.21
250: Llanoseco-----	90	No limitations		Limitations Permeability <.2"/hr	1.00
252: Whitecabin-----	60	Limitations SAR from 0.5 - 10 to 40" depth	0.98	Limitations Permeability <.2"/hr SAR from 0.5 - 10 to 40" depth	1.00 0.98
Ordferry-----	25	Limitations Depth to pan <40" SAR from 0.5 - 10 to 40" depth AWC from 2 - 6"	1.00 0.91 0.80	Limitations Depth to pan <40" Permeability <.2"/hr SAR from 0.5 - 10 to 40" depth	1.00 1.00 0.91
255: Whitecabin-----	60	Limitations SAR from 0.5 - 10 to 40" depth	0.98	Limitations Permeability <.2"/hr SAR from 0.5 - 10 to 40" depth	1.00 0.98
Ordferry-----	30	Limitations Depth to pan <40" SAR from 0.5 - 10 to 40" depth AWC from 2 - 6"	1.00 0.91 0.80	Limitations Depth to pan <40" Permeability <.2"/hr SAR from 0.5 - 10 to 40" depth	1.00 1.00 0.91
256: Whitecabin-----	85	Limitations SAR from 0.5 - 10 to 40" depth	0.98	Limitations Permeability <.2"/hr SAR from 0.5 - 10 to 40" depth	1.00 0.98

Table 19b.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Basin or paddy irrigation		Graded border irrigation	
		Limitations	Value	Limitations	Value
257: Llanoseco-----	90	Limitations Flooding >= frequent in growing season	1.00	Limitations Permeability <.2"/hr Flooding >= frequent in growing season	1.00 1.00
258: Codora-----	85	No limitations		No limitations	
260: Ordferry-----	90	Limitations Depth to pan <40" SAR from 0.5 - 10 to 40" depth AWC from 2 - 6"	1.00 0.91 0.80	Limitations Depth to pan <40" Permeability <.2"/hr SAR from 0.5 - 10 to 40" depth	1.00 1.00 0.91
280: Columbia taxadjunct	80	Limitations Permeability >= 1.2"/hr Flooding >= frequent in growing season AWC from 2 - 6"	1.00 1.00 0.06	Limitations Saturation < 24" depth during growing season Flooding >= frequent in growing season AWC from 2 - 6"	1.00 1.00 0.06
290: Perkins-----	90	Limitations Sandy or loamy surface textures Permeability >= 1.2"/hr AWC from 2 - 6"	1.00 1.00 0.88	Limitations AWC from 2 - 6"	0.88
300: Redsluff-----	80	Limitations Sandy or loamy surface textures Permeability >= 1.2"/hr AWC from 2 - 6"	1.00 1.00 0.45	Limitations Seepage AWC from 2 - 6"	1.00 0.45
301: Wafap-----	70	Limitations Sandy or loamy surface textures AWC < 2" to 40"	1.00 1.00	Limitations Permeability <.2"/hr Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
Hamslough-----	15	Limitations Depth to pan <40" AWC < 2" to 40"	1.00 1.00	Limitations Depth to pan <40" Permeability <.2"/hr AWC < 2" to 40"	1.00 1.00 1.00
302: Redtough-----	50	Limitations Sandy or loamy surface textures AWC < 2" to 40" Depth to pan <40"	1.00 1.00 1.00	Limitations Saturation < 24" depth during growing season Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00 1.00
Redswale-----	35	Limitations Sandy or loamy surface textures AWC < 2" to 40" Depth to pan <40"	1.00 1.00 1.00	Limitations Saturation < 24" depth during growing season Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00 1.00

Table 19b.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Basin or paddy irrigation		Graded border irrigation	
		Limitations	Value	Limitations	Value
303: Munjar-----	60	Limitations Sandy or loamy surface textures Permeability >= 1.2"/hr Depth to pan <40"	1.00 1.00 1.00	Limitations Fragments (>3") > 10% Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00
Tuscan taxadjunct--	20	Limitations Depth to pan <40" AWC < 2" to 40"	1.00 1.00	Limitations Depth to pan <40" AWC < 2" to 40" Saturation < 24" depth during growing season	1.00 1.00 1.00
Galt-----	10	Limitations Depth to pan <40" AWC from 2 - 6"	1.00 0.57	Limitations Depth to pan <40" Permeability <.2"/hr Saturation < 24" depth during growing season	1.00 1.00 1.00
304: Redtough-----	80	Limitations Sandy or loamy surface textures AWC < 2" to 40" Depth to pan <40"	1.00 1.00 1.00	Limitations Depth to pan <40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
305: Redtough-----	45	Limitations Sandy or loamy surface textures AWC < 2" to 40" Depth to pan <40"	1.00 1.00 1.00	Limitations Saturation < 24" depth during growing season Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00 1.00
Redswale-----	25	Limitations Sandy or loamy surface textures AWC < 2" to 40" Depth to pan <40"	1.00 1.00 1.00	Limitations Saturation < 24" depth during growing season Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00 1.00
Anita-----	20	Limitations AWC < 2" to 40" Depth to pan <40"	1.00 1.00	Limitations Saturation < 24" depth during growing season Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00 1.00
306: Duric Xerarents----	50	Limitations Sandy or loamy surface textures AWC from 2 - 6"	1.00 0.08	Limitations Saturation < 24" depth during growing season AWC from 2 - 6"	1.00 1.00 0.08
Duric Xerarents----	40	Limitations AWC < 2" to 40" Depth to pan <40"	1.00 1.00	Limitations Depth to pan <40" AWC < 2" to 40" Saturation < 24" depth during growing season	1.00 1.00 1.00
307: Duric Xerarents----	70	Limitations AWC < 2" to 40" Depth to pan <40"	1.00 1.00	Limitations Depth to pan <40" AWC < 2" to 40" Saturation < 24" depth during growing season	1.00 1.00 1.00

Table 19b.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Basin or paddy irrigation		Graded border irrigation	
		Limitations	Value	Limitations	Value
310: Kimball-----	85	Limitations Sandy or loamy surface textures AWC < 2" to 40" Permeability >= 1.2"/hr	1.00 1.00 1.00	Limitations AWC < 2" to 40"	1.00
317: Thompsonflat-----	75	Limitations Sandy or loamy surface textures Permeability >= 1.2"/hr Slopes > 2%	1.00 1.00 1.00	Limitations Permeability <.2"/hr Fragments (>3") > 10% Slopes > 2%	1.00 1.00 1.00
318: Thompsonflat-----	50	Limitations Permeability >= 1.2"/hr AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00	Limitations Permeability <.2"/hr Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
Oroville-----	40	Limitations AWC < 2" to 40" Permeability >= 1.2"/hr Depth to pan <40"	1.00 1.00 1.00	Limitations Depth to pan <40" AWC < 2" to 40" Permeability <.2"/hr	1.00 1.00 1.00
320: Vistarobles-----	50	Limitations AWC < 2" to 40" Depth to pan <40"	1.00 1.00	Limitations Saturation < 24" depth during growing season Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00
Redding-----	40	Limitations Sandy or loamy surface textures Depth to pan <40" AWC from 2 - 6"	1.00 1.00 0.26	Limitations Depth to pan <40" Saturation between 24-36" during growing season AWC from 2 - 6"	1.00 0.30 0.26
321: Durixeralfs-----	50	Limitations Permeability >= 1.2"/hr Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00	Limitations Depth to pan <40" AWC < 2" to 40" Saturation between 24-36" during growing season	1.00 1.00 0.97
Durixeralfs-----	20	Limitations AWC < 2" to 40" Depth to pan <40" Bedrock (soft) < 40" depth	1.00 1.00 0.99	Limitations Saturation < 24" depth during growing season Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00
Typic Petraquepts--	15	Limitations AWC < 2" to 40" Depth to pan <40" Bedrock (soft) < 40" depth	1.00 1.00 0.99	Limitations Saturation < 24" depth during growing season Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00
330: Wilsoncreek-----	60	Limitations Sandy or loamy surface textures Permeability >= 1.2"/hr	1.00 1.00	No limitations	

Table 19b.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Basin or paddy irrigation		Graded border irrigation	
		Limitations	Value	Limitations	Value
330: Trainer-----	25	Limitations Sandy or loamy surface textures Permeability >= 1.2"/hr	1.00 1.00	No limitations	
331: Thompsonflat-----	85	Limitations Sandy or loamy surface textures Permeability >= 1.2"/hr Slopes > 2%	1.00 1.00 1.00	Limitations Slopes > 2% Permeability <.2"/hr Fragments (>3") > 10%	1.00 1.00 1.00
335: Galt-----	85	Limitations Depth to pan <40" AWC from 2 - 6"	1.00 0.35	Limitations Depth to pan <40" Permeability <.2"/hr Saturation < 24" depth during growing season	1.00 1.00 1.00
336: Galt-----	90	Limitations Depth to pan <40" AWC from 2 - 6"	1.00 0.57	Limitations Depth to pan <40" Permeability <.2"/hr Saturation < 24" depth during growing season	1.00 1.00 1.00
337: Galt-----	85	Limitations Depth to pan <40" AWC from 2 - 6"	1.00 0.35	Limitations Depth to pan <40" Permeability <.2"/hr Saturation < 24" depth during growing season	1.00 1.00 1.00
338: Oxyaquic Xerofluvents-----	90	Limitations Permeability >= 1.2"/hr AWC from 2 - 6"	1.00 0.58	Limitations AWC from 2 - 6" Seepage	0.58 0.50
339: Oxyaquic Xerofluvents-----	90	Limitations Permeability >= 1.2"/hr Flooding >= frequent in growing season AWC from 2 - 6"	1.00 1.00 0.81	Limitations Flooding >= frequent in growing season AWC from 2 - 6" Seepage	1.00 0.81 0.50
360: Typic Xerofluvents	45	Limitations Permeability >= 1.2"/hr AWC < 2" to 40"	1.00 1.00	Limitations Sand textures in surface WEG = 1 or 2 AWC < 2" to 40"	1.00 1.00 1.00
Typic Xerofluvents	40	Limitations AWC < 2" to 40" Permeability >= 1.2"/hr	1.00 1.00	Limitations Sand textures in surface WEG = 1 or 2 AWC < 2" to 40"	1.00 1.00 1.00

Table 19b.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Basin or paddy irrigation		Graded border irrigation	
		Limitations	Value	Limitations	Value
375: Wickscorner-----	80	Limitations Sandy or loamy surface textures Permeability >= 1.2"/hr Slopes > 2%	1.00 1.00 1.00	Limitations Slopes > 2% AWC from 2 - 6"	1.00 0.41
376: Flagcanyon-----	50	Limitations Sandy or loamy surface textures Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00	Limitations Depth to pan <40" AWC < 2" to 40" Fragments (>3") > 10%	1.00 1.00 1.00
Wickscorner-----	35	Limitations Sandy or loamy surface textures Permeability >= 1.2"/hr Slopes > 2%	1.00 1.00 1.00	Limitations Slopes > 2% AWC from 2 - 6"	1.00 0.41
377: Flagcanyon taxadjunct-----	55	Limitations Permeability >= 1.2"/hr Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00	Limitations Depth to pan <40" Permeability <.2"/hr AWC < 2" to 40"	1.00 1.00 1.00
Durixeralfs-----	20	Limitations Sandy or loamy surface textures AWC < 2" to 40" Permeability >= 1.2"/hr	1.00 1.00 1.00	Limitations Saturation < 24" depth during growing season Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00
Duraquerts-----	15	Limitations AWC < 2" to 40" Depth to pan <40"	1.00 1.00	Limitations Depth to pan <40" AWC < 2" to 40" Permeability <.2"/hr	1.00 1.00 1.00
400: Subaco taxadjunct--	85	Limitations Depth to pan <40" SAR > 10 to 40" depth AWC from 2 - 6"	1.00 1.00 0.33	Limitations Depth to pan <40" Permeability <.2"/hr SAR > 10 to 40" depth	1.00 1.00 1.00
415: Ignord-----	90	Limitations Permeability >= 1.2"/hr AWC from 2 - 6"	1.00 0.43	Limitations AWC from 2 - 6"	0.43
416: Calcic Haploxerolls	90	Limitations Permeability >= 1.2"/hr SAR > 10 to 40" depth EC 4-8 dS/m	1.00 1.00 0.50	Limitations SAR > 10 to 40" depth EC 4-8 dS/m AWC from 2 - 6"	1.00 0.50 0.49
418: Almendra-----	85	Limitations Sandy or loamy surface textures	1.00	No limitations	
419: Conejo-----	85	Limitations Permeability >= 1.2"/hr SAR from 0.5 - 10 to 40" depth	1.00 0.01	Limitations SAR from 0.5 - 10 to 40" depth	0.01

Table 19b.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Basin or paddy irrigation		Graded border irrigation	
		Limitations	Value	Limitations	Value
420: Conejo-----	85	Limitations SAR from 0.5 - 10 to 40" depth	0.01	Limitations SAR from 0.5 - 10 to 40" depth	0.01
425: Vina-----	85	Limitations Permeability >= 1.2"/hr AWC from 2 - 6"	1.00 0.53	Limitations AWC from 2 - 6" Seepage	0.53 0.10
426: Vina-----	85	Limitations Sandy or loamy surface textures Permeability >= 1.2"/hr AWC from 2 - 6"	1.00 0.99 0.07	Limitations AWC from 2 - 6"	0.07
439: Oxyaquic Xerofluvents-----	85	Limitations Permeability >= 1.2"/hr Flooding >= frequent in growing season SAR from 0.5 - 10 to 40" depth	1.00 1.00 0.01	Limitations Permeability <.2"/hr Flooding >= frequent in growing season Saturation between 24-36" during growing season	1.00 1.00 0.03
440: Oxyaquic Xerofluvents-----	80	Limitations Permeability >= 1.2"/hr Flooding >= frequent in growing season AWC from 2 - 6"	1.00 1.00 0.38	Limitations Flooding >= frequent in growing season AWC from 2 - 6"	1.00 0.38
441: Oxyaquic Xerofluvents-----	90	Limitations Permeability >= 1.2"/hr	1.00	No limitations	
442: Durixerolls-----	55	Limitations Depth to pan <40"	1.00	Limitations Depth to pan <40" Permeability <.2"/hr Saturation between 24-36" during growing season	1.00 1.00 0.97
Haploxerolls-----	30	No limitations		No limitations	
443: Durixerolls-----	60	Limitations Sandy or loamy surface textures Permeability >= 1.2"/hr Depth to pan <40"	1.00 1.00 1.00	Limitations Depth to pan <40" Saturation < 24" depth during growing season AWC from 2 - 6"	1.00 1.00 0.73
Haploxerolls-----	25	Limitations Sandy or loamy surface textures	1.00	No limitations	
445: Chico-----	85	Limitations Sandy or loamy surface textures	1.00	No limitations	

Table 19b.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Basin or paddy irrigation		Graded border irrigation	
		Limitations	Value	Limitations	Value
447: Charger-----	80	Limitations Permeability \geq 1.2"/hr AWC from 2 - 6"	1.00 0.54	Limitations AWC from 2 - 6" Seepage	0.54 0.10
448: Haploxerolls-----	75	No limitations		No limitations	
449: Haploxerolls-----	75	Limitations Sandy or loamy surface textures	1.00	No limitations	
500: Lofgren-----	45	Limitations AWC from 2 - 6" SAR from 0.5 - 10 to 40" depth	0.19 0.01	Limitations Permeability $<$.2"/hr Saturation between 24-36" during growing season AWC from 2 - 6"	1.00 0.30 0.19
Blavo-----	40	Limitations Depth to pan $<$ 40" AWC from 2 - 6" SAR from 0.5 - 10 to 40" depth	1.00 0.33 0.01	Limitations Depth to pan $<$ 40" Permeability $<$.2"/hr Saturation between 24-36" during growing season	1.00 1.00 0.47
501: Lofgren-----	45	Limitations AWC from 2 - 6" SAR from 0.5 - 10 to 40" depth	0.20 0.01	Limitations Permeability $<$.2"/hr Saturation between 24-36" during growing season AWC from 2 - 6"	1.00 0.30 0.20
Blavo-----	40	Limitations Depth to pan $<$ 40" AWC from 2 - 6" SAR from 0.5 - 10 to 40" depth	1.00 0.32 0.01	Limitations Depth to pan $<$ 40" Permeability $<$.2"/hr Saturation between 24-36" during growing season	1.00 1.00 0.47
502: Blavo-----	80	Limitations Depth to pan $<$ 40" AWC from 2 - 6" SAR from 0.5 - 10 to 40" depth	1.00 0.27 0.01	Limitations Depth to pan $<$ 40" Permeability $<$.2"/hr Saturation between 24-36" during growing season	1.00 1.00 0.47
519: Edjobe-----	85	No limitations		Limitations Permeability $<$.2"/hr	1.00
520: Esquon-----	60	No limitations		Limitations Permeability $<$.2"/hr	1.00
Neerdobe-----	30	Limitations Depth to pan $<$ 40" AWC from 2 - 6"	1.00 0.04	Limitations Depth to pan $<$ 40" Permeability $<$.2"/hr Saturation between 24-36" during growing season	1.00 1.00 0.80

Table 19b.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Basin or paddy irrigation		Graded border irrigation	
		Limitations	Value	Limitations	Value
521: Neerdobe-----	85	Limitations Permeability >= 1.2"/hr	1.00	Limitations Permeability <.2"/hr	1.00
522: Clear Lake-----	80	Limitations Flooding >= frequent in growing season	1.00	Limitations Permeability <.2"/hr Saturation < 24" depth during growing season Flooding >= frequent in growing season	1.00 1.00 1.00
523: Esquon-----	80	Limitations Flooding >= frequent in growing season	1.00	Limitations Permeability <.2"/hr Saturation < 24" depth during growing season Flooding >= frequent in growing season	1.00 1.00 1.00
525: Govstanford-----	85	Limitations Sandy or loamy surface textures Permeability >= 1.2"/hr AWC from 2 - 6"	1.00 0.99 0.21	Limitations AWC from 2 - 6"	0.21
526: Govstanford-----	85	Limitations Sandy or loamy surface textures Permeability >= 1.2"/hr AWC from 2 - 6"	1.00 0.99 0.21	Limitations AWC from 2 - 6"	0.21
528: Neerdobe-----	90	Limitations Depth to pan <40" AWC from 2 - 6"	1.00 0.88	Limitations Depth to pan <40" Permeability <.2"/hr Saturation < 24" depth during growing season	1.00 1.00 1.00
590: Vistarobles-----	30	Limitations AWC < 2" to 40" Depth to pan <40"	1.00 1.00	Limitations Saturation < 24" depth during growing season Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00
Redding-----	25	Limitations Sandy or loamy surface textures Depth to pan <40" AWC from 2 - 6"	1.00 1.00 0.26	Limitations Depth to pan <40" Saturation between 24-36" during growing season AWC from 2 - 6"	1.00 0.30 0.26
Argonaut taxadjunct	20	Limitations Sandy or loamy surface textures Bedrock (soft) < 40" depth Slopes > 2%	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Permeability <.2"/hr Slopes > 2%	1.00 1.00 1.00
Haploxererts-----	15	Limitations Slopes > 2% Bedrock (soft) < 40" depth AWC from 2 - 6"	1.00 0.74 0.52	Limitations Permeability <.2"/hr Slopes > 2% Bedrock (soft) < 40" depth	1.00 1.00 0.74

Table 19b.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Basin or paddy irrigation		Graded border irrigation	
		Limitations	Value	Limitations	Value
603:					
Oroville-----	30	Limitations AWC < 2" to 40" Permeability >= 1.2"/hr Depth to pan <40"	1.00 1.00 1.00	Limitations Depth to pan <40" AWC < 2" to 40" Permeability <.2"/hr	1.00 1.00 1.00
Thermalito-----	25	Limitations Permeability >= 1.2"/hr Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00	Limitations Depth to pan <40" Permeability <.2"/hr AWC < 2" to 40"	1.00 1.00 1.00
Fernandez-----	15	Limitations Permeability >= 1.2"/hr AWC from 2 - 6"	1.00 0.03	Limitations Permeability <.2"/hr AWC from 2 - 6"	1.00 0.03
Thompsonflat-----	15	Limitations Permeability >= 1.2"/hr AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00	Limitations Permeability <.2"/hr Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
605:					
Duric Xerarents----	75	Limitations AWC < 2" to 40" Depth to pan <40"	1.00 1.00	Limitations Depth to pan <40" AWC < 2" to 40" Saturation < 24" depth during growing season	1.00 1.00 1.00
Oroville-----	20	Limitations AWC < 2" to 40" Permeability >= 1.2"/hr Depth to pan <40"	1.00 1.00 1.00	Limitations Depth to pan <40" AWC < 2" to 40" Permeability <.2"/hr	1.00 1.00 1.00
606:					
Redtough-----	45	Limitations Sandy or loamy surface textures AWC < 2" to 40" Depth to pan <40"	1.00 1.00 1.00	Limitations Saturation < 24" depth during growing season Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00
Fallager-----	30	Limitations Sandy or loamy surface textures AWC < 2" to 40" Depth to pan <40"	1.00 1.00 1.00	Limitations Saturation < 24" depth during growing season Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00
Anita-----	15	Limitations AWC < 2" to 40" Depth to pan <40"	1.00 1.00	Limitations Saturation < 24" depth during growing season Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00
609:					
Anita-----	50	Limitations AWC < 2" to 40" Depth to pan <40"	1.00 1.00	Limitations Saturation < 24" depth during growing season Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00

Table 19b.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Basin or paddy irrigation		Graded border irrigation	
		Limitations	Value	Limitations	Value
609: Tuscan taxadjunct--	40	Limitations Depth to pan <40" AWC < 2" to 40"	1.00 1.00	Limitations Depth to pan <40" AWC < 2" to 40" Saturation < 24" depth during growing season	1.00 1.00 1.00
675: Clearhayes-----	70	Limitations AWC < 2" to 40" Bedrock (soft) < 40" depth	1.00 0.26	Limitations Permeability <.2"/hr Seepage Fragments (>3") > 10%	1.00 1.00 1.00
Hamslough-----	15	Limitations Depth to pan <40" AWC < 2" to 40"	1.00 1.00	Limitations Depth to pan <40" Permeability <.2"/hr AWC < 2" to 40"	1.00 1.00 1.00
677: Tuscan-----	40	Limitations Sandy or loamy surface textures AWC < 2" to 40" Bedrock (soft) < 40" depth	1.00 1.00 1.00	Limitations Saturation < 24" depth during growing season Bedrock (soft) < 40" depth Depth to pan <40"	1.00 1.00 1.00 1.00
Fallager-----	25	Limitations Sandy or loamy surface textures AWC < 2" to 40" Bedrock (soft) < 40" depth	1.00 1.00 1.00	Limitations Saturation < 24" depth during growing season Bedrock (soft) < 40" depth Depth to pan <40"	1.00 1.00 1.00 1.00
Anita-----	15	Limitations AWC < 2" to 40" Depth to pan <40" Bedrock (soft) < 40" depth	1.00 1.00 0.87	Limitations Saturation < 24" depth during growing season Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00 1.00
685: Bosquejo taxadjunct	70	Limitations AWC from 2 - 6"	0.59	Limitations Permeability <.2"/hr AWC from 2 - 6"	1.00 0.59
686: Redsluff taxadjunct	70	No limitations		Limitations Permeability <.2"/hr	1.00

Table 19b.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Basin or paddy irrigation		Graded border irrigation	
		Limitations	Value	Limitations	Value
991: Xerofluvents-----	75	Limitations		Limitations	
		Permeability \geq 1.2"/hr	1.00	Slopes $>$ 2%	1.00
		Slopes $>$ 2%	1.00	AWC from 2 - 6"	0.98
		AWC from 2 - 6"	0.98		

The interpretation for basin or paddy irrigation evaluates the following soil properties at variable depths in the soil: texture of the surface layer; flooding during the growing season; ponding; slope; depth to hard or soft bedrock; depth to a cemented pan; electrical conductivity (EC); sodium content expressed as sodium adsorption ratio (SAR); sulfur content based on taxonomic placement; permeability more than 3cm/hr, allowing seepage; and available water capacity.

The interpretation for graded border irrigation evaluates the following soil properties at variable depths in the soil: a high clay content and smectitic mineralogy; flooding during the growing season; depth to wetness; slope; depth to hard or soft bedrock; depth to a cemented pan; fragments more than 75 mm in size; permeability less than .5 cm/hr, allowing saturated conditions; available water capacity (AWC); electrical conductivity (EC); sodium content expressed as sodium adsorption ratio (SAR); and sulfur content based on taxonomic placement.

Table 19c.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. Only the soils that are used for the production of commonly grown crops or for livestock grazing are listed. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. The rating is based on the limitation with the highest value. Only the five highest value limitations are listed. There may be more limitations. Fine-earth fractions and rock fragments are reported on a weight basis. An explanation of the rating criteria and of the abbreviations used in describing the limitations is given at the end of the table)

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
100:							
Anita-----	60	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Saturation < 24" depth during growing season	1.00	Saturation < 2' depth	1.00	Saturation < 24" depth during growing season	1.00
		Depth to pan <40"	1.00	Depth to pan <= 20"	1.00	Depth to pan <40"	1.00
Galt-----	25	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		Saturation < 24" depth during growing season	1.00	Depth to pan between 20 and 40"	0.29	Saturation < 24" depth during growing season	1.00
104:							
Bosquejo-----	85	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
105:							
Busacca-----	85	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		SAR from 0.5 - 10 to 40" depth	0.01	SAR from 0.5 - 10 to 40" depth	0.01	SAR from 0.5 - 10 to 40" depth	0.01
108:							
Tuscan-----	45	Limitations		Limitations		Limitations	
		Saturation < 24" depth during growing season	1.00	Saturation < 2' depth	1.00	Saturation < 24" depth during growing season	1.00
		Depth to pan <40"	1.00	Depth to pan <= 20"	1.00	Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00
Igo-----	20	Limitations		Limitations		Limitations	
		Saturation < 24" depth during growing season	1.00	Saturation < 2' depth	1.00	Saturation < 24" depth during growing season	1.00
		Depth to pan <40"	1.00	Depth to pan <= 20"	1.00	Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
108: Anita-----	15	Limitations Ponding (any duration) Saturation < 24" depth during growing season Depth to pan <40"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth Depth to pan <= 20"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 24" depth during growing season Depth to pan <40"	1.00 1.00 1.00
109: Bosquejo-----	85	Limitations Ponding (any duration)	1.00	Limitations Ponding (any duration)	1.00	Limitations Ponding (any duration)	1.00
110: Bosquejo-----	90	Limitations Ponding (any duration)	1.00	Limitations Ponding (any duration)	1.00	Limitations Ponding (any duration)	1.00
118co: Clear Lake-----	90	Limitations Flooding >= frequent in growing season SAR from 0.5 - 10 to 40" depth	1.00 0.65	Limitations Flooding >= frequent in growing season SAR from 0.5 - 10 to 40" depth	1.00 0.65	Limitations Flooding >= frequent in growing season SAR from 0.5 - 10 to 40" depth	1.00 0.65
120: Gridley taxadjunct--	80	Limitations Ponding (any duration) Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth Depth to pan <= 20"	1.00 1.00 0.99	Limitations Ponding (any duration) Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00
121: Boga-----	45	Limitations Ponding (any duration)	1.00	Limitations Ponding (any duration)	1.00	Limitations Ponding (any duration)	1.00
Loemstone-----	40	Limitations Ponding (any duration) SAR from 0.5 - 10 to 40" depth	1.00 0.01	Limitations Ponding (any duration) SAR from 0.5 - 10 to 40" depth	1.00 0.01	Limitations Ponding (any duration) SAR from 0.5 - 10 to 40" depth	1.00 0.01
121su: Columbia-----	80	Limitations Flooding >= frequent in growing season AWC from 2 - 6"	1.00 0.80	Limitations Flooding >= frequent in growing season	1.00	Limitations Flooding >= frequent in growing season AWC from 2 - 6"	1.00 0.80

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
125: Gridley taxadjunct--	65	Limitations Ponding (any duration) Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth Depth to pan between 20 and 40"	1.00 1.00 0.97	Limitations Ponding (any duration) Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00
Calcic Haploxerolls	20	Limitations SAR > 10 to 40" depth EC 4-8 dS/m AWC from 2 - 6"	1.00 0.50 0.49	Limitations SAR > 10 to 40" depth EC 4-8 dS/m	1.00 0.50	Limitations SAR > 10 to 40" depth EC 4-8 dS/m AWC from 2 - 6"	1.00 0.50 0.49
126: Liveoak-----	85	Limitations AWC from 2 - 6"	0.40	No limitations		Limitations AWC from 2 - 6"	0.40
127: Gridley taxadjunct--	85	Limitations Ponding (any duration) Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth Depth to pan between 20 and 40"	1.00 1.00 0.97	Limitations Ponding (any duration) Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00
130: Eastbiggs-----	80	Limitations Depth to pan <40" Saturation < 24" depth during growing season AWC from 2 - 6"	1.00 1.00 0.72	Limitations Saturation < 2' depth Depth to pan between 20 and 40"	1.00 0.71	Limitations Depth to pan <40" Saturation < 24" depth during growing season AWC from 2 - 6"	1.00 1.00 0.72
133: Eastbiggs-----	50	Limitations Depth to pan <40" Saturation < 24" depth during growing season AWC from 2 - 6"	1.00 1.00 0.72	Limitations Saturation < 2' depth Depth to pan between 20 and 40"	1.00 0.71	Limitations Depth to pan <40" Saturation < 24" depth during growing season AWC from 2 - 6"	1.00 1.00 0.72
Galt-----	40	Limitations Ponding (any duration) Depth to pan <40" Saturation < 24" depth during growing season	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth Depth to pan between 20 and 40"	1.00 1.00 0.46	Limitations Ponding (any duration) Depth to pan <40" Saturation < 24" depth during growing season	1.00 1.00 1.00

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
136:							
Duric Xerarents-----	35	Limitations Ponding (any duration) Saturation < 24" depth during growing season Depth to pan <40"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth Depth to pan <= 20"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 24" depth during growing season Depth to pan <40"	1.00 1.00 1.00
Duric Xerarents-----	30	Limitations Ponding (any duration) AWC from 2 - 6"	1.00 0.11	Limitations Ponding (any duration)	1.00	Limitations Ponding (any duration) AWC from 2 - 6"	1.00 0.11
Eastbiggs-----	25	Limitations Ponding (any duration) Depth to pan <40" Saturation < 24" depth during growing season	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth Depth to pan between 20 and 40"	1.00 1.00 0.46	Limitations Ponding (any duration) Depth to pan <40" Saturation < 24" depth during growing season	1.00 1.00 1.00
138su:							
Liveoak-----	85	No limitations		No limitations		No limitations	
139su:							
Liveoak taxadjunct--	45	Limitations Flooding >= frequent in growing season	1.00	Limitations Flooding >= frequent in growing season	1.00	Limitations Flooding >= frequent in growing season	1.00
Galt taxadjunct-----	40	Limitations Depth to pan <40" Saturation < 24" depth during growing season Flooding >= frequent in growing season	1.00 1.00 1.00	Limitations Saturation < 2' depth Flooding >= frequent in growing season Depth to pan <= 20"	1.00 1.00 0.99	Limitations Depth to pan <40" Saturation < 24" depth during growing season Flooding >= frequent in growing season	1.00 1.00 1.00
143su:							
Marcum-----	45	Limitations Bedrock (soft) < 40" depth	0.56	No limitations		Limitations Bedrock (soft) < 40" depth	0.56
Gridley-----	40	Limitations Bedrock (soft) < 40" depth	0.96	No limitations		Limitations Bedrock (soft) < 40" depth	0.96
150:							
Columbia-----	85	Limitations Lcos, cos, s, or ls in surface Flooding >= frequent in growing season AWC from 2 - 6"	1.00 1.00 0.32	Limitations Flooding >= frequent in growing season	1.00	Limitations Sand textures in surface layer Flooding >= frequent in growing season AWC from 2 - 6"	1.00 1.00 0.32

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
150su: Olashes-----	85	Limitations AWC from 2 - 6"	0.08	No limitations		Limitations AWC from 2 - 6"	0.08
152: Gianella-----	85	Limitations Flooding >= frequent in growing season	1.00	Limitations Flooding >= frequent in growing season	1.00	Limitations Flooding >= frequent in growing season	1.00
153: Gianella-----	85	Limitations Flooding >= frequent in growing season AWC from 2 - 6"	1.00 0.86	Limitations Flooding >= frequent in growing season	1.00	Limitations Flooding >= frequent in growing season AWC from 2 - 6"	1.00 0.86
154: Gianella-----	85	Limitations Flooding >= frequent in growing season AWC from 2 - 6"	1.00 0.21	Limitations Flooding >= frequent in growing season	1.00	Limitations Flooding >= frequent in growing season AWC from 2 - 6" Seepage	1.00 0.21 0.10
158: Gianella-----	85	Limitations AWC from 2 - 6"	0.16	No limitations		Limitations AWC from 2 - 6" Seepage	0.16 0.10
160: Gianella-----	85	No limitations		No limitations		No limitations	
161: Gianella-----	90	Limitations AWC from 2 - 6"	0.16	No limitations		Limitations AWC from 2 - 6" Seepage	0.16 0.10
162: Gianella-----	90	No limitations		No limitations		No limitations	
163yu: Holillipah-----	85	Limitations Lcos, cos, s, or ls in surface WEG = 1 or 2 AWC < 2" to 40"	1.00 1.00 1.00	Limitations Flooding >= frequent in growing season	1.00	Limitations Sand textures in surface layer WEG = 1 or 2 AWC < 2" to 40"	1.00 1.00 1.00
175: Farwell-----	85	Limitations SAR from 0.5 - 10 to 40" depth	0.01	Limitations SAR from 0.5 - 10 to 40" depth	0.01	Limitations SAR from 0.5 - 10 to 40" depth	0.01
176: Farwell-----	85	Limitations SAR from 0.5 - 10 to 40" depth	0.01	Limitations SAR from 0.5 - 10 to 40" depth	0.01	Limitations SAR from 0.5 - 10 to 40" depth	0.01

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
177: Farwell-----	85	Limitations SAR from 0.5 - 10 to 40" depth	0.01	Limitations SAR from 0.5 - 10 to 40" depth	0.01	Limitations SAR from 0.5 - 10 to 40" depth	0.01
178: Arbuckle-----	87	No limitations		No limitations		No limitations	
179: Moda taxadjunct----	65	Limitations Ponding (any duration) Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth Depth to pan between 20 and 40"	1.00 1.00 0.97	Limitations Ponding (any duration) Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00
Arbuckle-----	20	No limitations		No limitations		No limitations	
180: Dodgeland-----	85	Limitations Ponding (any duration) Saturation < 24" depth during growing season	1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth	1.00 1.00	Limitations Ponding (any duration) Saturation < 24" depth during growing season	1.00 1.00
181: Dodgeland-----	80	Limitations Ponding (any duration) Saturation < 24" depth during growing season Flooding >= frequent in growing season	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth Flooding >= frequent in growing season	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 24" depth during growing season Flooding >= frequent in growing season	1.00 1.00 1.00
189: Esquon-----	90	Limitations Ponding (any duration)	1.00	Limitations Ponding (any duration)	1.00	Limitations Ponding (any duration)	1.00
200: Parrott-----	85	Limitations Ponding (any duration) SAR from 0.5 - 10 to 40" depth	1.00 0.01	Limitations Ponding (any duration) SAR from 0.5 - 10 to 40" depth	1.00 0.01	Limitations Ponding (any duration) SAR from 0.5 - 10 to 40" depth	1.00 0.01
201: Parrott-----	85	Limitations Ponding (any duration) Flooding >= frequent in growing season SAR from 0.5 - 10 to 40" depth	1.00 1.00 0.01	Limitations Ponding (any duration) Flooding >= frequent in growing season SAR from 0.5 - 10 to 40" depth	1.00 1.00 0.01	Limitations Ponding (any duration) Flooding >= frequent in growing season SAR from 0.5 - 10 to 40" depth	1.00 1.00 0.01

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
203: Kusalslough-----	85	Limitations Ponding (any duration)	1.00	Limitations Ponding (any duration)	1.00	Limitations Ponding (any duration)	1.00
205: Parrott-----	50	Limitations Ponding (any duration) Flooding >= frequent in growing season SAR from 0.5 - 10 to 40" depth	1.00 1.00 0.01	Limitations Ponding (any duration) Flooding >= frequent in growing season SAR from 0.5 - 10 to 40" depth	1.00 1.00 0.01	Limitations Ponding (any duration) Flooding >= frequent in growing season SAR from 0.5 - 10 to 40" depth	1.00 1.00 0.01
Vermet-----	35	Limitations Ponding (any duration) Saturation < 24" depth during growing season Flooding >= frequent in growing season	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth Flooding >= frequent in growing season	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 24" depth during growing season Flooding >= frequent in growing season	1.00 1.00 1.00
220: Esquon-----	60	Limitations Ponding (any duration) Flooding >= frequent in growing season Saturation between 24-36" during growing season	1.00 1.00 0.47	Limitations Ponding (any duration) Saturation < 2' depth Flooding >= frequent in growing season	1.00 1.00 1.00	Limitations Ponding (any duration) Flooding >= frequent in growing season Saturation between 24-36" during growing season	1.00 1.00 0.47
Clear Lake-----	30	Limitations Ponding (any duration) Saturation < 24" depth during growing season Flooding >= frequent in growing season	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth Flooding >= frequent in growing season	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 24" depth during growing season Flooding >= frequent in growing season	1.00 1.00 1.00
248yu: Trainer-----	85	Limitations AWC from 2 - 6"	0.21	No limitations		Limitations AWC from 2 - 6"	0.21
250: Llanoseco-----	90	Limitations Ponding (any duration)	1.00	Limitations Ponding (any duration)	1.00	Limitations Ponding (any duration)	1.00

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
252: Whitecabin-----	60	Limitations Ponding (any duration) SAR from 0.5 - 10 to 40" depth	1.00 0.98	Limitations Ponding (any duration) SAR from 0.5 - 10 to 40" depth	1.00 0.98	Limitations Ponding (any duration) SAR from 0.5 - 10 to 40" depth	1.00 0.98
Ordferry-----	25	Limitations Ponding (any duration) Depth to pan <40" SAR from 0.5 - 10 to 40" depth	1.00 1.00 0.91	Limitations Ponding (any duration) Saturation < 2' depth SAR from 0.5 - 10 to 40" depth	1.00 1.00 0.91	Limitations Ponding (any duration) Depth to pan <40" SAR from 0.5 - 10 to 40" depth	1.00 1.00 0.91
255: Whitecabin-----	60	Limitations Ponding (any duration) SAR from 0.5 - 10 to 40" depth	1.00 0.98	Limitations Ponding (any duration) SAR from 0.5 - 10 to 40" depth	1.00 0.98	Limitations Ponding (any duration) SAR from 0.5 - 10 to 40" depth	1.00 0.98
Ordferry-----	30	Limitations Ponding (any duration) Depth to pan <40" SAR from 0.5 - 10 to 40" depth	1.00 1.00 0.91	Limitations Ponding (any duration) Saturation < 2' depth SAR from 0.5 - 10 to 40" depth	1.00 1.00 0.91	Limitations Ponding (any duration) Depth to pan <40" SAR from 0.5 - 10 to 40" depth	1.00 1.00 0.91
256: Whitecabin-----	85	Limitations Ponding (any duration) SAR from 0.5 - 10 to 40" depth	1.00 0.98	Limitations Ponding (any duration) SAR from 0.5 - 10 to 40" depth	1.00 0.98	Limitations Ponding (any duration) SAR from 0.5 - 10 to 40" depth	1.00 0.98
257: Llanoseco-----	90	Limitations Ponding (any duration) Flooding >= frequent in growing season	1.00 1.00	Limitations Ponding (any duration) Flooding >= frequent in growing season	1.00 1.00	Limitations Ponding (any duration) Flooding >= frequent in growing season	1.00 1.00
258: Codora-----	85	Limitations Ponding (any duration)	1.00	Limitations Ponding (any duration)	1.00	Limitations Ponding (any duration)	1.00
260: Ordferry-----	90	Limitations Ponding (any duration) Depth to pan <40" SAR from 0.5 - 10 to 40" depth	1.00 1.00 0.91	Limitations Ponding (any duration) Saturation < 2' depth SAR from 0.5 - 10 to 40" depth	1.00 1.00 0.91	Limitations Ponding (any duration) Depth to pan <40" SAR from 0.5 - 10 to 40" depth	1.00 1.00 0.91

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
280: Columbia taxadjunct	80	Limitations Saturation < 24" depth during growing season Flooding >= frequent in growing season AWC from 2 - 6"	1.00 1.00 0.06	Limitations Saturation < 2' depth Flooding >= frequent in growing season	1.00 1.00	Limitations Saturation < 24" depth during growing season Flooding >= frequent in growing season AWC from 2 - 6"	1.00 1.00 0.06
290: Perkins-----	90	Limitations AWC from 2 - 6"	0.88	No limitations		Limitations AWC from 2 - 6"	0.88
300: Redsluff-----	80	Limitations AWC from 2 - 6"	0.45	No limitations		Limitations Seepage AWC from 2 - 6"	1.00 0.45
301: Wafap-----	70	Limitations AWC < 2" to 40" Fragments (>3") > 25%	1.00 0.50	Limitations Saturation < 2' depth	1.00	Limitations Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00
Hamslough-----	15	Limitations Ponding (any duration) Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth Depth to pan between 20 and 40"	1.00 1.00 0.71	Limitations Ponding (any duration) Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00
302: Redtough-----	50	Limitations Saturation < 24" depth during growing season Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00	Limitations Saturation < 2' depth Depth to pan <= 20"	1.00 1.00	Limitations Saturation < 24" depth during growing season Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00
Redswale-----	35	Limitations Ponding (any duration) Saturation < 24" depth during growing season Depth to pan <40"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth Depth to pan <= 20"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 24" depth during growing season Depth to pan <40"	1.00 1.00 1.00
303: Munjar-----	60	Limitations Depth to pan <40" AWC < 2" to 40" Saturation between 24-36" during growing season	1.00 1.00 0.97	Limitations Saturation < 2' depth Depth to pan between 20 and 40"	1.00 0.35	Limitations Depth to pan <40" Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
303: Tuscan taxadjunct---	20	Limitations Depth to pan <40" AWC < 2" to 40" Saturation < 24" depth during growing season	1.00 1.00 1.00	Limitations Saturation < 2' depth Depth to pan between 20 and 40"	1.00 0.54	Limitations Depth to pan <40" AWC < 2" to 40" Saturation < 24" depth during growing season	1.00 1.00 1.00
Galt-----	10	Limitations Ponding (any duration) Depth to pan <40" Saturation < 24" depth during growing season	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth Depth to pan between 20 and 40"	1.00 1.00 0.29	Limitations Ponding (any duration) Depth to pan <40" Saturation < 24" depth during growing season	1.00 1.00 1.00
304: Redtough-----	80	Limitations Depth to pan <40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Depth to pan <= 20"	1.00	Limitations Depth to pan <40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
305: Redtough-----	45	Limitations Saturation < 24" depth during growing season Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00	Limitations Saturation < 2' depth Depth to pan <= 20"	1.00 1.00	Limitations Saturation < 24" depth during growing season Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00
Redswale-----	25	Limitations Ponding (any duration) Saturation < 24" depth during growing season Depth to pan <40"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth Depth to pan <= 20"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 24" depth during growing season Depth to pan <40"	1.00 1.00 1.00
Anita-----	20	Limitations Ponding (any duration) Saturation < 24" depth during growing season Depth to pan <40"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth Depth to pan <= 20"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 24" depth during growing season Depth to pan <40"	1.00 1.00 1.00
307: Duric Xerarents----	70	Limitations Ponding (any duration) Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth Depth to pan <= 20"	1.00 1.00 1.00	Limitations Ponding (any duration) Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00
310: Kimball-----	85	Limitations AWC < 2" to 40"	1.00	No limitations		Limitations AWC < 2" to 40"	1.00

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
317: Thompsonflat-----	75	Limitations AWC from 2 - 6"	0.62	No limitations		Limitations Fragments (>3") > 10% Slopes > 2% AWC from 2 - 6"	1.00 1.00 0.62
318: Thompsonflat-----	50	Limitations AWC < 2" to 40"	1.00	No limitations		Limitations Fragments (>3") > 10% AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Oroville-----	40	Limitations Ponding (any duration) Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth Depth to pan between 20 and 40"	1.00 1.00 0.95	Limitations Ponding (any duration) Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00
320: Vistarobles-----	50	Limitations Ponding (any duration) Saturation < 24" depth during growing season Depth to pan <40"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth Depth to pan <= 20"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 24" depth during growing season Depth to pan <40"	1.00 1.00 1.00
Redding-----	40	Limitations Depth to pan <40" Saturation between 24-36" during growing season AWC from 2 - 6"	1.00 0.30 0.26	Limitations Depth to pan between 20 and 40"	0.10	Limitations Depth to pan <40" Saturation between 24-36" during growing season AWC from 2 - 6"	1.00 0.30 0.26
321: Durixeralfs-----	50	Limitations Depth to pan <40" AWC < 2" to 40" Saturation between 24-36" during growing season	1.00 1.00 0.97	Limitations Saturation < 2' depth Depth to pan between 20 and 40"	1.00 0.71	Limitations Depth to pan <40" AWC < 2" to 40" Saturation between 24-36" during growing season	1.00 1.00 0.97
Durixeralfs-----	20	Limitations Ponding (any duration) Saturation < 24" depth during growing season Depth to pan <40"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth Depth to pan <= 20"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 24" depth during growing season Depth to pan <40"	1.00 1.00 1.00

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
321: Typic Petraquepts---	15	Limitations Ponding (any duration) Saturation < 24" depth during growing season Depth to pan <40"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth Depth to pan <= 20"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 24" depth during growing season Depth to pan <40"	1.00 1.00 1.00
330: Wilsoncreek-----	60	No limitations		No limitations		No limitations	
Trainer-----	25	No limitations		No limitations		No limitations	
331: Thompsonflat-----	85	Limitations Slopes > 15% AWC from 2 - 6"	1.00 0.62	No limitations		Limitations Slopes > 2% Fragments (>3") > 10% AWC from 2 - 6"	1.00 1.00 0.62
335: Galt-----	85	Limitations Ponding (any duration) Depth to pan <40" Saturation < 24" depth during growing season	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth Depth to pan between 20 and 40"	1.00 1.00 0.46	Limitations Ponding (any duration) Depth to pan <40" Saturation < 24" depth during growing season	1.00 1.00 1.00
336: Galt-----	90	Limitations Ponding (any duration) Depth to pan <40" Saturation < 24" depth during growing season	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth Depth to pan between 20 and 40"	1.00 1.00 0.29	Limitations Ponding (any duration) Depth to pan <40" Saturation < 24" depth during growing season	1.00 1.00 1.00
337: Galt-----	85	Limitations Ponding (any duration) Depth to pan <40" Saturation < 24" depth during growing season	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth Depth to pan between 20 and 40"	1.00 1.00 0.46	Limitations Ponding (any duration) Depth to pan <40" Saturation < 24" depth during growing season	1.00 1.00 1.00
338: Oxyaquic Xerofluvents-----	90	Limitations Ponding (any duration) AWC from 2 - 6"	1.00 0.58	Limitations Ponding (any duration)	1.00	Limitations Ponding (any duration) AWC from 2 - 6" Seepage	1.00 0.58 0.50

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
339: Oxyaquic Xerofluvents-----	90	Limitations Ponding (any duration) Flooding >= frequent in growing season AWC from 2 - 6"	1.00 1.00 0.81	Limitations Ponding (any duration) Flooding >= frequent in growing season	1.00 1.00	Limitations Ponding (any duration) Flooding >= frequent in growing season AWC from 2 - 6"	1.00 1.00 0.81
360: Typic Xerofluvents--	45	Limitations Sand textures in surface layer WEG = 1 or 2 AWC < 2" to 40"	1.00 1.00 1.00	No limitations		Limitations Sand textures in surface layer WEG = 1 or 2 AWC < 2" to 40"	1.00 1.00 1.00
Typic Xerofluvents--	40	Limitations Sand textures in surface layer WEG = 1 or 2 AWC < 2" to 40"	1.00 1.00 1.00	No limitations		Limitations Sand textures in surface layer WEG = 1 or 2 AWC < 2" to 40"	1.00 1.00 1.00
375: Wickscorner-----	80	Limitations AWC from 2 - 6"	0.41	No limitations		Limitations Slopes > 2% AWC from 2 - 6"	1.00 0.41
376: Flagcanyon-----	50	Limitations Depth to pan <40" AWC < 2" to 40" Saturation between 24-36" during growing season	1.00 1.00 0.63	Limitations Depth to pan between 20 and 40"	0.46	Limitations Depth to pan <40" AWC < 2" to 40" Fragments (>3") > 10%	1.00 1.00 1.00
Wickscorner-----	35	Limitations AWC from 2 - 6"	0.41	No limitations		Limitations Slopes > 2% AWC from 2 - 6"	1.00 0.41
377: Flagcanyon taxadjunct-----	55	Limitations Ponding (any duration) Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth Depth to pan between 20 and 40"	1.00 1.00 0.35	Limitations Ponding (any duration) Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00
Durixeralfs-----	20	Limitations Ponding (any duration) Saturation < 24" depth during growing season Depth to pan <40"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth Depth to pan <= 20"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 24" depth during growing season Depth to pan <40"	1.00 1.00 1.00

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
377: Duraquerts-----	15	Limitations Ponding (any duration) Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth Depth to pan between 20 and 40"	1.00 1.00 0.95	Limitations Ponding (any duration) Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00
400: Subaco taxadjunct---	85	Limitations Ponding (any duration) Depth to pan <40" SAR > 10 to 40" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth SAR > 10 to 40" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Depth to pan <40" SAR > 10 to 40" depth	1.00 1.00 1.00
415: Ignord-----	90	Limitations AWC from 2 - 6"	0.43	No limitations		Limitations AWC from 2 - 6"	0.43
416: Calcic Haploxerolls	90	Limitations SAR > 10 to 40" depth EC 4-8 dS/m AWC from 2 - 6"	1.00 0.50 0.49	Limitations SAR > 10 to 40" depth EC 4-8 dS/m	1.00 0.50	Limitations SAR > 10 to 40" depth EC 4-8 dS/m AWC from 2 - 6"	1.00 0.50 0.49
418: Almendra-----	85	No limitations		No limitations		No limitations	
419: Conejo-----	85	Limitations SAR from 0.5 - 10 to 40" depth	0.01	Limitations SAR from 0.5 - 10 to 40" depth	0.01	Limitations SAR from 0.5 - 10 to 40" depth	0.01
420: Conejo-----	85	Limitations SAR from 0.5 - 10 to 40" depth	0.01	Limitations SAR from 0.5 - 10 to 40" depth	0.01	Limitations SAR from 0.5 - 10 to 40" depth	0.01
425: Vina-----	85	Limitations AWC from 2 - 6"	0.53	No limitations		Limitations AWC from 2 - 6" Seepage	0.53 0.10
426: Vina-----	85	Limitations AWC from 2 - 6"	0.07	No limitations		Limitations AWC from 2 - 6"	0.07

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
439: Oxyaquic Xerofluvents-----	85	Limitations Ponding (any duration) Permeability <=.2"/hr and not smectitic mineralogy Flooding >= frequent in growing season	1.00 1.00 1.00	Limitations Ponding (any duration) Permeability <=.2"/hr and not smectitic mineralogy Flooding >= frequent in growing season	1.00 1.00 1.00	Limitations Ponding (any duration) Permeability <=.2"/hr and not smectitic mineralogy Flooding >= frequent in growing season	1.00 1.00 1.00
440: Oxyaquic Xerofluvents-----	80	Limitations Ponding (any duration) Flooding >= frequent in growing season AWC from 2 - 6"	1.00 1.00 0.38	Limitations Ponding (any duration) Flooding >= frequent in growing season	1.00 1.00	Limitations Ponding (any duration) Flooding >= frequent in growing season AWC from 2 - 6"	1.00 1.00 0.38
441: Oxyaquic Xerofluvents-----	90	Limitations Ponding (any duration)	1.00	Limitations Ponding (any duration)	1.00	Limitations Ponding (any duration)	1.00
442: Durixerolls-----	55	Limitations Ponding (any duration) Depth to pan <40" Saturation between 24-36" during growing season	1.00 1.00 0.97	Limitations Ponding (any duration) Saturation < 2' depth Depth to pan between 20 and 40"	1.00 1.00 0.20	Limitations Ponding (any duration) Depth to pan <40" Saturation between 24-36" during growing season	1.00 1.00 0.97
Haploxerolls-----	30	No limitations		No limitations		No limitations	
443: Durixerolls-----	60	Limitations Depth to pan <40" Saturation < 24" depth during growing season AWC from 2 - 6"	1.00 1.00 0.73	Limitations Saturation < 2' depth Depth to pan between 20 and 40"	1.00 0.80	Limitations Depth to pan <40" Saturation < 24" depth during growing season AWC from 2 - 6"	1.00 1.00 0.73
Haploxerolls-----	25	No limitations		No limitations		No limitations	
445: Chico-----	85	No limitations		No limitations		No limitations	
447: Charger-----	80	Limitations AWC from 2 - 6"	0.54	No limitations		Limitations AWC from 2 - 6" Seepage	0.54 0.10

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
448: Haploxerolls-----	75	No limitations		No limitations		No limitations	
449: Haploxerolls-----	75	No limitations		No limitations		No limitations	
500: Lofgren-----	45	Limitations Ponding (any duration) 1.00 Clay >= 60% in surface layer 1.00 Saturation between 24-36" during growing season 0.30		Limitations Ponding (any duration) 1.00 Saturation < 2' depth 1.00 SAR from 0.5 - 10 to 40" depth 0.01		Limitations Ponding (any duration) 1.00 Saturation between 24-36" during growing season 0.30 AWC from 2 - 6" 0.19	
Blavo-----	40	Limitations Ponding (any duration) 1.00 Depth to pan <40" Clay >= 60% in surface layer 1.00		Limitations Ponding (any duration) 1.00 Saturation < 2' depth 1.00 Depth to pan between 20 and 40" 0.06		Limitations Ponding (any duration) 1.00 Depth to pan <40" Saturation between 24-36" during growing season 0.47	
501: Lofgren-----	45	Limitations Ponding (any duration) 1.00 Clay >= 60% in surface layer 1.00 Saturation between 24-36" during growing season 0.30		Limitations Ponding (any duration) 1.00 Saturation < 2' depth 1.00 SAR from 0.5 - 10 to 40" depth 0.01		Limitations Ponding (any duration) 1.00 Saturation between 24-36" during growing season 0.30 AWC from 2 - 6" 0.20	
Blavo-----	40	Limitations Ponding (any duration) 1.00 Depth to pan <40" Clay >= 60% in surface layer 1.00		Limitations Ponding (any duration) 1.00 Saturation < 2' depth 1.00 Depth to pan between 20 and 40" 0.06		Limitations Ponding (any duration) 1.00 Depth to pan <40" Saturation between 24-36" during growing season 0.47	
502: Blavo-----	80	Limitations Ponding (any duration) 1.00 Depth to pan <40" Saturation between 24-36" during growing season 0.47		Limitations Ponding (any duration) 1.00 Saturation < 2' depth 1.00 Depth to pan between 20 and 40" 0.06		Limitations Ponding (any duration) 1.00 Depth to pan <40" Saturation between 24-36" during growing season 0.47	
519: Edjobe-----	85	Limitations Ponding (any duration) 1.00		Limitations Ponding (any duration) 1.00		Limitations Ponding (any duration) 1.00	

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
520: Esquon-----	60	Limitations Ponding (any duration)	1.00	Limitations Ponding (any duration)	1.00	Limitations Ponding (any duration)	1.00
Neerdobe-----	30	Limitations Ponding (any duration) Depth to pan <40" Saturation between 24-36" during growing season	1.00 1.00 0.80	Limitations Ponding (any duration) Saturation < 2' depth Depth to pan between 20 and 40"	1.00 1.00 0.01	Limitations Ponding (any duration) Depth to pan <40" Saturation between 24-36" during growing season	1.00 1.00 0.80
521: Neerdobe-----	85	Limitations Ponding (any duration)	1.00	Limitations Ponding (any duration)	1.00	Limitations Ponding (any duration)	1.00
522: Clear Lake-----	80	Limitations Ponding (any duration) Saturation < 24" depth during growing season Flooding >= frequent in growing season	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth Flooding >= frequent in growing season	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 24" depth during growing season Flooding >= frequent in growing season	1.00 1.00 1.00
523: Esquon-----	80	Limitations Ponding (any duration) Saturation < 24" depth during growing season Flooding >= frequent in growing season	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth Flooding >= frequent in growing season	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 24" depth during growing season Flooding >= frequent in growing season	1.00 1.00 1.00
525: Govstanford-----	85	Limitations AWC from 2 - 6"	0.21	No limitations		Limitations AWC from 2 - 6"	0.21
526: Govstanford-----	85	Limitations AWC from 2 - 6"	0.21	No limitations		Limitations AWC from 2 - 6"	0.21
528: Neerdobe-----	90	Limitations Ponding (any duration) Depth to pan <40" Saturation < 24" depth during growing season	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth Depth to pan between 20 and 40"	1.00 1.00 0.86	Limitations Ponding (any duration) Depth to pan <40" Saturation < 24" depth during growing season	1.00 1.00 1.00

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
590:							
Vistarobles-----	30	Limitations Ponding (any duration) 1.00 Saturation < 24" depth during growing season 1.00 Depth to pan <40" 1.00		Limitations Ponding (any duration) 1.00 Saturation < 2' depth 1.00 Depth to pan <= 20" 1.00		Limitations Ponding (any duration) 1.00 Saturation < 24" depth during growing season 1.00 Depth to pan <40" 1.00	
Redding-----	25	Limitations Depth to pan <40" 1.00 Saturation between 24-36" during growing season 0.30 AWC from 2 - 6" 0.26		Limitations Depth to pan between 20 and 40" 0.10		Limitations Depth to pan <40" 1.00 Saturation between 24-36" during growing season 0.30 AWC from 2 - 6" 0.26	
Argonaut taxadjunct	20	Limitations Bedrock (soft) < 40" depth 1.00 AWC from 2 - 6" 0.52		No limitations		Limitations Bedrock (soft) < 40" depth 1.00 Slopes > 2% 1.00 AWC from 2 - 6" 0.52	
Haploxererts-----	15	Limitations Ponding (any duration) 1.00 Bedrock (soft) < 40" depth 0.74 AWC from 2 - 6" 0.52		Limitations Ponding (any duration) 1.00 Saturation < 2' depth 1.00		Limitations Ponding (any duration) 1.00 Slopes > 2% 1.00 Bedrock (soft) < 40" depth 0.74	
603:							
Oroville-----	30	Limitations Ponding (any duration) 1.00 Depth to pan <40" 1.00 AWC < 2" to 40" 1.00		Limitations Ponding (any duration) 1.00 Saturation < 2' depth 1.00 Depth to pan between 20 and 40" 0.95		Limitations Ponding (any duration) 1.00 Depth to pan <40" 1.00 AWC < 2" to 40" 1.00	
Thermalito-----	25	Limitations Depth to pan <40" 1.00 AWC < 2" to 40" 1.00 Saturation < 24" depth during growing season 1.00		Limitations Saturation < 2' depth 1.00 Depth to pan between 20 and 40" 0.35		Limitations Depth to pan <40" 1.00 AWC < 2" to 40" 1.00 Saturation < 24" depth during growing season 1.00	
Fernandez-----	15	Limitations AWC from 2 - 6" 0.03		No limitations		Limitations AWC from 2 - 6" 0.03	
Thompsonflat-----	15	Limitations AWC < 2" to 40" 1.00		No limitations		Limitations Fragments (>3") > 10% 1.00 AWC < 2" to 40" 1.00 Slopes > 2% 1.00	

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
605:							
Duric Xerarents-----	75	Limitations Ponding (any duration) Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth Depth to pan <= 20"	1.00 1.00 1.00	Limitations Ponding (any duration) Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00
Oroville-----	20	Limitations Ponding (any duration) Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth Depth to pan between 20 and 40"	1.00 1.00 0.95	Limitations Ponding (any duration) Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00
606:							
Redtough-----	45	Limitations Saturation < 24" depth during growing season Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00	Limitations Saturation < 2' depth Depth to pan <= 20"	1.00 1.00	Limitations Saturation < 24" depth during growing season Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00
Fallager-----	30	Limitations Ponding (any duration) Saturation < 24" depth during growing season Depth to pan <40"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth Depth to pan <= 20"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 24" depth during growing season Depth to pan <40"	1.00 1.00 1.00
Anita-----	15	Limitations Ponding (any duration) Saturation < 24" depth during growing season Depth to pan <40"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth Depth to pan <= 20"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 24" depth during growing season Depth to pan <40"	1.00 1.00 1.00
609:							
Anita-----	50	Limitations Ponding (any duration) Saturation < 24" depth during growing season Depth to pan <40"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth Depth to pan <= 20"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 24" depth during growing season Depth to pan <40"	1.00 1.00 1.00
Tuscan taxadjunct---	40	Limitations Depth to pan <40" AWC < 2" to 40" Saturation < 24" depth during growing season	1.00 1.00 1.00	Limitations Saturation < 2' depth Depth to pan between 20 and 40"	1.00 0.54	Limitations Depth to pan <40" AWC < 2" to 40" Saturation < 24" depth during growing season	1.00 1.00 1.00

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
675: Clearhayes-----	70	Limitations AWC < 2" to 40" Fragments (>3") > 25% Bedrock (soft) < 40" depth	1.00 0.50 0.26	Limitations Saturation < 2' depth	1.00	Limitations Seepage Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
Hamslough-----	15	Limitations Ponding (any duration) Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth Depth to pan between 20 and 40"	1.00 1.00 0.71	Limitations Ponding (any duration) Depth to pan <40" AWC < 2" to 40"	1.00 1.00 1.00
677: Tuscan-----	40	Limitations Saturation < 24" depth during growing season Bedrock (soft) < 40" depth Depth to pan <40"	1.00 1.00 1.00	Limitations Saturation < 2' depth Depth to pan <= 20"	1.00 1.00	Limitations Saturation < 24" depth during growing season Bedrock (soft) < 40" depth Depth to pan <40"	1.00 1.00 1.00 1.00
Fallager-----	25	Limitations Ponding (any duration) Saturation < 24" depth during growing season Bedrock (soft) < 40" depth	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth Depth to pan <= 20"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 24" depth during growing season Bedrock (soft) < 40" depth	1.00 1.00 1.00 1.00
Anita-----	15	Limitations Ponding (any duration) Saturation < 24" depth during growing season Depth to pan <40"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 2' depth Depth to pan <= 20"	1.00 1.00 1.00	Limitations Ponding (any duration) Saturation < 24" depth during growing season Depth to pan <40"	1.00 1.00 1.00 1.00
685: Bosquejo taxadjunct	70	Limitations Ponding (any duration) AWC from 2 - 6"	1.00 0.59	Limitations Ponding (any duration)	1.00	Limitations Ponding (any duration) AWC from 2 - 6"	1.00 0.59

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
686: Redsluff taxadjunct	70	No limitations		No limitations		No limitations	

The interpretation for sprinkler irrigation evaluates the following soil properties at variable depths in the soil: texture of the surface layer; clay content more than 60 percent; flooding during the growing season; ponding; depth to wetness; available water capacity (AWC); slope; depth to hard or soft bedrock; depth to a cemented pan; fragments larger than 75 millimeters; sodium content (SAR); pH; clayey or sandy textures; permeability less than .5 cm/hr, resulting in saturated soil conditions; soil erodibility expressed as a K factor; electrical conductivity (EC); sodium content expressed as sodium adsorption ratio (SAR); and sulfur content based on taxonomic placement.

The interpretation for drip or trickle irrigation evaluates the following soil properties at variable depths in the soil: flooding, ponding, depth to wetness, depth to hard or soft bedrock, depth to a cemented pan, electrical conductivity (EC), sodium content expressed as sodium adsorption ratio (SAR), sulfur content based on taxonomic placement, and permeability less than .5 cm/hr.

The interpretation for furrow irrigation evaluates the following soil properties at variable depths in the soil: texture of the surface layer; clay content and smectitic mineralogy; flooding during the growing season; ponding; depth to wetness; available water capacity (AWC); slope; depth to soft bedrock; depth to a cemented pan; fragments larger than 75 millimeters; sodium content (SAR); pH; clayey or sandy textures; permeability less than .5 cm/hr, resulting in saturated soil conditions; permeability more than 15 cm/hr, resulting in seepage; electrical conductivity (EC); sodium content expressed as sodium adsorption ratio (SAR); and sulfur content based on taxonomic placement.

Table 20.--Engineering Index Properties

(Absence of an entry indicates that the data were not estimated. The data in this table apply to the representative texture, which is the one that occurs most commonly for a given soil horizon or layer. Only one representative texture is assigned to a horizon or layer. Interpretations that use texture criteria consider only the representative texture. Other textures occurring in the soil are described under the heading "Soil Series and Their Morphology." USDA textures with medial or ashy modifiers are based on apparent field texture. Liquid limit and plasticity index are not reported for these horizons because of ASTM procedure limitations)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
100: Anita clay-----	0-1	Clay	CH	A-7-6	0	0-30	75-100	70-100	65-100	50-95	55-66	32-40
	1-3	Clay	CH	A-7-6	0	0-30	75-100	70-100	65-100	50-95	54-65	32-40
	3-10	Clay	CH	A-7-6	0	0-40	65-100	60-100	55-100	45-95	58-69	36-44
	10-15	Clay	CH	A-7-6	0	0-40	65-100	60-100	55-100	45-95	58-69	36-44
	15-20	Cemented material	---	---	0	0-90	---	---	---	---	---	---
Galt clay-----	0-3	Clay	CH	A-7-6	0	0-10	65-100	60-100	55-100	45-95	51-72	29-44
	3-13	Clay	CH	A-7-6	0	0-10	65-100	60-100	55-100	45-95	51-72	29-44
	13-29	Clay	CH	A-7-6	0	0-25	60-100	55-100	50-100	40-95	50-70	29-44
	29-32	Clay	CH	A-7-6	0	0	65-100	60-100	55-100	40-95	47-70	27-44
	32-39	Cemented material	---	---	0	0	---	---	---	---	---	---
104: Bosquejo clay-----	0-8	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	54-71	29-36
	8-19	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	52-70	29-40
	19-24	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	52-70	29-40
	24-37	Silty clay	CH	A-7-6	0	0	100	100	90-100	70-95	40-57	21-33
	37-44	Clay loam	CL	A-6	0	0	100	100	85-100	60-80	30-46	13-25
	44-46	Loam	CL	A-6	0	0	100	100	85-100	60-80	30-46	13-25
	46-60	Loam	CL	A-6	0	0	100	100	85-95	60-75	27-37	12-19
105: Busacca clay loam-----	0-3	Clay loam	CH	A-7-6	0	0	100	100	90-100	70-80	42-60	21-28
	3-8	Clay loam	CL	A-7-6	0	0	100	100	90-100	70-80	42-60	21-28
	8-16	Clay loam	CL	A-7-6	0	0	100	100	90-100	70-95	46-56	25-30
	16-28	Silty clay loam	CL	A-7-6	0	0	100	100	90-100	70-95	46-56	25-30
	28-43	Silty clay loam	CL	A-7-6	0	0	100	100	90-100	70-95	46-56	25-30
	43-60	Clay loam	CL	A-7-6	0	0	100	100	85-100	60-80	35-47	17-25
	60-72	Clay loam	CL	A-6	0	0	100	100	85-100	60-80	35-47	17-25

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
108:												
Tuscan gravelly loam-----	0-2	Gravelly loam	CL	A-7-6	0	0	65-95	60-90	50-85	25-70	34-47	13-18
	2-4	Clay loam	CL	A-7-6	0	0-40	40-95	35-90	30-90	25-85	41-70	21-40
	4-7	Gravelly clay	CH	A-7-6	0	0-40	40-95	35-90	30-90	25-85	41-70	21-40
	7-11	Cobbly clay	CH	A-7-6	0	0-40	40-95	35-90	30-90	25-85	41-70	21-40
	11	Cemented gravelly material		---	---	0	---	---	---	---	---	---
Igo gravelly loam-----												
Igo gravelly loam-----	0-1	Gravelly loam	CL	A-6	0	0-10	60-100	55-100	40-100	35-80	30-48	12-21
	1-5	Gravelly clay loam	CL	A-7-6	0	0-10	60-100	55-100	40-100	35-80	32-50	15-26
	5-9	Gravelly clay loam	CL	A-7-6	0	0-10	60-100	55-100	40-100	35-80	32-50	15-26
	9	Cemented material		---	---	---	---	---	---	---	---	---
Anita clay-----												
Anita clay-----	0-1	Clay	CH	A-7-6	0	0-30	75-100	70-100	65-100	50-95	55-66	32-40
	1-3	Clay	CH	A-7-6	0	0-30	75-100	70-100	65-100	50-95	54-65	32-40
	3-10	Clay	CH	A-7-6	0	0-40	65-100	60-100	55-100	45-95	58-69	36-44
	10-15	Clay	CH	A-7-6	0	0-40	65-100	60-100	55-100	45-95	58-69	36-44
	15-20	Cemented material		---	---	0	0-90	---	---	---	---	---
109:												
Bosquejo clay loam-----	0-5	Clay loam	CH	A-7-6	0	0	100	100	90-100	70-80	41-60	19-28
	5-24	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	52-70	29-40
	24-40	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	52-70	29-40
	40-60	Loam	CL	A-6	0	0	100	100	85-100	60-80	30-46	13-25
110:												
Bosquejo silt loam, overwash, occasionally flooded-----	0-8	Silt loam	CL	A-7-6	0	0	100	100	90-100	70-90	31-47	11-18
	8-22	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	54-71	29-36
	22-40	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	52-70	29-40
	40-55	Clay loam	CL	A-7-6	0	0	100	100	85-100	60-80	30-47	13-25
	55-70	Clay loam	CL	A-7-6	0	0	100	100	85-100	60-80	30-47	13-25
111yu:												
Auburn loam-----	0-17	Loam	CL-ML, ML	A-4	0	0-10	95-100	75-95	70-90	50-80	20-30	NP-10
	17	Bedrock		---	---	---	---	---	---	---	---	---
Sobrante loam-----	0-5	Loam	ML	A-4	0	0	95-100	75-90	70-85	55-70	25-40	NP-10
	5-27	Clay loam	CL, CL-ML	A-4, A-6	0	0-5	95-100	75-90	70-90	55-80	25-40	5-20
	27-39	Weathered bedrock		---	---	---	---	---	---	---	---	---
	39	Bedrock		---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
114yu: Auburn gravelly loam-----	0-17	Gravelly loam	CL-ML, GC-GM, GM, ML	A-4	0	0-10	65-90	60-75	55-70	40-65	20-30	NP-10
	17	Bedrock	---	---	---	---	---	---	---	---	---	---
Sobrante gravelly loam-----	0-5	Gravelly loam	GM, SM	A-4	0	0-5	60-80	55-75	50-70	35-50	25-40	NP-10
	5-35	Gravelly clay loam	CL, CL-ML, GC, GC-GM	A-4, A-6	0	0-5	60-80	55-75	50-70	40-60	25-40	5-20
	35-40	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
	40	Bedrock	---	---	---	---	---	---	---	---	---	---
118: Xerorthents, tailings-----	0-3	Very gravelly sandy loam	GC	A-2-4	0	15-75	45-75	40-70	25-50	10-30	21-29	6-10
	3-8	Extremely gravelly sandy loam	GC	A-2-4	0	10-75	30-60	25-55	15-40	10-40	25-29	9-12
	8-21	Loamy sand	SM	A-2-4	0	0-50	10-100	5-100	0-85	0-55	0-20	NP-4
	21-26	Loamy sand	SM	A-2-4	0	0-50	10-100	5-100	0-85	0-55	0-20	NP-4
	26-35	Loamy sand	SM	A-2-4	0	0-50	10-100	5-100	0-85	0-55	0-20	NP-4
	35-48	Loamy coarse sand	SM	A-2-4	0	0-50	10-100	5-100	0-85	0-55	0-20	NP-4
	48-59	Loamy sand	SM	A-2-4	0	0-50	10-100	5-100	0-85	0-55	0-20	NP-4
	59-81	Loamy sand	SM	A-2-4	0	0-50	10-100	5-100	0-85	0-55	0-20	NP-4
118co: Clear Lake clay, frequently flooded-----	0-4	Clay	CH	A-7	0	0	100	100	95-100	90-100	55-75	30-45
	4-10	Clay	CH	A-7	0	0	100	100	95-100	90-100	55-75	30-45
	10-20	Clay	CH	A-7	0	0	100	100	95-100	90-100	55-75	30-45
	20-34	Clay	CH	A-7	0	0	100	100	95-100	90-100	55-75	30-45
	34-47	Clay	CH	A-7	0	0	100	100	95-100	90-100	55-75	30-45
	47-59	Clay	CH	A-7	0	0	100	100	95-100	90-100	55-75	30-45
	59-79	Clay	CH	A-7	0	0	100	100	95-100	90-100	55-75	30-45

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
119: Xerorthents, tailings-----	0-3	Very gravelly sandy loam	GC	A-2-4	0	15-75	45-75	40-70	25-50	10-30	21-29	6-10
	3-8	Extremely gravelly sandy loam	GC	A-2-4	0	10-75	30-60	25-55	15-40	10-40	25-29	9-12
	8-21	Loamy sand	SM	A-2-4	0	0-50	10-100	5-100	0-85	0-55	0-20	NP-4
	21-26	Loamy sand	SM	A-2-4	0	0-50	10-100	5-100	0-85	0-55	0-20	NP-4
	26-35	Loamy sand	SM	A-2-4	0	0-50	10-100	5-100	0-85	0-55	0-20	NP-4
	35-48	Loamy coarse sand	SM	A-2-4	0	0-50	10-100	5-100	0-85	0-55	0-20	NP-4
	48-59	Loamy sand	SM	A-2-4	0	0-50	10-100	5-100	0-85	0-55	0-20	NP-4
	59-81	Loamy sand	SM	A-2-4	0	0-50	10-100	5-100	0-85	0-55	0-20	NP-4
Urban land.												
119yu: Auburn gravelly loam-----	0-17	Gravelly loam	CL-ML, GC-GM, GM, ML	A-4	0	0-10	65-90	60-75	55-70	40-65	20-30	NP-10
	17	Bedrock	---	---	---	---	---	---	---	---	---	---
Sobrante gravelly loam-----	0-5	Gravelly loam	GM, SM	A-4	0	0-5	60-80	55-75	50-70	35-50	25-40	NP-10
	5-35	Gravelly clay loam	CL, CL-ML, GC, GC-GM	A-4, A-6	0	0-5	60-80	55-75	50-70	40-60	25-40	5-20
	35-40	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
	40	Bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												
120: Gridley taxadjunct clay loam---	0-4	Clay loam	CL	A-7-6	0	0	100	100	90-100	70-80	39-47	19-21
	4-9	Clay loam	CH	A-7-6	0	0	100	95-100	85-95	70-75	47-66	25-36
	9-15	Clay loam	CL	A-7-6	0	0	100	95-100	85-95	70-75	45-62	25-36
	15-21	Clay loam	CL	A-7-6	0	0	100	100	90-100	70-80	41-62	21-36
	21-60	Cemented coarse sandy loam	---	---	0	0	100	100	60-70	30-40	16-33	2-17
121: Boga loam-----	0-3	Loam	CL	A-7-6	0	0	100	100	85-100	60-90	30-45	12-19
	3-6	Loam	CL	A-6	0	0	100	100	85-100	60-90	30-45	12-19
	6-14	Clay loam	CL	A-6	0	0	100	100	85-100	60-95	30-52	13-29
	14-29	Clay loam	CL	A-7-6	0	0	100	100	85-100	60-95	30-52	13-29
	29-53	Clay loam	CL	A-6	0	0	100	100	85-100	60-95	30-52	13-29
	53-73	Loam	CL	A-6	0	0	100	100	85-100	60-95	30-52	13-29
	73-80	Dense material	CL	A-6	0	0	100	100	70-100	40-100	30-45	12-19

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
121:												
Loemstone loam-----	0-2	Loam	CL	A-7-6	0	0	100	100	85-100	60-90	30-45	12-19
	2-4	Silt loam	CL	A-6	0	0	100	100	85-100	60-90	30-45	12-19
	4-10	Silt loam	CL	A-6	0	0	100	100	85-100	60-90	30-45	12-19
	10-18	Clay loam	CL	A-6	0	0	100	100	85-100	60-95	30-52	13-29
	18-23	Silty clay loam	CL	A-7-6	0	0	100	100	85-100	60-95	30-52	13-29
	23-32	Silt loam	CL	A-6	0	0	100	100	85-100	60-95	30-52	13-29
	32-40	Silt loam	CL	A-6	0	0	100	100	85-100	60-95	30-52	13-29
	40-48	Silt loam	CL	A-6	0	0	100	100	85-100	60-95	30-52	13-29
	48-57	Dense material	ML	A-4	0	0	100	100	70-100	40-100	16-30	2-13
121su:												
Columbia fine sandy loam, frequently flooded-----	0-14	Fine sandy loam	SC-SM, SM	A-2, A-4	0	0	100	95-100	65-90	30-50	20-30	NP-10
	14-60	Stratified fine sandy loam to very fine sandy loam	SC-SM, SM	A-2, A-4	0	0	100	95-100	65-90	30-50	20-30	NP-10
125:												
Gridley taxadjunct loam-----	0-10	Loam	CL	A-6	0	0	100	100	85-95	60-75	37-45	17-19
	10-20	Clay loam	CH	A-7-6	0	0	100	100	90-100	70-95	47-66	25-36
	20-22	Clay	CH	A-7-6	0	0	100	100	90-100	70-95	41-62	21-36
	22-60	Cemented material	---	---	---	---	---	---	---	---	---	---
Calcic Haploxerolls sandy loam	0-5	Sandy loam	SM	A-2-4	0	0	100	100	60-95	30-75	20-25	NP-5
	5-17	Sandy loam	SM	A-2-4	0	0	100	100	60-95	30-75	20-25	NP-5
	17-20	Sandy loam	SM	A-2-4	0	0	100	100	60-95	30-75	20-25	NP-5
	20-33	Sandy loam	SM	A-2-4	0	0	100	100	60-95	30-75	20-25	NP-5
	33-44	Sandy loam	SM	A-2-4	0	0	100	100	50-70	15-40	20-25	NP-5
	44-72	Dense material			0	0	---	---	---	---	---	---
126:												
Liveoak sandy loam-----	0-4	Sandy loam	SC	A-4	0	0	95-100	90-100	55-70	25-40	29-36	10-13
	4-17	Sandy loam	SC	A-6	0	0	95-100	90-100	55-70	25-40	29-36	10-13
	17-37	Sandy loam	SC	A-6	0	0	90-100	85-100	50-90	25-55	23-37	7-17
	37-48	Sandy loam	SC	A-6	0	0	90-100	85-100	50-90	25-55	23-37	7-17
	48-61	Sandy loam	SC-SM	A-2-4	0	0	90-100	85-100	50-90	25-55	22-36	7-17
	61-71	Sand	SM	A-2-4	0	0	75-100	70-100	35-70	5-40	15-29	1-12
	71-75	Gravelly sand	SP-SM	A-1-b	0	0	75-100	70-100	35-70	5-40	15-29	1-12

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
127:												
Gridley taxadjunct loam-----	0-10	Loam	CL	A-6	0	0	100	100	85-95	60-75	37-45	17-19
	10-20	Clay loam	CH	A-7-6	0	0	100	100	90-100	70-95	47-66	25-36
	20-22	Clay	CH	A-7-6	0	0	100	100	90-100	70-95	41-62	21-36
	22-60	Cemented material	---	---	---	---	---	---	---	---	---	---
130:												
Eastbiggs loam-----	0-3	Loam	CL	A-6	0	0	100	100	85-95	60-75	26-38	9-18
	3-10	Loam	CL	A-6	0	0	100	100	70-95	40-75	25-38	9-18
	10-17	Loam	CL	A-6	0	0	100	100	80-95	35-75	30-44	13-25
	17-27	Clay	CH	A-7-6	0	0	100	100	90-100	70-95	49-62	29-37
	27-60	Cemented material	---	---	---	---	---	---	---	---	---	---
133:												
Eastbiggs loam-----	0-3	Loam	CL	A-6	0	0	100	100	85-95	60-75	26-38	9-18
	3-10	Loam	CL	A-6	0	0	100	100	70-95	40-75	25-38	9-18
	10-17	Loam	CL	A-6	0	0	100	100	80-95	35-75	30-44	13-25
	17-27	Clay	CH	A-7-6	0	0	100	100	90-100	70-95	49-62	29-37
	27-60	Cemented material	---	---	---	---	---	---	---	---	---	---
Galt clay loam-----	0-6	Clay loam	CL	A-7-6	0	0	100	100	90-100	70-80	43-55	21-29
	6-20	Clay loam	CH	A-7-6	0	0	100	100	90-100	70-95	43-72	21-44
	20-27	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	50-70	29-44
	27-30	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	50-70	29-44
	30	Cemented material	---	---	---	---	---	---	---	---	---	---
136:												
Duric Xerarents, cut-----	0-3	Clay loam	CL	A-7-6	0	0	100	100	60-100	30-95	28-58	11-33
	3-8	Clay loam	CL	A-7-6	0	0	100	100	80-100	35-95	34-60	17-35
	8-10	Clay loam	CL	A-7-6	0	0	100	100	80-100	35-95	34-60	17-35
	10-13	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	51-66	30-41
	13	Cemented material	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
136:												
Duric Xerarents, fill-----	0-5	Clay loam	CL	A-7-6	0	0	100	100	60-100	30-80	27-52	10-25
	5-12	Clay loam	CL	A-7-6	0	0	100	100	85-100	45-95	32-55	15-31
	12-16	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	53-66	32-41
	16-30	Cemented sandy loam	SC	A-2-4	0	0	100	100	60-70	30-40	0-27	NP-10
	30-38	Sandy clay loam	SC	A-6	0	0	100	100	80-100	35-95	32-55	15-31
	38-48	Sandy clay loam	SC	A-6	0	0	100	100	80-100	35-95	32-55	15-31
	48	Cemented material	---	---	0	0	---	---	---	---	---	---
Eastbiggs fine sandy loam, leveled-----												
	0-5	Fine sandy loam	SC	A-4	0	0	100	100	70-95	40-75	26-38	9-18
	5-12	Fine sandy loam	CL	A-6	0	0	100	100	70-95	40-75	25-38	9-18
	12-18	Sandy clay loam	SC	A-6	0	0	100	100	80-95	35-75	30-40	13-21
	18-23	Sandy clay loam	SC	A-6	0	0	100	100	80-95	35-75	30-40	13-21
	23-26	Clay loam	CL	A-7-6	0	0	100	100	90-100	70-80	36-44	19-25
	26-30	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	49-62	29-37
	30	Cemented material	---	---	0	0	---	---	---	---	---	---
138su:												
Liveoak sandy clay loam-----	0-13	Sandy clay loam	SC-SM	A-4	0	0	95-100	90-100	70-90	30-55	20-30	5-10
	13-53	Sandy clay loam	SC-SM	A-4	0	0	90-100	85-100	50-90	25-55	21-30	6-10
	53-60	Sandy loam	SC	A-2-4	0	0	75-100	65-100	35-70	5-40	10-24	0-8
139su:												
Liveoak taxadjunct loam, frequently flooded-----	0-6	Loam	CL-ML, ML	A-4	0	0	100	100	85-95	60-75	25-35	5-10
	6-54	Loam	CL-ML, ML	A-4	0	0	100	100	85-95	60-75	25-35	5-10
	54-63	Cemented material	---	---	---	---	---	---	---	---	---	---
	63-73	Very fine sandy loam	ML	A-4	0	0	100	100	85-95	50-65	25-35	NP-10
Galt taxadjunct clay loam, frequently flooded-----												
	0-21	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	30-40	10-20
	21-22	Cemented material	---	---	---	---	---	---	---	---	0-14	NP
	22-25	Loam	ML	A-4	0	0	100	100	85-95	60-75	25-35	NP-10
	25-26	Cemented material	---	---	---	---	---	---	---	---	---	---
	26	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
143su:												
Marcum clay loam-----	0-16	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	30-40	10-20
	16-28	Clay loam	CL	A-6, A-7	0	0	100	100	90-100	70-90	35-50	15-25
	28-40	Clay	CH, CL	A-7	0	0	100	100	90-100	75-95	45-65	20-35
	40-43	Clay loam	CL	A-6, A-7	0	0	100	100	90-100	70-90	35-50	15-25
	43-62	Bedrock	---	---	---	---	---	---	---	---	---	---
Gridley clay loam-----	0-19	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	30-40	10-20
	19-37	Clay	CH, CL	A-7	0	0	100	100	90-100	70-95	40-60	20-35
	37	Bedrock	---	---	---	---	---	---	---	---	---	---
149yu:												
Flanly sandy loam-----	0-9	Sandy loam	SM	A-4	0	0-15	80-100	75-100	55-75	35-50	20-30	NP-5
	9-16	Loam	CL-ML, ML, SC-SM, SM	A-4	0	0-15	80-100	75-100	65-85	40-55	25-35	5-10
	16-34	Loam	CL	A-6	0	0-15	80-100	75-100	75-95	60-70	30-40	10-15
	34-38	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
150:												
Columbia stratified sand to fine sandy loam-----	0-5	Stratified sand to fine sandy loam	SC-SM	A-2-4	0	0	100	95-100	50-95	5-75	18-37	2-13
	5-10	Stratified silt loam to sandy loam	CL-ML	A-4	0	0	100	95-100	50-100	5-90	17-33	2-12
	10-29	Loam	CL-ML	A-4	0	0	100	95-100	50-100	5-90	17-33	2-12
	29-37	Fine sandy loam	SC-SM	A-4	0	0	100	95-100	50-100	5-90	17-31	2-12
	37-46	Sand	SP-SM	A-2-4	0	0	100	95-100	50-100	5-90	17-31	2-12
	46-60	Stratified fine sandy loam to fine sand	SC-SM	A-4	0	0	55-100	50-100	25-100	0-90	17-31	2-12
150su:												
Olashes sandy loam-----	0-4	Sandy loam	SC-SM, SM	A-4	0	0	85-100	80-100	50-70	35-50	20-30	NP-10
	4-52	Sandy clay loam	SC	A-6	0	0	85-100	80-100	70-90	35-50	30-40	10-15
	52-60	Sand	SM, SW-SM	A-1	0	0	85-100	80-100	35-50	5-15	17-24	2-6
151yu:												
Flanly sandy loam-----	0-9	Sandy loam	SM	A-4	0	0-15	80-100	75-100	55-75	35-50	20-30	NP-5
	9-16	Loam	CL-ML, ML, SC-SM, SM	A-4	0	0-15	80-100	75-100	65-85	40-55	25-35	5-10
	16-34	Loam	CL	A-6	0	0-15	80-100	75-100	75-95	60-70	30-40	10-15
	34-38	Weathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
152: Gianella fine sandy loam, frequently flooded-----	0-6	Fine sandy loam	CL	A-4	0	0	100	100	70-85	40-55	17-39	1-13
	6-15	Silt loam	CL	A-4	0	0	100	100	50-100	5-90	0-28	NP-9
	15-20	Fine sandy loam	CL-ML	A-4	0	0	100	100	50-100	5-90	0-28	NP-9
	20-22	Silt loam	CL	A-4	0	0	100	100	50-100	5-90	0-28	NP-9
	22-27	Silt loam	CL	A-4	0	0	100	100	50-100	5-90	0-28	NP-9
	27-32	Fine sandy loam	CL	A-4	0	0	100	100	50-100	5-90	0-28	NP-9
	32-43	Fine sandy loam	CL-ML	A-4	0	0	100	100	50-100	5-90	0-28	NP-9
	43-64	Fine sandy loam	CL	A-4	0	0	100	100	50-100	5-90	0-28	NP-9
	64-80	Loamy sand	SM	A-2-4	0	0	100	100	50-100	5-90	0-28	NP-9
153: Gianella sandy loam, frequently flooded-----	0-6	Sandy loam	SM	A-4	0	0	100	100	60-70	30-40	17-39	1-13
	6-17	Sandy loam	SM	A-4	0	0	100	100	50-100	5-90	0-28	NP-9
	17-24	Sandy loam	SM	A-4	0	0	100	100	50-100	5-90	0-28	NP-9
	24-29	Sandy loam	SC-SM	A-4	0	0	100	100	50-100	5-90	0-28	NP-9
	29-32	Loamy sand	SM	A-2-4	0	0	100	100	50-100	5-90	0-28	NP-9
	32-43	Fine sandy loam	CL-ML	A-4	0	0	100	100	50-100	5-90	0-28	NP-9
	43-57	Fine sandy loam	CL-ML	A-4	0	0	100	100	50-100	5-90	0-28	NP-9
	57-67	Fine sandy loam	CL-ML	A-4	0	0	100	100	50-100	5-90	0-28	NP-9
	67-68	Fine sandy loam	CL-ML	A-4	0	0	100	100	50-100	5-90	0-28	NP-9
	68-71	Fine sandy loam	CL-ML	A-4	0	0	100	100	50-100	5-90	0-28	NP-9
	71-80	Fine sandy loam	CL-ML	A-4	0	0	100	100	50-100	5-90	0-28	NP-9
	80-84	Fine sandy loam	CL-ML	A-4	0	0	100	100	50-100	5-90	0-28	NP-9
154: Gianella silt loam, frequently flooded-----	0-2	Silt loam	ML	A-4	0	0	100	100	90-100	70-90	17-42	1-14
	2-8	Loamy fine sand	SM	A-2-4	0	0	100	100	50-100	5-90	0-28	NP-9
	8-15	Fine sandy loam	CL-ML	A-4	0	0	100	100	50-100	5-90	0-28	NP-9
	15-22	Very fine sandy loam	ML	A-4	0	0	100	100	50-100	5-90	0-28	NP-9
	22-31	Very fine sandy loam	ML	A-4	0	0	100	100	50-100	5-90	0-28	NP-9
	31-41	Very fine sandy loam	CL-ML	A-4	0	0	100	100	50-100	5-90	0-28	NP-9
	41-50	Silt loam	CL	A-4	0	0	100	100	50-100	5-90	0-28	NP-9
	50-54	Silt loam	CL	A-4	0	0	100	100	50-100	5-90	0-28	NP-9
	54-64	Silt loam	CL	A-4	0	0	100	100	50-100	5-90	0-28	NP-9
	64-66	Silt loam	CL-ML	A-4	0	0	100	100	50-100	5-90	0-28	NP-9
	66-69	Loam	CL-ML	A-4	0	0	100	100	50-100	5-90	0-28	NP-9
	69-83	Loamy fine sand	SM	A-2-4	0	0	100	100	50-100	5-90	0-28	NP-9

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
158: Gianella fine sandy loam, occasionally flooded-----	0-3	Fine sandy loam	SM	A-4	0	0	100	100	70-85	40-55	17-39	1-13
	3-12	Fine sandy loam	SC	A-4	0	0	100	100	70-85	40-55	17-39	1-13
	12-19	Loam	CL	A-4	0	0	100	100	50-100	5-90	0-28	NP-9
	19-28	Fine sandy loam	SC-SM	A-4	0	0	100	100	50-100	5-90	0-28	NP-9
	28-48	Loam	CL-ML	A-4	0	0	100	100	50-100	5-90	0-28	NP-9
	48-57	Sandy loam	SC-SM	A-2-4	0	0	100	100	50-100	5-90	0-28	NP-9
	57-80	Loamy sand	SM	A-2-4	0	0	100	100	50-100	5-90	0-28	NP-9
160: Gianella loam, occasionally flooded-----	0-18	Loam	ML	A-6	0	0	100	100	85-95	60-75	20-42	3-14
	18-42	Fine sandy loam	CL-ML	A-4	0	0	100	100	50-100	5-90	0-28	NP-9
	42-52	Fine sandy loam	CL	A-4	0	0	100	100	50-100	5-90	0-28	NP-9
	52-70	Loamy sand	SM	A-2-4	0	0	100	100	50-100	5-90	0-28	NP-9
161: Gianella fine sandy loam, rarely flooded-----	0-3	Fine sandy loam	SM	A-4	0	0	100	100	70-85	40-55	17-39	1-13
	3-12	Fine sandy loam	SC	A-4	0	0	100	100	70-85	40-55	17-39	1-13
	12-19	Loam	CL	A-4	0	0	100	100	50-100	5-90	0-28	NP-9
	19-28	Fine sandy loam	SC-SM	A-4	0	0	100	100	50-100	5-90	0-28	NP-9
	28-48	Loam	CL-ML	A-4	0	0	100	100	50-100	5-90	0-28	NP-9
	48-57	Sandy loam	SC-SM	A-2-4	0	0	100	100	50-100	5-90	0-28	NP-9
	57-80	Loamy sand	SM	A-2-4	0	0	100	100	50-100	5-90	0-28	NP-9
162: Gianella loam, rarely flooded--	0-18	Loam	ML	A-6	0	0	100	100	85-95	60-75	20-42	3-14
	18-42	Fine sandy loam	CL-ML	A-4	0	0	100	100	50-100	5-90	0-28	NP-9
	42-52	Fine sandy loam	CL	A-4	0	0	100	100	50-100	5-90	0-28	NP-9
	52-70	Loamy sand	SM	A-2-4	0	0	100	100	50-100	5-90	0-28	NP-9
163yu: Holillipah loamy sand-----	0-6	Loamy sand	SM	A-2	0	0	90-100	85-100	60-75	20-30	0-26	NP
	6-66	Stratified sand to silt loam	SM	A-1, A-2	0	0	80-100	75-100	35-75	10-30	0-23	NP
165yu: Holland loam-----	0-15	Loam	ML	A-4	0	0	90-100	85-100	65-85	50-60	20-35	NP-10
	15-65	Clay loam	CL, SC	A-6	0	0	90-100	85-100	70-90	40-70	25-40	10-20

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In											
165yu:												
Hoda loam-----	0-7	Loam	ML	A-4	0	0	90-100	85-100	75-85	50-65	25-35	NP-10
	7-14	Loam	CL, ML	A-4, A-6	0	0	95-100	90-100	60-85	50-60	30-40	5-15
	14-72	Clay	MH	A-7	0	0	95-100	90-100	75-90	60-80	50-60	15-25
Hotaw loam-----	0-12	Loam	ML	A-4	0	0	90-100	85-100	65-85	50-60	25-35	NP-10
	12-34	Sandy clay loam	CL, SC	A-6	0	0-5	90-100	85-100	70-90	35-60	25-40	10-20
	34	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
173yu:												
Hotaw loam-----	0-12	Loam	ML	A-4	0	0	90-100	85-100	65-85	50-60	25-35	NP-10
	12-34	Sandy clay loam	CL, SC	A-6	0	0-5	90-100	85-100	70-90	35-60	25-40	10-20
	34	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Chawanakee gravelly sandy loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-5	Gravelly sandy loam	SM	A-2-4	0	0	60-90	55-85	30-60	10-35	0-28	NP-3
	5-11	Gravelly sandy loam	SM	A-2-4	0	0	55-90	50-85	25-60	15-35	0-20	NP-3
	11-19	Gravelly sandy loam	GM	A-1-b	0	0	55-90	50-85	25-60	15-35	0-20	NP-3
	19	Bedrock	---	---	---	---	---	---	---	---	---	---
Holland loam-----	0-15	Loam	ML	A-4	0	0	90-100	85-100	65-85	50-60	20-35	NP-10
	15-65	Clay loam	CL, SC	A-6	0	0	90-100	85-100	70-90	40-70	25-40	10-20
175:												
Farwell clay loam, rarely flooded-----	0-5	Clay loam	CL	A-7-6	0	0	95-100	90-100	80-100	70-95	37-47	18-24
	5-9	Clay loam	CL	A-7-6	0	0	95-100	90-100	80-100	70-95	37-47	18-24
	9-18	Clay loam	CL	A-7-6	0	0	95-100	90-100	80-100	70-95	37-46	18-24
	18-26	Clay loam	CL	A-7-6	0	0	95-100	90-100	80-100	70-95	37-46	18-24
	26-33	Clay loam	CL	A-7-6	0	0	95-100	90-100	80-100	70-95	37-46	18-24
	33-43	Clay loam	CH	A-7-6	0	0	95-100	90-100	80-100	70-95	37-51	18-28
	43-57	Clay loam	CL	A-7-6	0	0	95-100	90-100	80-100	70-95	37-50	18-28
	57-72	Clay loam	CL	A-7-6	0	0	95-100	90-100	80-100	70-95	35-44	18-24
	72-81	Loam	CL	A-6	0	0	95-100	90-100	75-100	55-80	29-44	13-24

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
176: Farwell loam, occasionally flooded-----	0-6	Loam	CL	A-6	0	0	100	100	85-95	60-75	31-40	13-17
	6-20	Loam	CL	A-6	0	0	100	100	85-100	60-90	31-39	13-17
	20-36	Loam	CL	A-6	0	0	100	100	85-100	60-90	31-39	13-17
	36-50	Clay loam	CL	A-7-6	0	0	100	100	90-100	70-80	40-51	19-25
	50-60	Loam	CL	A-6	0	0	95-100	90-100	75-95	55-75	31-39	15-19
176yu: Jocal loam-----	0-8	Loam	ML	A-4	0	0	80-95	75-95	65-80	55-70	25-35	NP-10
	8-73	Clay loam	CL, ML	A-6, A-7	0	0	80-95	75-95	70-90	60-85	35-50	10-25
177: Farwell silt loam, occasionally flooded-----	0-6	Silt loam	CL	A-6	0	0	100	100	90-100	70-90	24-42	7-18
	6-11	Silty clay loam	CH	A-7-6	0	0	100	100	85-100	60-95	33-56	13-29
	11-22	Silt loam	CL	A-6	0	0	100	100	90-100	70-95	35-47	17-24
	22-33	Silty clay loam	CL	A-7-6	0	0	100	100	90-100	70-95	39-51	18-25
	33-39	Silty clay loam	CL	A-7-6	0	0	100	100	90-100	70-95	37-49	17-25
	39-49	Silt loam	CL	A-6	0	0	95-100	90-100	80-100	55-95	30-43	13-21
	49-62	Loam, silty clay loam	CL	A-6	0	0	95-100	90-100	75-100	55-95	29-43	13-21
178: Arbuckle gravelly loam-----	0-4	Gravelly loam	CL	A-6	0	0	60-80	55-75	40-70	35-55	32-37	13-17
	4-9	Gravelly loam	CL	A-6	0	0	60-80	55-75	40-70	35-55	31-37	13-17
	9-20	Gravelly loam	CL	A-6	0	0	60-90	55-85	40-80	35-70	34-46	16-25
	20-32	Loam, gravelly loam	CL	A-6	0	0	60-90	55-85	40-80	35-70	34-46	16-25
	32-49	Gravelly loam	CL	A-6	0	0	60-90	55-85	40-80	35-70	34-46	16-25
	49-68	Very gravelly sandy clay loam	GC	A-2-6	0	0	15-45	10-40	5-35	0-20	34-39	16-18
	68-86	Very gravelly sandy clay loam	GC	A-2-6	0	0	15-45	10-40	5-35	0-20	31-39	13-18
179: Moda taxadjunct loam-----	0-2	Loam	CL-ML	A-4	0	0	90-95	85-90	70-85	50-70	21-32	6-13
	2-6	Loam	CL	A-6	0	0	90-95	85-90	70-85	50-70	22-34	6-14
	6-13	Loam	CL	A-6	0	0	90-95	85-90	65-90	30-70	34-42	16-21
	13-22	Clay	CH	A-7-6	0	0	90-100	85-100	75-100	65-95	54-61	32-37
	22	Cemented material	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
179:												
Arbuckle gravelly loam-----	0-4	Gravelly loam	CL	A-6	0	0	60-80	55-75	40-70	35-55	32-37	13-17
	4-9	Gravelly loam	CL	A-6	0	0	60-80	55-75	40-70	35-55	31-37	13-17
	9-20	Gravelly loam	CL	A-6	0	0	60-90	55-85	40-80	35-70	34-46	16-25
	20-32	Loam, gravelly loam	CL	A-6	0	0	60-90	55-85	40-80	35-70	34-46	16-25
	32-49	Gravelly loam	CL	A-6	0	0	60-90	55-85	40-80	35-70	34-46	16-25
	49-68	Very gravelly sandy clay loam	GC	A-2-6	0	0	15-45	10-40	5-35	0-20	34-39	16-18
	68-86	Very gravelly sandy clay loam	GC	A-2-6	0	0	15-45	10-40	5-35	0-20	31-39	13-18
180:												
Dodgeland silty clay loam, occasionally flooded-----	0-4	Silty clay loam	CH	A-7-6	0	0	100	100	95-100	85-95	43-57	21-29
	4-8	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	51-62	29-33
	8-18	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	55-67	32-40
	18-33	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	55-67	32-40
	33-45	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	55-66	32-40
	45-53	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	50-65	29-40
	53-60	Silty clay loam	CL	A-7-6	0	0	100	100	90-100	70-95	31-48	12-25
	60-70	Silty clay loam	CL	A-7-6	0	0	100	100	90-100	70-95	31-48	12-25
	70-80	Silty clay loam	CL	A-7-6	0	0	100	100	90-100	70-95	31-48	12-25
181:												
Dodgeland silty clay loam, frequently flooded-----	0-4	Silty clay loam	CH	A-7-6	0	0	100	100	95-100	85-95	43-57	21-29
	4-8	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	51-62	29-33
	8-18	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	55-67	32-40
	18-33	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	55-67	32-40
	33-45	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	55-66	32-40
	45-53	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	50-65	29-40
	53-60	Silty clay loam	CL	A-7-6	0	0	100	100	90-100	70-95	31-48	12-25
	60-70	Silty clay loam	CL	A-7-6	0	0	100	100	90-100	70-95	31-48	12-25
	70-80	Silty clay loam	CL	A-7-6	0	0	100	100	90-100	70-95	31-48	12-25
188yu:												
Mariposa taxadjunct gravelly loam-----	0-4	Gravelly loam	GM, SM	A-2, A-4	0	0-5	65-85	60-75	40-60	30-45	25-40	NP-10
	4-23	Gravelly clay loam	GC, GC-GM, SC, SC-SM	A-2, A-4, A-6	0	0-5	65-85	55-75	40-60	30-45	25-40	5-15
	23	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
189:												
Esquon silt loam, overwash-----	0-4	Silt loam	CL	A-6	0	0	100	100	90-100	70-90	24-41	7-19
	4-9	Silt loam	CL	A-6	0	0	100	100	90-100	70-90	23-39	7-19
	9-15	Stratified very fine sandy loam to silt loam	CL-ML	A-4	0	0	100	100	85-100	50-90	23-38	7-19
	15-35	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	52-74	29-45
	35-48	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	51-74	29-45
	48-60	Silty clay loam	CL	A-7-6	0	0	100	100	90-100	70-95	39-74	19-45
	60	Cemented material	---	---	0	0	---	---	---	---	---	---
189yu:												
Mariposa taxadjunct gravelly loam-----	0-4	Gravelly loam	GM, SM	A-2, A-4	0	0-5	65-85	60-75	40-60	30-45	25-40	NP-10
	4-23	Gravelly clay loam	GC, GC-GM, SC, SC-SM	A-2, A-4, A-6	0	0-5	65-85	55-75	40-60	30-45	25-40	5-15
	23	Bedrock	---	---	---	---	---	---	---	---	---	---
196yu:												
Mildred cobbly loam-----	0-3	Cobbly loam	CL-ML, ML, SC-SM, SM	A-4	0	10-40	65-90	60-85	55-75	40-60	25-35	5-10
	3-9	Cobbly clay loam	CL	A-6	0	10-40	65-90	60-85	60-80	50-60	30-40	10-20
	9-23	Clay	CH, CL	A-7	0	0-20	80-100	75-100	70-90	65-75	40-60	20-35
	23	Bedrock	---	---	---	---	---	---	---	---	---	---
200:												
Parrott silt loam, occasionally flooded-----	0-2	Silt loam	ML	A-7-6	0	0	100	100	90-100	70-90	31-47	11-18
	2-8	Silt loam	CL	A-6	0	0	100	100	90-100	70-90	29-43	12-18
	8-20	Silt loam	CL	A-6	0	0	100	100	90-100	70-90	29-43	12-18
	20-37	Silt loam	CL	A-6	0	0	100	100	60-100	30-90	29-41	12-19
	37-49	Silt loam	CL	A-6	0	0	100	100	60-100	30-90	29-41	12-19
	49-63	Silt loam	CL	A-6	0	0	100	95-100	60-100	30-95	22-41	7-21
	63-89	Silt loam	CL	A-6	0	0	100	95-100	60-100	30-95	22-41	7-21
201:												
Parrott silt loam, frequently flooded-----	0-2	Silt loam	ML	A-7-6	0	0	100	100	90-100	70-90	31-47	11-18
	2-8	Silt loam	CL	A-6	0	0	100	100	90-100	70-90	29-43	12-18
	8-20	Silt loam	CL	A-6	0	0	100	100	90-100	70-90	29-43	12-18
	20-37	Silt loam	CL	A-6	0	0	100	100	60-100	30-90	29-41	12-19
	37-49	Silt loam	CL	A-6	0	0	100	100	60-100	30-90	29-41	12-19
	49-63	Silt loam	CL	A-6	0	0	100	95-100	60-100	30-95	22-41	7-21
	63-89	Silt loam	CL	A-6	0	0	100	95-100	60-100	30-95	22-41	7-21

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
203: Kusalslough silty clay loam, occasionally flooded-----	0-4	Silty clay loam	CL	A-7-6	0	0	100	100	95-100	85-95	40-53	19-25
	4-12	Silty clay loam	CL	A-7-6	0	0	100	100	95-100	85-95	40-53	19-25
	12-21	Silty clay loam	CL	A-7-6	0	0	100	100	90-100	70-95	41-54	21-29
	21-31	Silty clay loam	CH	A-7-6	0	0	100	100	90-100	70-95	42-56	21-29
	31-41	Silty clay loam	CL	A-7-6	0	0	100	100	90-100	70-95	46-54	25-29
	41-57	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	51-69	29-40
	57-69	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	51-69	29-40
	69-80	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	51-69	29-40
205: Parrott silt loam, frequently flooded-----	0-2	Silt loam	ML	A-7-6	0	0	100	100	90-100	70-90	31-47	11-18
	2-8	Silt loam	CL	A-6	0	0	100	100	90-100	70-90	29-43	12-18
	8-20	Silt loam	CL	A-6	0	0	100	100	90-100	70-90	29-43	12-18
	20-37	Silt loam	CL	A-6	0	0	100	100	60-100	30-90	29-41	12-19
	37-49	Silt loam	CL	A-6	0	0	100	100	60-100	30-90	29-41	12-19
	49-63	Silt loam	CL	A-6	0	0	100	95-100	60-100	30-95	22-41	7-21
	63-89	Silt loam	CL	A-6	0	0	100	95-100	60-100	30-95	22-41	7-21
Vermet silt loam, frequently flooded-----	0-2	Silt loam	ML	A-6	0	0	100	85-100	75-100	55-90	31-45	11-17
	2-8	Silt loam	CL	A-6	0	0	100	70-100	65-100	50-90	29-41	12-17
	8-13	Silt loam	CL	A-6	0	0	100	70-100	65-100	50-90	29-41	12-17
	13-16	Silty clay loam	CL	A-7-6	0	0	100	100	90-100	70-95	40-49	20-25
	16-26	Silty clay loam	CL	A-7-6	0	0	100	100	90-100	70-95	40-49	20-25
	26-41	Silty clay loam	CL	A-7-6	0	0	100	100	90-100	70-95	39-47	20-25
	41-62	Silty clay loam	CL	A-7-6	0	0	100	100	90-100	70-95	39-51	21-29
	62-72	Silty clay loam	CL	A-7-6	0	0	100	100	90-100	70-95	39-51	21-29
206: Islandbar sandy loam-----	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	2-5	Sandy loam	SM	A-2-4	0	0	75-95	70-90	40-75	20-50	25-37	6-12
	5-9	Sandy loam	SC-SM	A-2-4	0	0	75-95	70-90	40-75	20-50	22-33	6-12
	9-27	Sandy loam	SM	A-2-4	0	0	60-100	55-100	35-85	15-55	18-32	2-12
	27-36	Sandy loam	SM	A-2-4	0	0	60-100	55-100	35-85	15-55	17-31	2-12
	36-47	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-85	15-55	16-30	2-12
	47-58	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-85	15-55	16-30	2-12
	58-62	Loamy sand	SM	A-2-4	0	0	45-100	40-100	20-70	5-40	0-29	NP-12
	62-72	Extremely gravelly loamy sand	SW	A-1-a	0	0	15-100	10-100	5-70	0-40	0-29	NP-12

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
206: Chawanakee gravelly sandy loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-5	Gravelly sandy loam	SM	A-2-4	0	0	60-90	55-85	30-60	10-35	0-28	NP-3
	5-11	Gravelly sandy loam	SM	A-2-4	0	0	55-90	50-85	25-60	15-35	0-20	NP-3
	11-19	Gravelly sandy loam	GM	A-1-b	0	0	55-90	50-85	25-60	15-35	0-20	NP-3
	19	Bedrock	---	---	---	---	---	---	---	---	---	---
207: Islandbar sandy loam-----	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	2-5	Sandy loam	SM	A-2-4	0	0	75-95	70-90	40-75	20-50	25-37	6-12
	5-9	Sandy loam	SC-SM	A-2-4	0	0	75-95	70-90	40-75	20-50	22-33	6-12
	9-27	Sandy loam	SM	A-2-4	0	0	60-100	55-100	35-85	15-55	18-32	2-12
	27-36	Sandy loam	SM	A-2-4	0	0	60-100	55-100	35-85	15-55	17-31	2-12
	36-47	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-85	15-55	16-30	2-12
	47-58	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-85	15-55	16-30	2-12
	58-62	Loamy sand	SM	A-2-4	0	0	45-100	40-100	20-70	5-40	0-29	NP-12
	62-72	Extremely gravelly loamy sand	SW	A-1-a	0	0	15-100	10-100	5-70	0-40	0-29	NP-12
Chawanakee gravelly sandy loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-5	Gravelly sandy loam	SM	A-2-4	0	0	60-90	55-85	30-60	10-35	0-28	NP-3
	5-11	Gravelly sandy loam	SM	A-2-4	0	0	55-90	50-85	25-60	15-35	0-20	NP-3
	11-19	Gravelly sandy loam	GM	A-1-b	0	0	55-90	50-85	25-60	15-35	0-20	NP-3
	19	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
208: Islandbar sandy loam-----	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	2-5	Sandy loam	SM	A-2-4	0	0	75-95	70-90	40-75	20-50	25-37	6-12
	5-9	Sandy loam	SC-SM	A-2-4	0	0	75-95	70-90	40-75	20-50	22-33	6-12
	9-27	Sandy loam	SM	A-2-4	0	0	60-100	55-100	35-85	15-55	18-32	2-12
	27-36	Sandy loam	SM	A-2-4	0	0	60-100	55-100	35-85	15-55	17-31	2-12
	36-47	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-85	15-55	16-30	2-12
	47-58	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-85	15-55	16-30	2-12
	58-62	Loamy sand	SM	A-2-4	0	0	45-100	40-100	20-70	5-40	0-29	NP-12
	62-72	Extremely gravelly loamy sand	SW	A-1-a	0	0	15-100	10-100	5-70	0-40	0-29	NP-12
Chawanakee gravelly sandy loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-5	Gravelly sandy loam	SM	A-2-4	0	0	60-90	55-85	30-60	10-35	0-28	NP-3
	5-11	Gravelly sandy loam	SM	A-2-4	0	0	55-90	50-85	25-60	15-35	0-20	NP-3
	11-19	Gravelly sandy loam	GM	A-1-b	0	0	55-90	50-85	25-60	15-35	0-20	NP-3
	19	Bedrock	---	---	---	---	---	---	---	---	---	---
209: Islandbar sandy loam-----	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	2-5	Sandy loam	SM	A-2-4	0	0	75-95	70-90	40-75	20-50	25-37	6-12
	5-9	Sandy loam	SC-SM	A-2-4	0	0	75-95	70-90	40-75	20-50	22-33	6-12
	9-27	Sandy loam	SM	A-2-4	0	0	60-100	55-100	35-85	15-55	18-32	2-12
	27-36	Sandy loam	SM	A-2-4	0	0	60-100	55-100	35-85	15-55	17-31	2-12
	36-47	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-85	15-55	16-30	2-12
	47-58	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-85	15-55	16-30	2-12
	58-62	Loamy sand	SM	A-2-4	0	0	45-100	40-100	20-70	5-40	0-29	NP-12
	62-72	Extremely gravelly loamy sand	SW	A-1-a	0	0	15-100	10-100	5-70	0-40	0-29	NP-12

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
209: Chawanakee gravelly sandy loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-5	Gravelly sandy loam	SM	A-2-4	0	0	60-90	55-85	30-60	10-35	0-28	NP-3
	5-11	Gravelly sandy loam	SM	A-2-4	0	0	55-90	50-85	25-60	15-35	0-20	NP-3
	11-19	Gravelly sandy loam	GM	A-1-b	0	0	55-90	50-85	25-60	15-35	0-20	NP-3
	19	Bedrock	---	---	---	---	---	---	---	---	---	---
210: Featherfalls sandy loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-4	Sandy loam	SC	A-2-4	0	0	60-100	55-100	35-70	15-40	23-42	4-15
	4-7	Sandy loam	SC	A-2-4	0	0	60-100	55-100	35-70	15-40	21-37	4-16
	7-17	Sandy clay loam	SC	A-6	0	0	60-100	55-100	35-95	25-80	27-45	10-23
	17-24	Sandy clay loam	SC	A-6	0	0	60-100	55-100	35-95	25-80	27-45	10-23
	24-32	Sandy clay loam	SC	A-6	0	0	60-100	55-100	35-95	25-80	26-44	10-23
	32-42	Sandy clay loam	CL	A-7-6	0	0	60-100	55-100	35-95	25-80	26-43	10-23
	42-61	Paracobbly sandy clay loam	CL	A-7-6	0	10-50	90-100	85-100	65-95	30-60	33-46	17-27
	61-72	Paracobbly sandy clay loam	CL	A-7-6	0	10-50	90-100	85-100	65-95	30-60	33-46	17-27
	72-80	Very paragravelly sandy clay loam	GC	A-2-6	0	0	20-100	15-100	5-90	0-55	16-36	2-18

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
210: Islandbar sandy loam-----	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	2-5	Sandy loam	SM	A-2-4	0	0	75-95	70-90	40-75	20-50	25-37	6-12
	5-9	Sandy loam	SC-SM	A-2-4	0	0	75-95	70-90	40-75	20-50	22-33	6-12
	9-27	Sandy loam	SM	A-2-4	0	0	60-100	55-100	35-85	15-55	18-32	2-12
	27-36	Sandy loam	SM	A-2-4	0	0	60-100	55-100	35-85	15-55	17-31	2-12
	36-47	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-85	15-55	16-30	2-12
	47-58	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-85	15-55	16-30	2-12
	58-62	Loamy sand	SM	A-2-4	0	0	45-100	40-100	20-70	5-40	0-29	NP-12
	62-72	Extremely gravelly loamy sand	SW	A-1-a	0	0	15-100	10-100	5-70	0-40	0-29	NP-12
211: Featherfalls sandy loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-4	Sandy loam	SC	A-2-4	0	0	60-100	55-100	35-70	15-40	23-42	4-15
	4-7	Sandy loam	SC	A-2-4	0	0	60-100	55-100	35-70	15-40	21-37	4-16
	7-17	Sandy clay loam	SC	A-6	0	0	60-100	55-100	35-95	25-80	27-45	10-23
	17-24	Sandy clay loam	SC	A-6	0	0	60-100	55-100	35-95	25-80	27-45	10-23
	24-32	Sandy clay loam	SC	A-6	0	0	60-100	55-100	35-95	25-80	26-44	10-23
	32-42	Sandy clay loam	CL	A-7-6	0	0	60-100	55-100	35-95	25-80	26-43	10-23
	42-61	Paracobbly sandy clay loam	CL	A-7-6	0	10-50	90-100	85-100	65-95	30-60	33-46	17-27
	61-72	Paracobbly sandy clay loam	CL	A-7-6	0	10-50	90-100	85-100	65-95	30-60	33-46	17-27
	72-80	Very paragravelly sandy clay loam	GC	A-2-6	0	0	20-100	15-100	5-90	0-55	16-36	2-18

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
211: Islandbar sandy loam-----	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	2-5	Sandy loam	SM	A-2-4	0	0	75-95	70-90	40-75	20-50	25-37	6-12
	5-9	Sandy loam	SC-SM	A-2-4	0	0	75-95	70-90	40-75	20-50	22-33	6-12
	9-27	Sandy loam	SM	A-2-4	0	0	60-100	55-100	35-85	15-55	18-32	2-12
	27-36	Sandy loam	SM	A-2-4	0	0	60-100	55-100	35-85	15-55	17-31	2-12
	36-47	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-85	15-55	16-30	2-12
	47-58	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-85	15-55	16-30	2-12
	58-62	Loamy sand	SM	A-2-4	0	0	45-100	40-100	20-70	5-40	0-29	NP-12
	62-72	Extremely gravelly loamy sand	SW	A-1-a	0	0	15-100	10-100	5-70	0-40	0-29	NP-12
212: Featherfalls sandy loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-4	Sandy loam	SC	A-2-4	0	0	60-100	55-100	35-70	15-40	23-42	4-15
	4-7	Sandy loam	SC	A-2-4	0	0	60-100	55-100	35-70	15-40	21-37	4-16
	7-17	Sandy clay loam	SC	A-6	0	0	60-100	55-100	35-95	25-80	27-45	10-23
	17-24	Sandy clay loam	SC	A-6	0	0	60-100	55-100	35-95	25-80	27-45	10-23
	24-32	Sandy clay loam	SC	A-6	0	0	60-100	55-100	35-95	25-80	26-44	10-23
	32-42	Sandy clay loam	CL	A-7-6	0	0	60-100	55-100	35-95	25-80	26-43	10-23
	42-61	Paracobbly sandy clay loam	CL	A-7-6	0	10-50	90-100	85-100	65-95	30-60	33-46	17-27
	61-72	Paracobbly sandy clay loam	CL	A-7-6	0	10-50	90-100	85-100	65-95	30-60	33-46	17-27
	72-80	Very paragravelly sandy clay loam	GC	A-2-6	0	0	20-100	15-100	5-90	0-55	16-36	2-18

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
212: Islandbar sandy loam-----	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	2-5	Sandy loam	SM	A-2-4	0	0	75-95	70-90	40-75	20-50	25-37	6-12
	5-9	Sandy loam	SC-SM	A-2-4	0	0	75-95	70-90	40-75	20-50	22-33	6-12
	9-27	Sandy loam	SM	A-2-4	0	0	60-100	55-100	35-85	15-55	18-32	2-12
	27-36	Sandy loam	SM	A-2-4	0	0	60-100	55-100	35-85	15-55	17-31	2-12
	36-47	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-85	15-55	16-30	2-12
	47-58	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-85	15-55	16-30	2-12
	58-62	Loamy sand	SM	A-2-4	0	0	45-100	40-100	20-70	5-40	0-29	NP-12
	62-72	Extremely gravelly loamy sand	SW	A-1-a	0	0	15-100	10-100	5-70	0-40	0-29	NP-12
213: Featherfalls sandy loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-4	Sandy loam	SC	A-2-4	0	0	60-100	55-100	35-70	15-40	23-42	4-15
	4-7	Sandy loam	SC	A-2-4	0	0	60-100	55-100	35-70	15-40	21-37	4-16
	7-17	Sandy clay loam	SC	A-6	0	0	60-100	55-100	35-95	25-80	27-45	10-23
	17-24	Sandy clay loam	SC	A-6	0	0	60-100	55-100	35-95	25-80	27-45	10-23
	24-32	Sandy clay loam	SC	A-6	0	0	60-100	55-100	35-95	25-80	26-44	10-23
	32-42	Sandy clay loam	CL	A-7-6	0	0	60-100	55-100	35-95	25-80	26-43	10-23
	42-61	Paracobbly sandy clay loam	CL	A-7-6	0	10-50	90-100	85-100	65-95	30-60	33-46	17-27
	61-72	Paracobbly sandy clay loam	CL	A-7-6	0	10-50	90-100	85-100	65-95	30-60	33-46	17-27
	72-80	Very paragravelly sandy clay loam	GC	A-2-6	0	0	20-100	15-100	5-90	0-55	16-36	2-18

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
213: Islandbar sandy loam-----	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	2-5	Sandy loam	SM	A-2-4	0	0	75-95	70-90	40-75	20-50	25-37	6-12
	5-9	Sandy loam	SC-SM	A-2-4	0	0	75-95	70-90	40-75	20-50	22-33	6-12
	9-27	Sandy loam	SM	A-2-4	0	0	60-100	55-100	35-85	15-55	18-32	2-12
	27-36	Sandy loam	SM	A-2-4	0	0	60-100	55-100	35-85	15-55	17-31	2-12
	36-47	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-85	15-55	16-30	2-12
	47-58	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-85	15-55	16-30	2-12
	58-62	Loamy sand	SM	A-2-4	0	0	45-100	40-100	20-70	5-40	0-29	NP-12
	62-72	Extremely gravelly loamy sand	SW	A-1-a	0	0	15-100	10-100	5-70	0-40	0-29	NP-12
214: Crystalhill gravelly coarse sandy loam-----	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	2-7	Gravelly coarse sandy loam	SM	A-2-4	0	0	65-100	60-90	35-70	15-40	18-26	2-4
	7-14	Gravelly coarse sandy loam	SC-SM	A-2-4	0	0	65-95	60-90	35-65	15-35	17-26	2-7
	14-22	Gravelly coarse sandy loam	SC-SM	A-2-4	0	0	65-95	60-90	35-65	15-35	16-25	2-7
	22-33	Gravelly sandy loam	SC-SM	A-2-4	0	0	65-95	60-90	35-65	15-35	16-24	2-7
	33-44	Gravelly sandy loam	SC-SM	A-2-4	0	0	65-95	60-90	35-65	15-35	16-24	2-7
	44-66	Sandy loam	SM	A-2-4	0	0	35-95	30-90	15-65	10-35	0-26	NP-9
	66	Bedrock	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
		In			Pct	Pct					Pct	
214: Oregongulch gravelly sandy loam	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-4	Gravelly sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-70	15-40	18-32	2-10
	4-7	Gravelly sandy loam	SC	A-2-4	0	0	60-90	55-85	30-60	10-35	0-28	NP-10
	7-13	Gravelly sandy loam	SC	A-2-4	0	0	60-90	55-85	30-60	10-35	0-27	NP-10
	13-18	Gravelly sandy loam	SC	A-2-4	0	0	60-90	55-85	30-60	10-35	0-27	NP-10
	18-24	Very gravelly sandy loam	GC	A-2-4	0	0	40-75	35-70	20-50	5-30	0-25	NP-8
	24-60	Bedrock	---	---	0	0	0	0	0	0	---	---
Craigsaddle coarse sandy loam--	0-5	Coarse sandy loam	SM	A-2-4	0	0	90-100	85-100	50-70	25-40	19-27	2-6
	5-11	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-70	15-40	20-26	4-7
	11-17	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-70	15-40	20-26	4-7
	17-21	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-70	15-40	19-25	4-7
	21-31	Sandy loam	SC	A-2-4	0	0	60-100	55-100	35-90	15-55	25-37	9-19
	31-51	Sandy loam	SC	A-2-4	0	0	60-100	55-100	35-90	15-55	25-37	9-19
	51-58	Gravelly sandy loam	SC	A-2-4	0	0	65-100	60-100	35-90	15-55	23-35	8-17
	58-80	Bedrock	---	---	0	0	---	---	---	---	---	---
Rock outcrop, trondhemite.												
215: Crystalhill gravelly coarse sandy loam-----	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	2-7	Gravelly coarse sandy loam	SM	A-2-4	0	0	65-100	60-90	35-70	15-40	18-26	2-4
	7-14	Gravelly coarse sandy loam	SC-SM	A-2-4	0	0	65-95	60-90	35-65	15-35	17-26	2-7
	14-22	Gravelly coarse sandy loam	SC-SM	A-2-4	0	0	65-95	60-90	35-65	15-35	16-25	2-7
	22-33	Gravelly sandy loam	SC-SM	A-2-4	0	0	65-95	60-90	35-65	15-35	16-24	2-7
	33-44	Gravelly sandy loam	SC-SM	A-2-4	0	0	65-95	60-90	35-65	15-35	16-24	2-7
	44-66	Sandy loam	SM	A-2-4	0	0	35-95	30-90	15-65	10-35	0-26	NP-9
	66	Bedrock	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
215: Oregongulch gravelly sandy loam	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-4	Gravelly sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-70	15-40	18-32	2-10
	4-7	Gravelly sandy loam	SC	A-2-4	0	0	60-90	55-85	30-60	10-35	0-28	NP-10
	7-13	Gravelly sandy loam	SC	A-2-4	0	0	60-90	55-85	30-60	10-35	0-27	NP-10
	13-18	Gravelly sandy loam	SC	A-2-4	0	0	60-90	55-85	30-60	10-35	0-27	NP-10
	18-24	Very gravelly sandy loam	GC	A-2-4	0	0	40-75	35-70	20-50	5-30	0-25	NP-8
	24-60	Bedrock	---	---	0	0	0	0	0	0	---	---
Craigsaddle coarse sandy loam--	0-5	Coarse sandy loam	SM	A-2-4	0	0	90-100	85-100	50-70	25-40	19-27	2-6
	5-11	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-70	15-40	20-26	4-7
	11-17	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-70	15-40	20-26	4-7
	17-21	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-70	15-40	19-25	4-7
	21-31	Sandy loam	SC	A-2-4	0	0	60-100	55-100	35-90	15-55	25-37	9-19
	31-51	Sandy loam	SC	A-2-4	0	0	60-100	55-100	35-90	15-55	25-37	9-19
	51-58	Gravelly sandy loam	SC	A-2-4	0	0	65-100	60-100	35-90	15-55	23-35	8-17
	58-80	Bedrock	---	---	0	0	---	---	---	---	---	---
Rock outcrop, trondhjemite.												

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
216: Crystalhill gravelly coarse sandy loam-----	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	2-7	Gravelly coarse sandy loam	SM	A-2-4	0	0	65-100	60-90	35-70	15-40	18-26	2-4
	7-14	Gravelly coarse sandy loam	SC-SM	A-2-4	0	0	65-95	60-90	35-65	15-35	17-26	2-7
	14-22	Gravelly coarse sandy loam	SC-SM	A-2-4	0	0	65-95	60-90	35-65	15-35	16-25	2-7
	22-33	Gravelly sandy loam	SC-SM	A-2-4	0	0	65-95	60-90	35-65	15-35	16-24	2-7
	33-44	Gravelly sandy loam	SC-SM	A-2-4	0	0	65-95	60-90	35-65	15-35	16-24	2-7
	44-66	Sandy loam	SM	A-2-4	0	0	35-95	30-90	15-65	10-35	0-26	NP-9
	66	Bedrock	---	---	0	0	---	---	---	---	---	---
Oregongulch gravelly sandy loam	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-4	Gravelly sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-70	15-40	18-32	2-10
	4-7	Gravelly sandy loam	SC	A-2-4	0	0	60-90	55-85	30-60	10-35	0-28	NP-10
	7-13	Gravelly sandy loam	SC	A-2-4	0	0	60-90	55-85	30-60	10-35	0-27	NP-10
	13-18	Gravelly sandy loam	SC	A-2-4	0	0	60-90	55-85	30-60	10-35	0-27	NP-10
	18-24	Very gravelly sandy loam	GC	A-2-4	0	0	40-75	35-70	20-50	5-30	0-25	NP-8
	24-60	Bedrock	---	---	0	0	0	0	0	0	---	---
Craigsaddle coarse sandy loam--	0-5	Coarse sandy loam	SM	A-2-4	0	0	90-100	85-100	50-70	25-40	19-27	2-6
	5-11	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-70	15-40	20-26	4-7
	11-17	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-70	15-40	20-26	4-7
	17-21	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-70	15-40	19-25	4-7
	21-31	Sandy loam	SC	A-2-4	0	0	60-100	55-100	35-90	15-55	25-37	9-19
	31-51	Sandy loam	SC	A-2-4	0	0	60-100	55-100	35-90	15-55	25-37	9-19
	51-58	Gravelly sandy loam	SC	A-2-4	0	0	65-100	60-100	35-90	15-55	23-35	8-17
	58-80	Bedrock	---	---	0	0	---	---	---	---	---	---
Rock outcrop, trondhemite.												

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
217: Crystalhill gravelly coarse sandy loam-----	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	2-7	Gravelly coarse sandy loam	SM	A-2-4	0	0	65-100	60-90	35-70	15-40	18-26	2-4
	7-14	Gravelly coarse sandy loam	SC-SM	A-2-4	0	0	65-95	60-90	35-65	15-35	17-26	2-7
	14-22	Gravelly coarse sandy loam	SC-SM	A-2-4	0	0	65-95	60-90	35-65	15-35	16-25	2-7
	22-33	Gravelly sandy loam	SC-SM	A-2-4	0	0	65-95	60-90	35-65	15-35	16-24	2-7
	33-44	Gravelly sandy loam	SC-SM	A-2-4	0	0	65-95	60-90	35-65	15-35	16-24	2-7
	44-66	Sandy loam	SM	A-2-4	0	0	35-95	30-90	15-65	10-35	0-26	NP-9
	66	Bedrock	---	---	0	0	---	---	---	---	---	---
Oregongulch gravelly sandy loam	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-4	Gravelly sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-70	15-40	18-32	2-10
	4-7	Gravelly sandy loam	SC	A-2-4	0	0	60-90	55-85	30-60	10-35	0-28	NP-10
	7-13	Gravelly sandy loam	SC	A-2-4	0	0	60-90	55-85	30-60	10-35	0-27	NP-10
	13-18	Gravelly sandy loam	SC	A-2-4	0	0	60-90	55-85	30-60	10-35	0-27	NP-10
	18-24	Very gravelly sandy loam	GC	A-2-4	0	0	40-75	35-70	20-50	5-30	0-25	NP-8
	24-60	Bedrock	---	---	0	0	0	0	0	0	---	---
Craigsaddle coarse sandy loam--	0-5	Coarse sandy loam	SM	A-2-4	0	0	90-100	85-100	50-70	25-40	19-27	2-6
	5-11	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-70	15-40	20-26	4-7
	11-17	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-70	15-40	20-26	4-7
	17-21	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-70	15-40	19-25	4-7
	21-31	Sandy loam	SC	A-2-4	0	0	60-100	55-100	35-90	15-55	25-37	9-19
	31-51	Sandy loam	SC	A-2-4	0	0	60-100	55-100	35-90	15-55	25-37	9-19
	51-58	Gravelly sandy loam	SC	A-2-4	0	0	65-100	60-100	35-90	15-55	23-35	8-17
	58-80	Bedrock	---	---	0	0	---	---	---	---	---	---
Rock outcrop, trondhjemite.												

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
218: Rock outcrop, quartz diorite.												
Lithic Xerorthents gravelly sandy loam-----	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	2-4	Gravelly sandy loam	SM	A-1-b	0	0	55-95	50-90	30-65	15-35	19-31	3-4
	4-8	Sandy loam	SC-SM	A-2-4	0	0	55-90	50-85	30-60	15-35	17-25	3-6
	8	Bedrock	---	---	0	0	---	---	---	---	---	---
Chawanakee gravelly sandy loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-5	Gravelly sandy loam	SM	A-2-4	0	0	60-90	55-85	30-60	10-35	0-28	NP-3
	5-11	Gravelly sandy loam	SM	A-2-4	0	0	55-90	50-85	25-60	15-35	0-20	NP-3
	11-19	Gravelly sandy loam	GM	A-1-b	0	0	55-90	50-85	25-60	15-35	0-20	NP-3
	19	Bedrock	---	---	---	---	---	---	---	---	---	---
219: Rock outcrop, quartz diorite.												
Lithic Xerorthents gravelly sandy loam-----	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	2-4	Gravelly sandy loam	SM	A-1-b	0	0	55-95	50-90	30-65	15-35	19-31	3-4
	4-8	Sandy loam	SC-SM	A-2-4	0	0	55-90	50-85	30-60	15-35	17-25	3-6
	8	Bedrock	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
219: Chawanakee gravelly sandy loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-5	Gravelly sandy loam	SM	A-2-4	0	0	60-90	55-85	30-60	10-35	0-28	NP-3
	5-11	Gravelly sandy loam	SM	A-2-4	0	0	55-90	50-85	25-60	15-35	0-20	NP-3
	11-19	Gravelly sandy loam	GM	A-1-b	0	0	55-90	50-85	25-60	15-35	0-20	NP-3
	19	Bedrock	---	---	---	---	---	---	---	---	---	---
220: Esquon clay, frequently flooded-----	0-10	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	53-77	29-45
	10-22	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	52-74	29-45
	22-40	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	51-74	29-45
	40-50	Clay loam	CL	A-7-6	0	0	100	100	90-100	70-95	37-61	18-34
	50	Cemented material	---	---	0	0	---	---	---	---	---	---
Clear Lake silty clay loam, overwash-----	0-0.5	Silty clay loam	CH	A-7-6	0	0	100	100	95-100	85-95	48-55	25-29
	0.5-7	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	53-77	29-45
	7-19	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	52-74	29-45
	19-29	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	51-74	29-45
	29-40	Clay	CH	A-7-6	0	0	100	100	90-100	70-95	47-74	25-45
	40-55	Clay	CH	A-7-6	0	0	100	100	90-100	70-95	47-74	25-45
	55-80	Clay	CH	A-7-6	0	0	100	100	90-100	70-95	47-74	25-45
221yu: Sites loam-----	0-6	Loam	ML	A-4	0	0-5	90-100	80-95	60-75	50-65	20-40	NP-10
	6-16	Clay loam	CL	A-6	0	0-5	90-100	85-95	65-75	55-70	30-40	10-20
	16-51	Clay	MH, ML	A-7	0	0	90-100	85-95	75-90	70-85	45-60	15-25
	51-61	Clay loam	CL	A-6	0	0-5	90-100	85-95	65-75	55-70	30-40	10-20
	61	Bedrock	---	---	---	---	---	---	---	---	---	---
222yu: Sites loam-----	0-6	Loam	ML	A-4	0	0-5	90-100	80-95	60-75	50-65	20-40	NP-10
	6-16	Clay loam	CL	A-6	0	0-5	90-100	85-95	65-75	55-70	30-40	10-20
	16-51	Clay	MH, ML	A-7	0	0	90-100	85-95	75-90	70-85	45-60	15-25
	51-61	Clay loam	CL	A-6	0	0-5	90-100	85-95	65-75	55-70	30-40	10-20
	61	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
225yu: Sites gravelly loam, bedrock substratum-----	0-5	Gravelly loam	GM, SM	A-4	0	0-5	60-80	55-75	50-70	35-50	20-40	NP-10
	5-53	Gravelly clay loam, gravelly clay	GM, MH, ML	A-7	0	0-5	60-80	55-75	50-70	45-60	45-60	15-25
	53	Bedrock	---	---	---	---	---	---	---	---	---	---
226yu: Sites gravelly loam, bedrock substratum-----	0-5	Gravelly loam	GM, SM	A-4	0	0-5	60-80	55-75	50-70	35-50	20-40	NP-10
	5-53	Gravelly clay loam, gravelly clay	GM, MH, ML	A-7	0	0-5	60-80	55-75	50-70	45-60	45-60	15-25
	53	Bedrock	---	---	---	---	---	---	---	---	---	---
227yu: Sites gravelly loam, bedrock substratum-----	0-5	Gravelly loam	GM, SM	A-4	0	0-5	60-80	55-75	50-70	35-50	20-40	NP-10
	5-53	Gravelly clay loam, gravelly clay	GM, MH, ML	A-7	0	0-5	60-80	55-75	50-70	45-60	45-60	15-25
	53	Bedrock	---	---	---	---	---	---	---	---	---	---
242yu: Surnuf loam-----	0-12	Loam	ML	A-4	0	0-5	90-100	85-100	75-85	50-65	25-35	NP-10
	12-77	Clay loam, clay	MH, ML	A-7	0	0-5	90-100	85-100	80-90	70-85	45-60	15-25
243yu: Surnuf loam-----	0-12	Loam	ML	A-4	0	0-5	90-100	85-100	75-85	50-65	25-35	NP-10
	12-77	Clay loam, clay	MH, ML	A-7	0	0-5	90-100	85-100	80-90	70-85	45-60	15-25
244yu: Surnuf loam-----	0-12	Loam	ML	A-4	0	0-5	90-100	85-100	75-85	50-65	25-35	NP-10
	12-77	Clay loam, clay	MH, ML	A-7	0	0-5	90-100	85-100	80-90	70-85	45-60	15-25
245: Surnuf loam-----	0-12	Loam	ML	A-4	0	0-5	90-100	85-100	75-85	50-65	25-35	NP-10
	12-77	Clay loam, clay	MH, ML	A-7	0	0-5	90-100	85-100	80-90	70-85	45-60	15-25

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
		In			Pct	Pct					Pct	
248yu:												
Trainer loam-----	0-9	Loam	CL-ML, ML	A-4	0	0	100	95-100	85-95	50-65	25-35	5-10
	9-36	Loam	CL-ML, ML, SC-SM, SM	A-4	0	0	100	95-100	75-85	40-60	25-35	5-10
	36-66	Sandy loam, coarse sandy loam	SM	A-2, A-4	0	0	100	95-100	60-70	30-40	20-30	NP-5
250:												
Llanoseco, occasionally flooded	0-8	Silty clay loam	CL	A-7-6	0	0	100	100	95-100	85-95	39-51	19-25
	8-18	Silty clay loam	CH	A-7-6	0	0	100	100	95-100	85-95	45-57	25-29
	18-28	Silty clay	CH	A-7-6	0	0	100	100	95-100	90-95	51-66	29-36
	28-41	Silty clay	CH	A-7-6	0	0	100	100	95-100	90-95	50-62	29-36
	41-57	Silty clay	CH	A-7-6	0	0	100	100	95-100	90-95	50-70	29-44
	57-71	Silty clay	CH	A-7-6	0	0	100	100	95-100	90-95	50-69	29-44
	71-83	Silty clay	CH	A-7-6	0	0	100	100	95-100	90-95	50-69	29-44
	83-89	Silty clay	CH	A-7-6	0	0	100	100	95-100	90-95	50-61	29-37
	89-93	Cemented material	---	---	---	---	---	---	---	---	---	---
252:												
Whitecabin silty clay, occasionally flooded-----	0-5	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	51-68	29-40
	5-13	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	56-68	33-41
	13-26	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	56-68	33-41
	26-35	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	56-69	33-41
	35-45	Silty clay	CH	A-7-6	0	0	100	100	90-100	70-95	47-68	25-41
	45-53	Silty clay	CH	A-7-6	0	0	100	100	90-100	70-95	47-68	25-41
	53-72	Cemented material	---	---	0	0	---	---	---	---	---	---
Ordferry silty clay, occasionally flooded-----	0-3	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	51-64	29-36
	3-6	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	53-74	29-44
	6-13	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	51-72	29-44
	13-25	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	51-74	29-45
	25-29	Silty clay	CH	A-7-6	0	0	100	100	90-100	70-95	47-64	25-37
	29-40	Cemented material	---	---	0	0	---	---	---	---	---	---
252yu:												
Woodleaf gravelly loam-----	0-9	Gravelly loam	CL, CL-ML	A-4, A-6	0	10-30	60-90	55-85	50-75	50-60	25-35	5-15
	9-28	Very gravelly clay loam, very gravelly clay	GC	A-7	0	15-45	40-60	35-55	35-50	35-45	40-60	20-35
	28	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
253yu:												
Woodleaf gravelly loam-----	0-9	Gravelly loam	CL, CL-ML	A-4, A-6	0	10-30	60-90	55-85	50-75	50-60	25-35	5-15
	9-28	Very gravelly clay loam, very gravelly clay	GC	A-7	0	15-45	40-60	35-55	35-50	35-45	40-60	20-35
	28	Bedrock	---	---	---	---	---	---	---	---	---	---
255:												
Whitecabin silty clay loam, occasionally flooded-----	0-8	Silty clay loam	CL	A-7-6	0	0	100	100	95-100	85-95	39-54	19-29
	8-20	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	58-70	33-40
	20-44	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	56-69	33-41
	44-60	Cemented material	---	---	0	0	---	---	---	---	---	---
Ordferry silty clay, occasionally flooded-----	0-3	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	51-64	29-36
	3-6	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	53-74	29-44
	6-13	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	51-72	29-44
	13-25	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	51-74	29-45
	25-29	Silty clay	CH	A-7-6	0	0	100	100	90-100	70-95	47-64	25-37
	29-40	Cemented material	---	---	0	0	---	---	---	---	---	---
256:												
Whitecabin silt loam, occasionally flooded-----	0-6	Silt loam	CL	A-6	0	0	100	100	90-100	70-90	29-41	12-19
	6-13	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	58-70	33-40
	13-27	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	56-69	33-41
	27-42	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	56-68	33-41
	42-54	Clay loam	CL	A-7-6	0	0	100	100	90-100	70-80	44-51	25-29
	54-62	Cemented material	---	---	0	0	---	---	---	---	---	---
257:												
Llanoseco, frequently flooded--	0-8	Silty clay loam	CL	A-7-6	0	0	100	100	95-100	85-95	39-51	19-25
	8-18	Silty clay loam	CH	A-7-6	0	0	100	100	95-100	85-95	45-57	25-29
	18-28	Silty clay	CH	A-7-6	0	0	100	100	95-100	90-95	51-66	29-36
	28-41	Silty clay	CH	A-7-6	0	0	100	100	95-100	90-95	50-62	29-36
	41-57	Silty clay	CH	A-7-6	0	0	100	100	95-100	90-95	50-70	29-44
	57-71	Silty clay	CH	A-7-6	0	0	100	100	95-100	90-95	50-69	29-44
	71-83	Silty clay	CH	A-7-6	0	0	100	100	95-100	90-95	50-69	29-44
	83-89	Silty clay	CH	A-7-6	0	0	100	100	95-100	90-95	50-61	29-37
	89-93	Cemented material	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
258:												
Codora, occasionally flooded---	0-6	Silty clay loam	CL	A-7-6	0	0	100	100	90-100	70-95	39-51	19-25
	6-11	Silty clay loam	CL	A-7-6	0	0	100	100	90-100	70-95	39-51	19-25
	11-22	Silty clay loam	CH	A-7-6	0	0	100	100	90-100	70-95	45-56	25-28
	22-38	Silty clay loam	CL	A-7-6	0	0	100	100	90-100	70-95	44-51	25-29
	38-60	Silty clay loam	CL	A-7-6	0	0	100	100	90-100	75-95	38-58	19-33
260:												
Ord ferry silty clay, occasionally flooded-----	0-3	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	51-64	29-36
	3-6	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	53-74	29-44
	6-13	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	51-72	29-44
	13-25	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	51-74	29-45
	25-29	Silty clay	CH	A-7-6	0	0	100	100	90-100	70-95	47-64	25-37
	29-40	Cemented material	---	---	0	0	---	---	---	---	---	---
280:												
Columbia taxadjunct stratified very fine sandy loam-----	0-8	Stratified fine sandy loam	SC-SM	A-4	0	0	100	95-100	70-95	40-60	17-28	2-10
	8-10	Fine sandy loam	SC-SM	A-4	0	0	100	95-100	70-95	40-60	17-28	2-10
	10-19	Stratified fine sandy loam	SC-SM	A-4	0	0	100	95-100	70-95	40-60	17-28	2-10
	19-30	Stratified fine sandy loam	SC-SM	A-4	0	0	100	95-100	70-95	40-60	17-28	2-10
	30-40	Stratified silt loam	CL-ML	A-4	0	0	100	95-100	85-100	70-90	17-31	2-10
	40-60	Stratified silt loam	CL-ML	A-4	0	0	100	95-100	85-100	70-90	17-28	2-10
290:												
Perkins gravelly loam-----	0-8	Gravelly loam	CL-ML, SC-SM, GC	A-4	0	0	65-80	60-75	50-70	35-55	25-40	8-18
	8-24	Gravelly loam	CL, SC, GC	A-4, A-6	0	0	65-80	60-75	55-75	20-60	32-47	13-25
	24-38	Very gravelly sandy clay loam	GC-GM, GC	A-1, A-2-6	0	0	30-55	25-50	20-50	10-40	29-47	11-25
	38-48	Very gravelly sandy loam	GC-GM, GP-GC	A-1, A-2-4	0	0	30-40	25-35	15-25	10-15	22-32	7-13
	48-73	Very gravelly sandy loam	SW-SM, GP-GC	A-1-a	0	0	30-80	25-75	15-50	5-30	20-32	6-13

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
300: Redsluff gravelly loam-----	0-2	Gravelly loam	GM	A-6	0	0	60-100	55-100	40-95	35-75	29-45	10-16
	2-5	Gravelly loam	GC	A-6	0	0-45	60-95	55-90	40-90	35-70	31-51	13-25
	5-12	Gravelly clay loam	CL	A-7-6	0	0-45	60-95	55-90	40-90	35-70	31-51	13-25
	12-21	Gravelly loam	GC	A-6	0	0-45	60-95	55-90	40-90	35-70	31-51	13-25
	21-29	Gravelly loam	GC	A-6	0	0-45	60-95	55-90	40-90	35-70	31-51	13-25
	29-37	Gravelly loam	GC	A-6	0	0-60	25-65	20-60	10-55	5-45	21-31	6-13
	37-42	Extremely gravelly sandy loam	GC	A-2-4	0	0-60	25-65	20-60	10-55	5-45	21-31	6-13
	42-80	Extremely gravelly loamy sand	GP-GM	A-1-a	0-10	25-60	40-90	35-85	20-65	5-35	0-20	NP-4
301: Wafap gravelly loam-----	0-1	Gravelly loam	CL	A-6	0	0-15	45-90	40-85	30-80	15-65	31-46	10-18
	1-5	Cobbly clay loam	CL	A-7-6	0	0-25	60-90	55-85	40-80	25-70	34-51	15-25
	5-13	Very cobbly clay loam	CL	A-7-6	0-10	10-75	25-90	20-85	15-85	5-80	42-62	21-33
	13-32	Extremely cobbly clay loam	CH	A-7-6	0-10	10-75	25-90	20-85	15-85	5-80	40-58	21-33
	32-39	Extremely cobbly clay loam	GC	A-7-6	0-10	10-75	25-90	20-85	15-85	5-80	40-58	21-33
	39-46	Extremely gravelly sandy clay loam	GC	A-2-6	0-10	45-75	25-55	20-50	15-50	5-30	30-51	13-29
	46	Cemented cobbly gravelly material	---	---	---	---	---	---	---	---	---	---
Hamslough clay-----	0-3	Clay	CH	A-7-6	0	0-25	80-95	75-90	65-90	55-85	55-80	29-44
	3-14	Cobbly clay	CH	A-7-6	0	0-25	80-95	75-90	65-90	55-85	55-80	29-44
	14-19	Extremely gravelly clay	GC	A-2-7	0	0-40	40-90	35-85	30-85	25-80	52-74	29-44
	19-27	Extremely gravelly sandy clay	GC	A-2-7	0	25-40	40-75	35-70	30-70	15-65	41-74	21-44
	27	Cemented cobbly gravelly material	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
302:												
Redtough loam-----	0-1	Loam	ML	A-7-5	0	0-10	55-100	50-100	40-95	30-75	32-47	9-14
	1-7	Gravelly loam	CL	A-6	0	0-55	50-100	45-90	40-85	30-70	29-39	12-19
	7-13	Very cobbly loam	CL	A-6	0	0-55	50-100	45-90	40-85	30-70	29-39	12-19
	13	Cemented very gravelly material	---	---	---	---	---	---	---	---	---	---
Redswale cobbly loam-----	0-1	Cobbly loam	ML	A-6	0	0-55	75-95	70-90	60-85	40-70	29-42	9-15
	1-7	Very cobbly loam	CL	A-6	0	0-50	50-95	45-90	40-85	30-70	29-41	12-19
	7	Cemented very gravelly material	---	---	---	---	---	---	---	---	---	---
303:												
Munjar gravelly loam-----	0-2	Gravelly loam	CL	A-6	0	0	60-80	55-75	40-70	35-55	33-45	13-16
	2-5	Gravelly loam	GC	A-6	0	0	60-80	55-75	40-70	35-55	33-36	15-16
	5-9	Gravelly loam	CL	A-6	0-10	5-55	50-80	45-75	40-75	30-60	35-47	16-25
	9-16	Gravelly loam	SC	A-6	0-10	10-55	50-80	45-75	40-75	30-60	35-47	16-25
	16-22	Extremely gravelly clay loam	GC	A-6	0-10	10-55	50-80	45-75	40-75	30-60	35-47	16-25
	22-31	Extremely cobbly sandy clay	GC	A-2-7	0-10	30-50	55-60	50-55	40-55	20-45	45-52	25-29
	31-46	Cemented extremely gravelly material	---	---	0-10	15-50	---	---	---	---	---	---
Tuscan taxadjunct gravelly clay loam-----	0-2	Gravelly clay loam	CL	A-7-6	0	0-10	75-90	70-85	60-80	35-70	33-51	12-21
	2-5	Gravelly clay	CH	A-7-6	0	0-30	55-90	50-85	40-85	30-80	36-59	17-33
	5-13	Gravelly clay	CH	A-7-6	0	0-30	55-90	50-85	45-85	30-80	46-58	25-34
	13-23	Gravelly clay loam	CH	A-7-6	0	0-30	55-90	50-85	45-85	30-80	46-58	25-34
	23-29	Very gravelly clay loam	GC	A-7-6	0	0-55	40-80	35-75	30-70	25-70	45-57	25-34
	29	Cemented extremely cobbly material	---	---	0	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
303:												
Galt clay-----	0-3	Clay	CH	A-7-6	0	0-10	65-100	60-100	55-100	45-95	51-72	29-44
	3-13	Clay	CH	A-7-6	0	0-10	65-100	60-100	55-100	45-95	51-72	29-44
	13-29	Clay	CH	A-7-6	0	0-25	60-100	55-100	50-100	40-95	50-70	29-44
	29-32	Clay	CH	A-7-6	0	0	65-100	60-100	55-100	40-95	47-70	27-44
	32-39	Cemented material	---	---	0	0	---	---	---	---	---	---
304:												
Redtough loam-----	0-1	Loam	ML	A-7-5	0	0-10	55-100	50-100	40-95	30-75	32-47	9-14
	1-7	Gravelly loam	CL	A-6	0	0-55	50-100	45-90	40-85	30-70	29-39	12-19
	7-13	Very cobbly loam	CL	A-6	0	0-55	50-100	45-90	40-85	30-70	29-39	12-19
	13	Cemented very gravelly material	---	---	---	---	---	---	---	---	---	---
305:												
Redtough gravelly loam-----	0-2	Gravelly loam	SM	A-7-5	0	0-10	55-100	50-100	40-95	30-75	32-47	9-14
	2-5	Gravelly loam	SC	A-6	0	0-55	50-100	45-90	40-85	30-70	29-39	12-19
	5-8	Gravelly loam	SC	A-6	0	0-55	50-100	45-90	40-85	30-70	29-39	12-19
	8-15	Clay loam	CL	A-6	0	0-55	50-100	45-90	40-85	30-70	29-42	12-21
	15	Cemented very gravelly material	---	---	---	---	---	---	---	---	---	---
Redswale loam-----	0-1	Loam	ML	A-4	0	0-55	75-100	70-100	60-90	40-70	29-42	9-15
	1-5	Very gravelly loam	GC	A-2-6	0	0-50	50-95	45-90	40-85	30-70	29-41	12-19
	5	Cemented very gravelly material	---	---	---	---	---	---	---	---	---	---
Anita, gravelly duripan-----	0-3	Gravelly clay	CH	A-7-5	0	0-30	80-95	75-90	65-90	55-85	55-80	29-44
	3-8	Gravelly clay	CH	A-7-6	0	0-25	75-90	70-85	65-85	50-80	52-75	29-44
	8-15	Gravelly clay	CH	A-7-6	0	0-25	75-90	70-85	65-85	50-80	52-75	29-44
	15	Cemented gravelly material	---	---	0	0-65	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
306:												
Duric Xerarents, fill-----	0-8	Loam	CL	A-6	0	0	40-100	35-100	30-100	15-90	27-41	12-19
	8-14	Sandy clay loam	SC	A-7-6	0	0	75-100	70-100	55-95	25-75	27-49	12-25
	14-20	Sandy clay loam	SC	A-6	0	0	75-100	70-100	55-95	25-75	27-49	12-25
	20-36	Sandy loam	SC	A-2-6	0	0	90-100	85-100	50-95	25-75	20-41	6-19
	36-40	Clay	CH	A-7-6	0	0	60-100	55-100	50-100	40-95	49-68	29-40
	40	Cemented material	---	---	0	0	---	---	---	---	---	---
Duric Xerarents, cut-----	0-13	Sandy loam	SC	A-2-4	0	0	75-100	70-100	40-100	20-80	20-45	6-21
	13-15	Gravelly sandy loam	SC	A-2-6	0	0	75-100	70-100	40-100	20-95	22-62	7-36
	15	Cemented material	---	---	0	0	---	---	---	---	---	---
307:												
Duric Xerarents clay loam, leveled-----	0-2	Clay loam	CL	A-7-6	0	0	80-100	75-100	60-100	45-80	27-54	12-29
	2-12	Clay	CH	A-7-6	0	0	75-100	70-100	55-100	25-95	39-66	21-40
	12	Cemented material	---	---	0	0	---	---	---	---	---	---
310:												
Kimball loam-----	0-2	Loam	ML	A-6	0	0	85-100	75-100	60-95	45-75	23-41	6-17
	2-4	Loam	ML	A-6	0	0	85-100	75-100	60-95	45-75	23-41	6-17
	4-6	Loam	ML	A-6	0	0	85-100	75-100	60-95	45-75	21-37	6-17
	6-10	Loam	ML	A-6	0	0	85-100	75-100	60-95	45-75	21-37	6-17
	10-17	Loam	CL, CL-ML	A-6	0	0	85-100	75-100	60-100	45-80	32-40	16-21
	17-34	Clay	CH, CL	A-6	0	0	85-100	75-100	65-100	55-95	49-61	29-37
	34-46	Sandy clay loam	CL, SC	A-6	0	0	85-100	75-100	60-100	30-80	39-50	21-29
	46-64	Sandy clay loam	CL, SC	A-6	0	0	85-100	75-100	60-90	30-55	37-46	19-25

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
317: Thompsonflat loam-----	0-2	Loam	CL-ML	A-4	0	0	65-100	60-100	35-95	15-75	23-34	7-15
	2-5	Gravelly loam	GC	A-6	0-10	0-25	65-100	60-100	50-95	20-80	27-46	12-27
	5-12	Gravelly loam	CL	A-6	0-10	0-25	75-100	70-100	50-95	25-80	27-46	12-27
	12-19	Gravelly loam	CL	A-6	0-10	0-25	75-100	70-100	50-95	25-80	27-49	12-27
	19-29	Gravelly clay loam	CL	A-6	0-10	0-25	75-100	70-100	50-95	25-80	27-49	12-27
	29-35	Very gravelly clay	GC	A-2-7	0	0-15	25-100	20-100	10-100	10-95	46-63	27-40
	35-43	Extremely gravelly sandy clay loam	GC	A-2-6	0	0-40	25-85	20-85	10-80	0-50	16-46	2-27
	43-80	Extremely gravelly sandy clay loam	GC	A-2-6	0	0-40	25-85	20-85	10-80	0-50	16-46	2-27
318: Thompsonflat fine sandy loam---	0-3	Fine sandy loam	SC	A-4	0	0	65-100	60-100	35-95	15-75	23-34	7-15
	3-7	Fine sandy loam	SC	A-6	0-10	0-25	75-100	70-100	50-95	20-80	27-46	12-27
	7-11	Sandy clay loam	SC	A-6	0-10	0-25	75-100	70-100	50-95	25-80	27-46	12-27
	11-15	Sandy clay	SC	A-7-6	0-10	0-15	75-100	70-100	50-95	25-80	27-49	12-27
	15-22	Gravelly sandy clay	SC	A-2-7	0	0-15	25-100	20-100	10-100	10-95	46-63	27-40
	22-35	Extremely gravelly sandy clay loam	GC	A-2-6	0	0-40	25-85	20-85	10-80	0-50	16-46	2-27
	35-45	Extremely gravelly coarse sandy loam	GC-GM	A-2-4	0	0-40	25-85	20-85	10-80	0-50	16-46	2-27
	45-53	Extremely gravelly coarse sandy loam	GM	A-1-a	0	0-40	25-85	20-85	10-80	0-50	16-46	2-27
	53-66	Extremely gravelly coarse sandy loam	GP-GM	A-1-a	0	0-40	25-85	20-85	10-80	0-50	16-46	2-27
	66-80	Extremely gravelly coarse sandy loam	GP-GM	A-1-a	0	0-40	25-85	20-85	10-80	0-50	16-46	2-27

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
318: Oroville gravelly fine sandy loam-----	0-2	Gravelly fine sandy loam	SC	A-2-6	0	0	75-95	70-90	40-85	20-70	26-38	9-16
	2-6	Gravelly sandy loam	SC	A-2-6	0	0	75-100	70-100	40-85	20-75	27-36	12-17
	6-13	Gravelly clay loam	CL	A-6	0	0	50-95	45-90	35-90	20-70	0-44	NP-24
	13-17	Gravelly clay	CH	A-7-6	0	0	45-95	40-90	35-90	20-85	52-60	32-38
	17-23	Gravelly sandy clay	GC	A-2-7	0	0	45-95	40-90	35-90	20-85	52-60	32-38
	23-60	Cemented extremely gravelly material	---	---	0	0-10	---	---	---	---	---	---
320: Vistarobles sandy loam-----	0-5	Sandy loam	SC	A-2-6	0	0-15	75-95	70-90	40-85	20-70	27-40	10-18
	5-10	Sandy clay loam	SC	A-6	0	0-15	75-95	70-90	40-85	20-70	27-40	10-18
	10-14	Gravelly clay	CL	A-7-6	0	0	65-100	60-100	55-100	45-95	48-60	28-36
	14-34	Cemented gravelly material	SM	A-1-b	0	10-75	---	---	---	---	---	---
	34-40	Very cobbly sandy loam	SC	A-2-4	0	0-40	30-80	25-75	15-50	5-30	0-27	NP-10
Redding loam-----	0-4	Loam	CL	A-6	0	0	75-95	70-90	40-85	20-70	24-40	7-18
	4-11	Loam	CL	A-6	0	0	75-95	70-90	40-85	20-70	22-38	7-18
	11-24	Loam	CL	A-6	0	0-10	60-100	55-100	35-95	15-75	25-37	9-18
	24-35	Clay	CH	A-7-6	0	0-30	55-100	50-100	45-100	40-95	49-60	28-36
	35-40	Cemented very gravelly material	---	---	0	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
321: Durixeralfs, fine-loamy, gravelly fine sandy loam-----	0-1	Gravelly fine sandy loam	SC	A-2-4	0	0	65-95	60-90	35-85	15-70	22-28	7-10
	1-5	Gravelly fine sandy loam	GC	A-2-6	0	0	60-95	55-90	40-90	25-70	24-41	9-21
	5-10	Gravelly loam	GC	A-6	0	0	60-95	55-90	40-90	25-70	24-40	9-21
	10-18	Gravelly loam	GC	A-6	0	0	60-95	55-90	40-90	25-70	24-40	9-21
	18-24	Very gravelly clay loam	GC	A-6	0	0-40	55-100	50-100	40-100	20-80	36-44	19-25
	24-27	Very gravelly sandy clay	GC	A-2-7	0	0-40	40-100	35-100	30-100	20-95	43-58	25-36
	27	Cemented very gravelly material	---	---	0	0-15	---	---	---	---	---	---
Durixeralfs, loamy-skeletal, gravelly fine sandy loam-----	0-1	Gravelly fine sandy loam	SC-SM	A-2-4	0	0	65-90	60-85	40-80	25-65	20-38	6-18
	1-4	Gravelly loam	SC	A-6	0	5-10	45-75	40-70	35-70	25-55	27-41	12-21
	4-9	Very cobbly clay loam	CL	A-6	0	5-45	45-75	40-70	35-70	30-55	36-47	19-27
	9	Cemented very gravelly material	---	---	0	0-20	---	---	---	---	---	---
Typic Petraquepts silty clay---	0-3	Silty clay	CH	A-7-6	0	0-10	80-100	75-100	65-100	55-95	48-62	27-36
	3-11	Gravelly silty clay	GC	A-7-6	0	0-10	55-80	50-75	45-75	40-75	51-66	30-40
	11	Very gravelly cemented material	---	---	0	---	---	---	---	---	---	---
330: Wilsoncreek loam, occasionally flooded-----	0-7	Loam	CL	A-4	0	0	100	100	85-100	60-90	27-35	8-12
	7-14	Loam	CL	A-4	0	0	100	100	85-100	60-90	25-43	8-18
	14-25	Loam	CL	A-6	0	0	100	100	85-100	60-90	25-43	8-18
	25-34	Loam	CL	A-6	0	0	100	100	85-100	60-90	29-43	12-18
	34-44	Loam	CL	A-6	0	0	100	100	85-100	60-90	28-39	12-19
	44-60	Loam	CL	A-6	0	0	100	100	85-100	60-90	26-39	9-19

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
330: Trainer loam, occasionally flooded-----	0-7	Loam	CL	A-6	0	0	100	100	85-95	60-75	28-39	12-19
	7-13	Loam	CL	A-6	0	0	100	100	80-95	35-75	28-39	12-19
	13-26	Loam	CL	A-6	0	0	100	100	80-95	35-75	27-38	12-19
	26-36	Loam	CL	A-6	0	0	100	100	80-95	35-75	27-38	12-19
	36-46	Fine sandy loam, sandy loam	SC	A-4	0	0	100	100	70-95	40-75	20-30	6-12
	46-61	Sandy loam	SC-SM	A-2-4	0	0	100	100	60-70	30-40	20-30	6-12
331: Thompsonflat loam-----	0-2	Loam	CL-ML	A-4	0	0	65-100	60-100	35-95	15-75	23-34	7-15
	2-5	Gravelly loam	GC	A-6	0-10	0-25	65-100	60-100	50-95	20-80	27-46	12-27
	5-12	Gravelly loam	CL	A-6	0-10	0-25	75-100	70-100	50-95	25-80	27-46	12-27
	12-19	Gravelly loam	CL	A-6	0-10	0-25	75-100	70-100	50-95	25-80	27-49	12-27
	19-29	Gravelly clay loam	CL	A-6	0-10	0-25	75-100	70-100	50-95	25-80	27-49	12-27
	29-35	Very gravelly clay	GC	A-2-7	0	0-15	25-100	20-100	10-100	10-95	46-63	27-40
	35-43	Extremely gravelly sandy clay loam	GC	A-2-6	0	0-40	25-85	20-85	10-80	0-50	16-46	2-27
	43-80	Extremely gravelly sandy clay loam	GC	A-2-6	0	0-40	25-85	20-85	10-80	0-50	16-46	2-27
335: Galt clay loam-----	0-6	Clay loam	CL	A-7-6	0	0	100	100	90-100	70-80	43-55	21-29
	6-20	Clay loam	CH	A-7-6	0	0	100	100	90-100	70-95	43-72	21-44
	20-27	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	50-70	29-44
	27-30	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	50-70	29-44
	30	Cemented material	---	---	---	---	---	---	---	---	---	---
336: Galt clay-----	0-3	Clay	CH	A-7-6	0	0-10	65-100	60-100	55-100	45-95	51-72	29-44
	3-13	Clay	CH	A-7-6	0	0-10	65-100	60-100	55-100	45-95	51-72	29-44
	13-29	Clay	CH	A-7-6	0	0-25	60-100	55-100	50-100	40-95	50-70	29-44
	29-32	Clay	CH	A-7-6	0	0	65-100	60-100	55-100	40-95	47-70	27-44
	32-39	Cemented material	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In											
337:												
Galt clay loam-----	0-6	Clay loam	CL	A-7-6	0	0	100	100	90-100	70-80	43-55	21-29
	6-20	Clay loam	CH	A-7-6	0	0	100	100	90-100	70-95	43-72	21-44
	20-27	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	50-70	29-44
	27-30	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	50-70	29-44
	30	Cemented material	---	---	---	---	---	---	---	---	---	---
338:												
Oxyaquic Xerofluvents silt loam	0-6	Silt loam	CL	A-6	0	0	100	100	90-100	70-90	26-35	9-13
	6-20	Silt loam	CL	A-6	0	0	100	100	90-100	70-90	24-32	9-13
	20-32	Loamy sand	SM	A-2-4	0	0	100	100	50-75	15-30	16-23	2-6
	32-36	Loamy fine sand	SM	A-2-4	0	0	100	100	50-75	15-30	16-23	2-6
	36-46	Coarse sand	SP-SM	A-2-4	0	0	100	100	50-70	5-15	16-19	2
	46-50	Silt loam	CL	A-4	0	0	100	100	90-100	70-90	24-32	9-13
	50-55	Loamy fine sand	SM	A-2-4	0	0	100	100	50-75	15-30	16-23	2-6
	55-60	Silt loam	CL	A-6	0	0	100	100	90-100	70-90	24-32	9-13
339:												
Oxyaquic Xerofluvents sandy loam, frequently flooded-----	0-8	Sandy loam	SC	A-2-4	0	0	100	100	60-70	30-40	21-32	6-11
	8-12	Sandy loam	SM	A-2-4	0	0	100	100	60-70	30-40	16-29	2-11
	12-16	Fine sandy loam	SM	A-4	0	0	100	100	70-85	40-55	16-29	2-11
	16-60	Stratified sandy loam to gravelly sand	---	---	0	0	65-100	60-100	30-70	5-40	---	---
340:												
Rock outcrop, Lovejoy basalt.												
Thermalrocks very gravelly loam	0-1	Very gravelly loam	ML	A-5	0	10-55	30-90	25-85	20-80	15-65	32-44	8-11
	1-5	Very gravelly loam	GM	A-2-7	0	15-99	6-90	1-85	1-80	1-70	30-46	11-19
	5	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
340:												
Campbellhills gravelly loam----	0-2	Gravelly loam	ML	A-4	0	0-25	75-90	70-85	60-80	40-65	33-48	9-14
	2-7	Gravelly loam	GM	A-6	0	0-55	60-90	55-85	40-80	35-65	33-47	11-18
	7-17	Very gravelly clay loam	GC	A-7-6	0	0-65	30-90	25-85	20-80	15-70	34-50	17-28
	17-29	Very gravelly clay loam	GC	A-2-7	0	0-65	30-90	25-85	20-80	15-70	34-50	17-28
	29-39	Extremely gravelly clay loam	GC	A-2-7	0	0-65	30-90	25-85	20-80	15-70	34-50	17-28
	39-50	Extremely gravelly clay loam	GC	A-2-7	0	0-65	30-90	25-85	20-80	15-70	34-50	17-28
	50	Bedrock	---	---	---	---	---	---	---	---	---	---
341:												
Elsey loam-----	0-3	Loam	ML	A-4	0	0-10	80-95	75-90	60-85	45-70	33-48	9-14
	3-8	Gravelly loam	ML	A-6	0	0-15	75-95	70-90	60-85	40-70	33-45	11-16
	8-17	Cobbly loam	CL	A-6	0	10-30	75-95	70-90	60-85	40-70	30-41	12-18
	17-25	Cobbly loam	CL	A-6	0	10-30	75-95	70-90	60-85	40-70	30-41	12-18
	25-32	Very cobbly loam	CL	A-6	0	15-55	65-95	60-90	50-90	35-70	33-42	17-23
	32-38	Very cobbly loam	CL	A-6	0	15-55	65-95	60-90	50-90	35-70	33-42	17-23
	38	Bedrock	---	---	---	---	---	---	---	---	---	---
Beatsonhollow gravelly loam----	0-3	Gravelly loam	ML	A-7-5	0	0-30	65-90	60-85	50-80	35-65	32-48	8-14
	3-10	Cobbly loam	ML	A-7-6	0	0-30	65-90	60-85	50-80	35-65	32-48	8-15
	10-17	Very cobbly loam	CL	A-6	0	10-60	60-90	55-85	40-80	35-70	32-40	13-19
	17	Bedrock	---	---	---	---	---	---	---	---	---	---
Campbellhills gravelly loam----	0-2	Gravelly loam	ML	A-4	0	0-25	75-90	70-85	60-80	40-65	33-48	9-14
	2-7	Gravelly loam	GM	A-6	0	0-55	60-90	55-85	40-80	35-65	33-47	11-18
	7-17	Very gravelly clay loam	GC	A-7-6	0	0-65	30-90	25-85	20-80	15-70	34-50	17-28
	17-29	Very gravelly clay loam	GC	A-2-7	0	0-65	30-90	25-85	20-80	15-70	34-50	17-28
	29-39	Extremely gravelly clay loam	GC	A-2-7	0	0-65	30-90	25-85	20-80	15-70	34-50	17-28
	39-50	Extremely gravelly clay loam	GC	A-2-7	0	0-65	30-90	25-85	20-80	15-70	34-50	17-28
	50	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
341: Rock outcrop, Lovejoy basalt.												
342: Thermalrocks very gravelly loam	0-1	Very gravelly loam	ML	A-5	0	10-55	30-90	25-85	20-80	15-65	32-44	8-11
	1-5	Very gravelly loam	GM	A-2-7	0	15-99	6-90	1-85	1-80	1-70	30-46	11-19
	5	Bedrock	---	---	---	---	---	---	---	---	---	---
Beatsonhollow taxadjunct fine sandy loam-----	0-1	Fine sandy loam	SM	A-4	0	0	75-95	70-90	50-85	30-70	33-46	9-12
	1-6	Gravelly loam	SM	A-6	0	0	55-95	50-90	40-85	30-70	30-47	11-18
	6-10	Gravelly loam	SC	A-6	0	0	55-95	50-90	40-85	30-70	30-47	11-18
	10-15	Gravelly loam	SC	A-6	0	0	55-95	50-90	40-85	30-70	30-47	11-18
	15-18	Very gravelly loam	GC	A-2-6	0	0	50-95	45-90	40-85	30-70	30-47	11-18
	18	Bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop, Lovejoy basalt.												
343: Coalcanyon very cobbly loam---	0-2	Very cobbly loam	MH	A-5	0-75	10-50	35-90	30-85	25-80	20-65	41-59	8-11
	2-11	Very cobbly loam	ML	A-7-5	0-80	10-55	40-80	35-75	30-70	25-55	34-48	10-14
	11-27	Very cobbly loam	CL	A-6	0-85	10-65	15-75	10-70	5-70	5-55	32-48	15-24
	27-43	Very cobbly loam	GC	A-6	0-85	10-65	15-75	10-70	5-70	5-55	32-48	15-24
	43-65	Extremely cobbly clay loam	CL	A-7-6	0-85	10-65	15-75	10-70	5-70	5-55	32-48	15-24

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
343: Coonhollow gravelly loam-----	0-3	Gravelly loam	MH	A-5	0-75	10-50	35-90	30-85	25-80	20-65	43-63	10-14
	3-11	Very cobbly loam	ML	A-7-5	0-80	10-55	40-90	35-85	30-70	25-55	36-48	11-14
	11-22	Very cobbly loam	CL	A-6	0-85	10-75	15-80	10-75	5-70	5-55	28-50	12-26
	22-32	Extremely cobbly loam	CL	A-6	0-85	10-75	15-80	10-75	5-70	5-55	28-50	12-26
	32-45	Extremely cobbly clay loam	CL	A-7-6	0-85	10-75	15-80	10-75	5-70	5-55	28-50	12-26
	45-50	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
	50	Bedrock	---	---	---	---	---	---	---	---	---	---
344: Coalcanyon very cobbly loam----	0-2	Very cobbly loam	MH	A-5	0-75	10-50	35-90	30-85	25-80	20-65	41-59	8-11
	2-11	Very cobbly loam	ML	A-7-5	0-80	10-55	40-80	35-75	30-70	25-55	34-48	10-14
	11-27	Very cobbly loam	CL	A-6	0-85	10-65	15-75	10-70	5-70	5-55	32-48	15-24
	27-43	Very cobbly loam	GC	A-6	0-85	10-65	15-75	10-70	5-70	5-55	32-48	15-24
	43-65	Extremely cobbly clay loam	CL	A-7-6	0-85	10-65	15-75	10-70	5-70	5-55	32-48	15-24
Coonhollow gravelly loam-----	0-3	Gravelly loam	MH	A-5	0-75	10-50	35-90	30-85	25-80	20-65	43-63	10-14
	3-11	Very cobbly loam	ML	A-7-5	0-80	10-55	40-90	35-85	30-70	25-55	36-48	11-14
	11-22	Very cobbly loam	CL	A-6	0-85	10-75	15-80	10-75	5-70	5-55	28-50	12-26
	22-32	Extremely cobbly loam	CL	A-6	0-85	10-75	15-80	10-75	5-70	5-55	28-50	12-26
	32-45	Extremely cobbly clay loam	CL	A-7-6	0-85	10-75	15-80	10-75	5-70	5-55	28-50	12-26
	45-50	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
	50	Bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop, Lovejoy basalt.												

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
346: Cherotable loam-----	0-2	Loam	MH	A-7-5	0	0-15	75-100	70-100	60-95	40-75	42-58	11-15
	2-8	Loam	CL	A-7-6	0	0-45	75-100	70-100	60-100	40-80	29-48	12-24
	8-14	Clay loam	CL	A-7-6	0	0-45	75-100	70-100	60-100	40-80	29-48	12-24
	14-21	Gravelly clay loam	CL	A-7-6	0	0-45	75-100	70-100	60-100	40-80	29-48	12-24
	21-30	Cobbly clay loam	CL	A-7-6	0	0-45	75-100	70-100	60-100	40-80	29-48	12-24
	30-45	Very cobbly clay	CH	A-7-6	0	10-55	60-90	55-85	50-85	40-80	43-61	24-35
	45	Bedrock	---	---	---	---	---	---	---	---	---	---
Elsey loam-----	0-3	Loam	CL-ML	A-4	0	0-10	80-95	75-90	60-85	45-70	33-48	9-14
	3-8	Gravelly loam	CL-ML	A-4	0	0-15	75-95	70-90	60-85	40-70	33-45	11-16
	8-17	Cobbly loam	ML	A-4	0	10-30	75-95	70-90	60-85	40-70	30-41	12-18
	17-25	Cobbly loam	ML	A-4	0	10-30	75-95	70-90	60-85	40-70	30-41	12-18
	25-32	Very cobbly loam	ML	A-4	0	15-55	65-95	60-90	50-90	35-70	33-42	17-23
	32-38	Very cobbly loam	ML	A-4	0	15-55	65-95	60-90	50-90	35-70	33-42	17-23
	38	Bedrock	---	---	---	---	---	---	---	---	---	---
347: Haplic Palexeralfs loam-----	0-3	Loam	CL	A-6	0	0-15	50-90	45-85	30-80	20-65	29-37	9-12
	3-9	Very gravelly loam	GC	A-2-6	0	10-30	30-65	25-60	20-60	10-50	32-43	15-21
	9-22	Very gravelly clay loam	GC	A-2-6	0	10-30	30-65	25-60	25-60	10-50	32-43	15-21
	22-31	Extremely gravelly sandy clay	GC	A-2-7	0	0-40	35-55	30-50	25-50	10-30	36-53	17-29
	31-45	Extremely gravelly sandy clay loam	SC	A-2-7	0-40	15-55	35-65	30-60	25-50	10-30	36-53	17-29
	45-52	Extremely gravelly sandy clay	GC	A-2-7	0-40	15-55	35-55	30-50	25-50	10-30	36-53	17-29
	52-64	Extremely cobbly sandy clay	SC	A-2-7	0-30	45-55	35-65	35-60	25-60	20-55	50-61	29-36

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
353: Cherokeespring gravelly silt loam-----	0-3	Gravelly silt loam	MH	A-7-5	0	0-10	80-95	75-90	75-90	55-80	42-61	9-12
	3-7	Gravelly silt loam	CL	A-7-5	0	0-45	65-90	60-85	55-85	40-80	35-54	13-20
	7-16	Gravelly silty clay loam	CL	A-7-6	0	0-45	65-90	60-85	55-85	40-80	35-54	13-20
	16-30	Gravelly silty clay loam	CL	A-7-6	0	0-45	60-90	55-85	50-85	45-80	37-48	19-24
	30-42	Gravelly silty clay loam	CL	A-7-6	0	0-45	60-90	55-85	50-85	45-80	37-48	19-25
	42-60	Very gravelly silty clay	CH	A-7-6	0	0-55	50-90	45-85	40-85	40-80	42-52	24-29
	60-68	Very gravelly silty clay	CH	A-7-6	0	0-55	50-90	45-85	40-85	40-80	42-54	24-30
355: Coalcanyon very cobbly loam----	0-2	Very cobbly loam	MH	A-5	0-75	10-50	35-90	30-85	25-80	20-65	41-59	8-11
	2-11	Very cobbly loam	ML	A-7-5	0-80	10-55	40-80	35-75	30-70	25-55	34-48	10-14
	11-27	Very cobbly loam	CL	A-6	0-85	10-65	15-75	10-70	5-70	5-55	32-48	15-24
	27-43	Very cobbly loam	GC	A-6	0-85	10-65	15-75	10-70	5-70	5-55	32-48	15-24
	43-65	Extremely cobbly clay loam	CL	A-7-6	0-85	10-65	15-75	10-70	5-70	5-55	32-48	15-24
Talus.												
356: Coalcanyon very cobbly loam----	0-2	Very cobbly loam	MH	A-5	0-75	10-50	35-90	30-85	25-80	20-65	41-59	8-11
	2-11	Very cobbly loam	ML	A-7-5	0-80	10-55	40-80	35-75	30-70	25-55	34-48	10-14
	11-27	Very cobbly loam	CL	A-6	0-85	10-65	15-75	10-70	5-70	5-55	32-48	15-24
	27-43	Very cobbly loam	GC	A-6	0-85	10-65	15-75	10-70	5-70	5-55	32-48	15-24
	43-65	Extremely cobbly clay loam	CL	A-7-6	0-85	10-65	15-75	10-70	5-70	5-55	32-48	15-24

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
356: Rock outcrop, basalt cliffs. Talus.												
Coonhollow gravelly loam-----	0-3	Gravelly loam	MH	A-5	0-75	10-50	35-90	30-85	25-80	20-65	43-63	10-14
	3-11	Very cobbly loam	ML	A-7-5	0-80	10-55	40-90	35-85	30-70	25-55	36-48	11-14
	11-22	Very cobbly loam	CL	A-6	0-85	10-75	15-80	10-75	5-70	5-55	28-50	12-26
	22-32	Extremely cobbly loam	CL	A-6	0-85	10-75	15-80	10-75	5-70	5-55	28-50	12-26
	32-45	Extremely cobbly clay loam	CL	A-7-6	0-85	10-75	15-80	10-75	5-70	5-55	28-50	12-26
	45-50	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
	50	Bedrock	---	---	---	---	---	---	---	---	---	---
360: Typic Xerofluvents, coarse- loamy-----	0-3	Gravelly loamy sand	SC-SM	A-1-b	0	0	65-100	60-100	30-85	10-55	17-30	3-12
	3-11	Gravelly coarse sandy loam	SC-SM	A-1-b	0	0	55-95	50-90	25-90	5-85	0-41	NP-22
	11-20	Gravelly coarse sandy loam	SC-SM	A-2-4	0	0	55-95	50-90	25-90	5-85	0-41	NP-22
	20-24	Sand	SW-SM	A-3	0	0	55-95	50-90	25-90	5-85	0-41	NP-22
	24-31	Gravelly sand	SP-SM	A-1-b	0	0	55-95	50-90	25-90	5-85	0-41	NP-22
	31-45	Silt loam	CL	A-4	0	0	55-95	50-90	25-90	5-85	0-41	NP-22
	45-51	Gravelly sand	SP-SM	A-1-b	0	0	25-95	20-90	10-90	0-85	0-41	NP-22
	51-66	Silt	CL-ML	A-4	0	0	25-95	20-90	10-90	0-85	0-41	NP-22
	66-84	Very gravelly coarse sand	GP-GM	A-1-a	0	0	25-95	20-90	10-90	0-85	0-41	NP-22
	84-95	Extremely gravelly coarse sand	GP-GM	A-1-a	0	0	25-95	20-90	10-90	0-85	0-41	NP-22

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
360: Typic Xerofluvents, sandy- skeletal-----	0-3	Gravelly loamy coarse sand	SP-SM	A-1-b	0	0	60-90	55-85	30-80	5-65	16-30	2-12
	3-9	Very gravelly loamy coarse sand	GP-GM	A-1-a	0	0	15-75	10-70	5-60	0-40	0-29	NP-12
	9-16	Very gravelly coarse sand	GP-GM	A-1-a	0	0	15-75	10-50	5-30	0-20	0-17	NP-2
	16-22	Very gravelly coarse sand	GW	A-1-a	0	0	15-75	10-50	5-30	0-20	0-17	NP-2
	22-30	Very gravelly coarse sand	GP-GM	A-1-a	0	0	15-75	10-50	5-30	0-20	0-17	NP-2
	30-40	Very gravelly coarse sand	GP-GM	A-1-a	0	0	15-75	10-50	5-30	0-20	0-17	NP-2
	40-50	Gravelly sand	SP-SM	A-1-a	0	0	15-75	10-50	5-30	0-20	0-17	NP-2
	50-98	Extremely gravelly coarse sand	GP-GM	A-1-a	0	0	15-75	10-50	5-30	0-20	0-17	NP-2
361: Typic Xerofluvents, sandy- skeletal-----	0-3	Gravelly loamy coarse sand	SP-SM	A-1-b	0	0	60-90	55-85	30-80	5-65	16-30	2-12
	3-9	Very gravelly loamy coarse sand	GP-GM	A-1-a	0	0	15-75	10-70	5-60	0-40	0-29	NP-12
	9-16	Very gravelly coarse sand	GP-GM	A-1-a	0	0	15-75	10-50	5-30	0-20	0-17	NP-2
	16-22	Very gravelly coarse sand	GW	A-1-a	0	0	15-75	10-50	5-30	0-20	0-17	NP-2
	22-30	Very gravelly coarse sand	GP-GM	A-1-a	0	0	15-75	10-50	5-30	0-20	0-17	NP-2
	30-40	Very gravelly coarse sand	GP-GM	A-1-a	0	0	15-75	10-50	5-30	0-20	0-17	NP-2
	40-50	Gravelly sand	SP-SM	A-1-a	0	0	15-75	10-50	5-30	0-20	0-17	NP-2
	50-98	Extremely gravelly coarse sand	GP-GM	A-1-a	0	0	15-75	10-50	5-30	0-20	0-17	NP-2

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In											
362: Ultic Haploxeralfs, sandstone, low elevation, very deep-----	0-2	Sandy loam	SC	A-2-4	0	0	90-100	85-100	50-95	25-65	26-42	9-13
	2-8	Sandy clay loam	CL	A-6	0	0	75-100	70-100	55-100	25-80	30-47	13-25
	8-18	Sandy clay loam	CL	A-6	0	0	75-100	70-100	55-100	25-80	30-47	13-25
	18-28	Sandy clay loam	CL	A-6	0	0	75-100	70-100	55-100	25-80	35-51	17-29
	28-39	Sandy clay loam	CL	A-6	0	0	75-100	70-100	55-100	25-80	35-51	17-29
	39-49	Sandy clay loam	CL	A-6	0	0	80-100	75-100	60-100	30-80	35-46	17-25
	49-56	Sandy clay loam	SC	A-2-6	0	0	95-100	90-100	55-90	25-55	22-31	7-15
	56-70	Sandy loam	SC	A-4	0	0	95-100	90-100	55-90	25-55	22-31	7-15
Ultic Haploxeralfs, sandstone, low elevation, deep-----	0-3	Fine sandy loam	CL	A-4	0	0	90-100	85-100	50-95	25-65	26-42	9-13
	3-8	Sandy clay loam	CL	A-6	0	0	75-100	70-100	55-95	25-75	30-42	13-21
	8-15	Sandy clay loam	SC	A-6	0	0	75-100	70-100	55-95	25-75	30-42	13-21
	15-24	Fine sandy loam	CL-ML	A-4	0	0	80-100	75-100	55-95	30-75	20-41	6-21
	24-32	Loam	CL	A-4	0	0	80-100	75-100	55-95	30-75	20-41	6-21
	32-41	Very fine sandy loam	CL-ML	A-4	0	0	80-100	75-100	55-95	30-75	20-41	6-21
	41	Bedrock	---	---	---	---	---	---	---	---	---	---
363: Ultic Haploxeralfs, sandstone, low elevation, very deep-----	0-2	Sandy loam	SC	A-2-4	0	0	90-100	85-100	50-95	25-65	26-42	9-13
	2-8	Sandy clay loam	CL	A-6	0	0	75-100	70-100	55-100	25-80	30-47	13-25
	8-18	Sandy clay loam	CL	A-6	0	0	75-100	70-100	55-100	25-80	30-47	13-25
	18-28	Sandy clay loam	CL	A-6	0	0	75-100	70-100	55-100	25-80	35-51	17-29
	28-39	Sandy clay loam	CL	A-6	0	0	75-100	70-100	55-100	25-80	35-51	17-29
	39-49	Sandy clay loam	CL	A-6	0	0	80-100	75-100	60-100	30-80	35-46	17-25
	49-56	Sandy clay loam	SC	A-2-6	0	0	95-100	90-100	55-90	25-55	22-31	7-15
	56-70	Sandy loam	SC	A-4	0	0	95-100	90-100	55-90	25-55	22-31	7-15
Ultic Haploxeralfs, sandstone, low elevation, deep-----	0-3	Fine sandy loam	CL	A-4	0	0	90-100	85-100	50-95	25-65	26-42	9-13
	3-8	Sandy clay loam	CL	A-6	0	0	75-100	70-100	55-95	25-75	30-42	13-21
	8-15	Sandy clay loam	SC	A-6	0	0	75-100	70-100	55-95	25-75	30-42	13-21
	15-24	Fine sandy loam	CL-ML	A-4	0	0	80-100	75-100	55-95	30-75	20-41	6-21
	24-32	Loam	CL	A-4	0	0	80-100	75-100	55-95	30-75	20-41	6-21
	32-41	Very fine sandy loam	CL-ML	A-4	0	0	80-100	75-100	55-95	30-75	20-41	6-21
	41	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
364:												
Ultic Haploxeralfs, sandstone, low elevation, deep-----	0-3	Fine sandy loam	CL	A-4	0	0	90-100	85-100	50-95	25-65	26-42	9-13
	3-8	Sandy clay loam	CL	A-6	0	0	75-100	70-100	55-95	25-75	30-42	13-21
	8-15	Sandy clay loam	SC	A-6	0	0	75-100	70-100	55-95	25-75	30-42	13-21
	15-24	Fine sandy loam	CL-ML	A-4	0	0	80-100	75-100	55-95	30-75	20-41	6-21
	24-32	Loam	CL	A-4	0	0	80-100	75-100	55-95	30-75	20-41	6-21
	32-41	Very fine sandy loam	CL-ML	A-4	0	0	80-100	75-100	55-95	30-75	20-41	6-21
	41	Bedrock	---	---	---	---	---	---	---	---	---	---
Ultic Haploxeralfs, sandstone, low elevation, very deep-----												
	0-2	Sandy loam	SC	A-2-4	0	0	90-100	85-100	50-95	25-65	26-42	9-13
	2-8	Sandy clay loam	CL	A-6	0	0	75-100	70-100	55-100	25-80	30-47	13-25
	8-18	Sandy clay loam	CL	A-6	0	0	75-100	70-100	55-100	25-80	30-47	13-25
	18-28	Sandy clay loam	CL	A-6	0	0	75-100	70-100	55-100	25-80	35-51	17-29
	28-39	Sandy clay loam	CL	A-6	0	0	75-100	70-100	55-100	25-80	35-51	17-29
	39-49	Sandy clay loam	CL	A-6	0	0	80-100	75-100	60-100	30-80	35-46	17-25
	49-56	Sandy clay loam	SC	A-2-6	0	0	95-100	90-100	55-90	25-55	22-31	7-15
	56-70	Sandy loam	SC	A-4	0	0	95-100	90-100	55-90	25-55	22-31	7-15
365:												
Palexerults gravelly loam-----	0-2	Gravelly loam	CL	A-6	0	0-15	75-100	70-100	60-100	40-90	27-46	10-16
	2-12	Gravelly loam	GC	A-6	0	0-10	60-100	55-100	40-100	25-95	30-47	13-25
	12-20	Clay loam	CL	A-7-6	0	0-10	60-100	55-100	40-100	25-95	30-47	13-25
	20-29	Silty clay	CH	A-7-6	0	0	60-100	55-100	50-100	70-95	45-69	25-44
	29-46	Silty clay	CH	A-7-6	0	0	60-100	55-100	45-100	25-95	40-69	21-44
	46-65	Silty clay	CH	A-7-6	0	0	95-100	90-100	80-100	75-95	49-69	29-44
	65	Bedrock	---	---	---	---	---	---	---	---	---	---
366:												
Palexerults gravelly loam-----	0-2	Gravelly loam	CL	A-6	0	0-15	75-100	70-100	60-100	40-90	27-46	10-16
	2-12	Gravelly loam	GC	A-6	0	0-10	60-100	55-100	40-100	25-95	30-47	13-25
	12-20	Clay loam	CL	A-7-6	0	0-10	60-100	55-100	40-100	25-95	30-47	13-25
	20-29	Silty clay	CH	A-7-6	0	0	60-100	55-100	50-100	70-95	45-69	25-44
	29-46	Silty clay	CH	A-7-6	0	0	60-100	55-100	45-100	25-95	40-69	21-44
	46-65	Silty clay	CH	A-7-6	0	0	95-100	90-100	80-100	75-95	49-69	29-44
	65	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
370: Palixerults gravelly loam-----	0-2	Gravelly loam	CL	A-6	0	0-15	75-100	70-100	60-100	40-90	27-46	10-16
	2-12	Gravelly loam	GC	A-6	0	0-10	60-100	55-100	40-100	25-95	30-47	13-25
	12-20	Clay loam	CL	A-7-6	0	0-10	60-100	55-100	40-100	25-95	30-47	13-25
	20-29	Silty clay	CH	A-7-6	0	0	60-100	55-100	50-100	70-95	45-69	25-44
	29-46	Silty clay	CH	A-7-6	0	0	60-100	55-100	45-100	25-95	40-69	21-44
	46-65	Silty clay	CH	A-7-6	0	0	95-100	90-100	80-100	75-95	49-69	29-44
	65	Bedrock	---	---	---	---	---	---	---	---	---	---
375: Wickscorner loam-----	0-2	Loam	CL	A-6	0	0	90-100	85-100	60-95	35-75	29-42	9-13
	2-8	Loam	CL	A-6	0	0-10	55-95	50-90	40-90	30-70	30-44	13-23
	8-22	Gravelly clay loam	GC	A-5	0	0-10	55-95	50-90	40-90	30-70	30-44	13-23
	22-38	Very gravelly clay loam	GC	A-7-5	0	0-15	30-100	25-96	20-96	15-91	37-52	19-32
	38-59	Very gravelly clay	GC	A-2-7	0	0-15	30-100	25-96	20-96	15-91	37-54	19-32
	59-72	Extremely gravelly sandy clay	GC	A-2-7	0-4	0-60	30-55	25-50	20-50	15-50	42-60	24-39
	72-84	Extremely gravelly sandy clay	GC	A-2-7	0-4	0-60	30-55	25-50	20-50	15-50	42-60	24-39
376: Flagcanyon gravelly loam-----	0-3	Gravelly loam	ML	A-6	0	0-15	75-100	70-100	50-95	30-75	33-48	9-14
	3-9	Very gravelly loam	GC	A-7-6	0	0-45	30-80	25-75	20-75	15-60	33-46	14-20
	9-14	Very gravelly loam	GC	A-2-7	0	0-45	30-80	25-75	20-75	15-60	33-46	14-20
	14-30	Very gravelly clay loam	GC	A-7-6	0	0-30	30-50	25-45	20-45	15-40	39-58	20-35
	30-53	Extremely gravelly sandy clay loam	GC	A-2-7	0	30-55	30-45	25-40	20-40	10-25	31-56	15-35
	53-65	Extremely gravelly sandy clay	GC	A-2-7	0	30-55	30-45	25-40	20-40	10-25	31-56	15-35

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
376: Wickscorner loam-----	0-2	Loam	CL	A-6	0	0	90-100	85-100	60-95	35-75	29-42	9-13
	2-8	Loam	CL	A-6	0	0-10	55-95	50-90	40-90	30-70	30-44	13-23
	8-22	Gravelly clay loam	GC	A-5	0	0-10	55-95	50-90	40-90	30-70	30-44	13-23
	22-38	Very gravelly clay loam	GC	A-7-5	0	0-15	30-100	25-96	20-96	15-91	37-52	19-32
	38-59	Very gravelly clay	GC	A-2-7	0	0-15	30-100	25-96	20-96	15-91	37-54	19-32
	59-72	Extremely gravelly sandy clay	GC	A-2-7	0-4	0-60	30-55	25-50	20-50	15-50	42-60	24-39
	72-84	Extremely gravelly sandy clay	GC	A-2-7	0-4	0-60	30-55	25-50	20-50	15-50	42-60	24-39
377: Flagcanyon taxadjunct fine sandy loam-----	0-3	Fine sandy loam	SC	A-6	0	0	75-95	70-90	50-85	30-70	26-32	9-12
	3-7	Loam	CL	A-6	0	0	60-95	55-90	40-90	35-70	35-45	16-23
	7-16	Clay loam	CL	A-6	0	0	60-95	55-90	40-90	35-70	34-44	16-23
	16-23	Very gravelly clay	GC	A-2-7	0	0-30	30-45	25-40	20-40	10-35	45-61	25-37
	23-31	Extremely gravelly clay	GC	A-2-7	0	0-30	30-45	25-40	20-40	10-35	45-61	25-37
	31-63	Cemented extremely gravelly sand	GW	A-1-a	0	15-30	30	25	10-15	0	0-18	NP-2
Durixeralfs, clayey-skeletal, loam-----	0-1	Loam	CL	A-6	0	0-15	60-100	55-100	40-95	35-75	27-37	12-17
	1-4	Clay loam	CL	A-7-6	0	0-25	65-90	60-85	50-80	35-70	34-43	16-21
	4-9	Very gravelly clay	GC	A-2-7	0	0-15	30-60	25-55	20-55	15-55	49-61	29-37
	9-15	Very gravelly clay	GC	A-2-7	0	0-15	30-60	25-55	20-55	15-55	49-61	29-37
	15-60	Cemented extremely gravelly sand	GP-GC	A-1-a	0	30-55	40-65	35-60	20-50	0-50	16-60	2-37

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
377:												
Duraquerts gravelly clay-----	0-3	Gravelly clay	CH	A-7-6	0	0-5	75-95	70-90	65-90	50-85	51-64	29-36
	3-6	Gravelly silty clay	CH	A-7-6	0	0-5	75-95	70-90	65-90	50-85	50-61	29-36
	6-15	Silty clay	CH	A-7-6	0	0-5	90-95	85-90	75-90	65-85	54-65	32-40
	15-21	Silty clay	CH	A-7-6	0	0-5	90-95	85-90	75-90	65-85	54-65	32-40
	21-23	Very gravelly silty clay	GC	A-2-7	0	0-15	40-75	35-70	30-70	25-70	58-64	36-40
	23-60	Cemented very gravelly sandy loam	GP-GC	A-1-a	0	0-15	30-40	25-35	15-25	10-15	16-22	2-6
400:												
Subaco taxadjunct clay-----	0-8	Clay	CH	A-5	0	0	100	100	90-100	75-95	52-71	32-40
	8-16	Silty clay	CH	A-6	0	0	100	100	90-100	75-100	56-69	35-42
	16-29	Silty clay	CH	A-6	0	0	100	100	90-100	75-100	56-70	35-42
	29-35	Clay	CH	A-6	0	0	100	100	90-100	70-95	42-65	24-43
	35-42	Cemented silty clay loam			0	0	---	---	---	---	---	---
	42-60	Sandy loam	CL-ML	A-4	0	0	100	100	90-100	30-60	---	---
415:												
Ignord fine sandy loam-----	0-4	Fine sandy loam	CL-ML	A-4	0	0	100	100	70-85	40-55	21-38	4-13
	4-14	Fine sandy loam	CL-ML	A-4	0	0	100	100	60-85	30-55	21-29	4-9
	14-25	Sandy loam	SC-SM	A-4	0	0	100	100	60-85	30-55	21-29	4-9
	25-32	Fine sandy loam	CL-ML	A-4	0	0	100	100	60-85	30-55	21-29	4-9
	32-53	Sandy loam	SC-SM	A-4	0	0	100	100	60-85	30-55	19-27	4-9
	53-58	Fine sandy loam	CL-ML	A-4	0	0	100	100	60-85	30-55	19-27	4-9
	58-77	Fine sandy loam	CL-ML	A-4	0	0	100	100	60-85	30-55	19-27	4-9
416:												
Calcic Haploxerolls sandy loam	0-5	Sandy loam	SM	A-2-4	0	0	100	100	60-95	30-75	20-25	NP-5
	5-17	Sandy loam	SM	A-2-4	0	0	100	100	60-95	30-75	20-25	NP-5
	17-20	Sandy loam	SM	A-2-4	0	0	100	100	60-95	30-75	20-25	NP-5
	20-33	Sandy loam	SM	A-2-4	0	0	100	100	60-95	30-75	20-25	NP-5
	33-44	Sandy loam	SM	A-2-4	0	0	100	100	50-70	15-40	20-25	NP-5
	44-72	Dense material	CL	A-6	0	0	100	100	70-100	40-100	30-45	12-19

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
418: Almendra loam-----	0-4	Loam	ML	A-7-6	0	0	95-100	90-100	65-95	35-75	30-47	9-18
	4-14	Loam	CL	A-7-6	0	0	95-100	90-100	65-95	35-75	30-47	9-18
	14-29	Loam	CL	A-6	0	0	95-100	90-100	65-95	35-75	29-42	11-19
	29-40	Loam	CL	A-6	0	0	95-100	90-100	65-95	35-75	29-42	11-19
	40-52	Loam	CL	A-4	0	0	95-100	90-100	65-95	35-75	26-39	9-19
	52-74	Very fine sandy loam	CL	A-4	0	0	95-100	90-100	55-95	25-75	22-36	7-17
	74-86	Very fine sandy loam	CL	A-4	0	0	95-100	90-100	55-95	25-75	22-36	7-17
419: Conejo fine sandy loam, overwash-----	0-17	Fine sandy loam	CL	A-4	0	0	95-100	90-100	65-95	35-75	22-34	6-13
	17-35	Clay loam	CL	A-7-6	0	0	95-100	90-100	75-100	55-80	33-55	12-25
	35-45	Clay loam	CL	A-7-6	0	0	95-100	90-100	75-100	55-80	30-50	12-25
	45-56	Clay loam	CL	A-7-6	0	0	95-100	90-100	75-100	55-80	29-48	12-25
	56-62	Loam	CL	A-6	0	0	95-100	90-100	55-100	25-80	25-47	9-25
	62-70	Loam	CL	A-6	0	0	95-100	90-100	55-100	25-80	25-47	9-25
	70-72	Loam	CL	A-6	0	0	95-100	90-100	55-100	25-80	25-47	9-25
420: Conejo clay loam-----	0-5	Clay loam	MH	A-7-5	0	0	99-100	96-100	85-100	70-80	43-58	18-24
	5-19	Clay loam	CL	A-7-6	0	0	99-100	96-100	85-100	70-80	39-53	19-25
	19-30	Clay loam	CL	A-7-6	0	0	99-100	96-100	85-100	70-80	39-53	19-25
	30-48	Clay loam	CL	A-7-6	0	0	99-100	96-100	85-100	70-80	38-48	19-25
	48-70	Sandy loam	SC	A-6	0	0	99-100	96-100	70-100	30-80	25-47	9-25
425: Vina fine sandy loam-----	0-3	Fine sandy loam	ML	A-4	0	0	95-100	90-100	65-95	35-75	27-40	7-13
	3-11	Fine sandy loam	CL	A-4	0	0	95-100	90-100	65-95	35-75	27-40	7-13
	11-23	Sandy loam	SC	A-4	0	0	95-100	90-100	55-95	25-75	22-33	6-12
	23-37	Sandy loam	SC-SM	A-2-4	0	0	95-100	90-100	55-95	25-75	22-33	6-12
	37-50	Sandy loam	SM	A-2-4	0	0	95-100	90-100	45-95	5-75	0-27	NP-9
	50-54	Loamy coarse sand	SM	A-2-4	0	0	95-100	90-100	45-95	5-75	0-27	NP-9
	54-80	Coarse sand	SM	A-2-4	0	0	95-100	90-100	45-95	5-75	0-27	NP-9
426: Vina loam-----	0-4	Loam	ML	A-4	0	0	95-100	90-100	75-95	55-75	27-40	7-13
	4-15	Loam	CL	A-4	0	0	95-100	90-100	55-95	25-75	21-38	2-11
	15-28	Loam	CL-ML	A-4	0	0	95-100	90-100	55-95	25-75	18-33	2-12
	28-44	Loam	CL	A-4	0	0	95-100	90-100	55-95	25-75	18-33	2-12
	44-63	Loam	CL	A-4	0	0	95-100	90-100	55-95	25-75	17-33	2-12
	63-72	Loam	CL	A-6	0	0	95-100	90-100	55-95	25-75	16-30	2-12

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
439: Oxyaquic Xerofluvents clay-----	0-10	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	50-72	29-44
	10-13	Silty clay	CH	A-7-6	0	0	100	100	95-100	90-95	51-72	29-44
	13-21	Silty clay	CH	A-7-6	0	0	100	100	95-100	90-95	51-72	29-44
	21-27	Silt loam	CL-ML	A-4	0	0	100	100	90-100	70-90	16-27	2-10
	27-32	Silty clay	CH	A-7-6	0	0	100	100	95-100	90-95	49-69	29-44
	32-37	Silty clay loam	CL	A-7-6	0	0	100	100	95-100	85-95	43-50	25-29
	37-55	Clay	CH	A-7-5	0	0	100	100	90-100	75-95	68-91	44-60
	55-63	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	68-90	44-60
	63-65	Cemented material	---	---	0	0	---	---	---	---	---	---
	65-80	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	49-69	29-44
440: Oxyaquic Xerofluvents silt loam, frequently flooded-----	0-9	Stratified silt loam to very fine sandy loam	CL	A-4	0	0	100	100	85-100	50-90	17-41	2-19
	9-18	Fine sand	SC-SM	A-2-4	0	0	100	100	65-80	20-35	19-26	2-6
	18-25	Stratified silt loam to very fine sandy loam	CL-ML	A-4	0	0	100	100	85-100	50-90	23-41	6-19
	25-33	Stratified silt loam to fine sand	CL	A-4	0	0	100	100	65-100	20-90	16-38	2-19
	33-44	Stratified silty clay loam to loam	CL	A-6	0	0	100	100	85-100	60-95	24-42	9-21
	44-51	Stratified silt loam to silty clay loam	CL	A-6	0	0	100	100	90-100	70-95	24-42	9-21
	51-60	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	49-81	29-52

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
441: Oxyaquic Xerofluvents very fine sandy loam-----	0-6	Very fine sandy loam	CL	A-6	0	0	100	100	85-95	50-65	26-35	9-13
	6-20	Silt loam	CL	A-6	0	0	100	100	90-100	70-90	29-41	12-19
	20-30	Silt loam	CL	A-6	0	0	100	100	90-100	70-90	29-41	12-19
	30-43	Stratified loamy fine sand to silt loam	CL	A-6	0	0	100	100	85-100	50-90	25-40	5-20
	43-55	Silt loam	CL	A-6	0	0	100	100	90-100	70-90	27-38	12-19
	55-72	Stratified loamy fine sand to silt loam			0	0	100	100	50-100	15-90	---	---
	72-75	Clay	CL	A-7-6	0	0	100	100	90-100	75-95	49-70	29-44
442: Durixerolls clay loam-----	0-6	Clay loam	CH	A-7-6	0	0	80-100	75-100	65-100	55-95	39-58	19-28
	6-12	Clay loam	CL	A-7-6	0	0	90-100	85-100	75-100	60-95	39-54	19-29
	12-24	Clay loam	CL	A-7-6	0	0	90-100	85-100	70-100	55-95	36-47	17-25
	24-33	Clay loam	CL	A-7-6	0	0	90-100	85-100	50-100	25-95	28-47	11-25
	33	Cemented material	---	---	0	0	---	---	---	---	---	---
Haploxerolls clay loam-----	0-5	Clay loam	CL	A-7-6	0	0	100	100	90-100	70-80	42-55	18-25
	5-18	Clay loam	CL	A-7-6	0	0	100	100	90-100	70-95	42-55	18-25
	18-29	Loam	CL	A-6	0	0	95-100	90-100	75-100	55-95	37-50	17-25
	29-44	Loam	CL	A-6	0	0	95-100	90-100	75-100	55-95	31-50	13-25
	44-57	Loam	CL	A-6	0	0	90-100	85-100	25-100	25-95	20-47	6-25
	57	Cemented material	---	---	0	0	---	---	---	---	---	---
443: Durixerolls loam-----	0-4	Loam	CL	A-6	0	0	100	100	85-95	60-75	29-43	12-17
	4-10	Loam	CL	A-6	0	0	100	100	85-95	60-75	28-39	11-17
	10-17	Loam	CL	A-6	0	0	95-100	90-100	75-95	55-75	28-37	12-17
	17-23	Loam	CL	A-6	0	0	95-100	90-100	75-100	55-80	28-43	12-21
	23-26	Loam	CL	A-6	0	0	95-100	90-100	75-100	55-80	27-43	12-21
	26	Cemented material	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
443: Haploxerolls loam-----	0-5	Loam	ML	A-7-6	0	0	100	95-100	80-95	60-75	34-47	13-18
	5-16	Loam	CL	A-7-6	0	0	100	95-100	80-95	60-75	34-47	13-18
	16-27	Loam	CL	A-6	0	0	100	95-100	80-95	60-75	29-42	12-18
	27-40	Loam	CL	A-6	0	0	100	95-100	60-95	30-75	29-42	12-18
	40-48	Loam	CL	A-6	0	0	100	90-100	55-95	25-75	22-42	5-18
	48-52	Sandy loam	SC	A-2-4	0	0	100	90-100	55-95	25-75	20-38	5-19
	52	Cemented material	---	---	0	0	---	---	---	---	---	---
445: Chico loam-----	0-5	Loam	CL	A-6	0	0	100	100	85-95	60-75	32-47	13-18
	5-10	Clay loam	CL	A-7-6	0	0	100	100	85-100	60-95	37-51	17-25
	10-21	Clay loam	CL	A-7-6	0	0	100	100	85-100	60-95	37-51	17-25
	21-32	Clay loam	CL	A-7-6	0	0	100	100	85-100	60-95	36-49	17-25
	32-50	Loam	CL	A-6	0	0	100	100	85-100	60-80	28-47	12-25
	50-70	Loam	CL	A-6	0	0	100	100	85-100	60-80	28-47	12-25
	70-80	Loam	CL	A-6	0	0	100	100	85-100	60-80	28-47	12-25
447: Charger fine sandy loam-----	0-3	Fine sandy loam	ML	A-4	0	0	80-100	75-100	55-85	30-55	23-40	4-11
	3-7	Fine sandy loam	CL	A-4	0	0	80-100	75-100	40-85	25-55	21-38	4-11
	7-15	Fine sandy loam	CL	A-4	0	0	80-100	75-100	40-85	25-55	21-38	4-11
	15-32	Sandy loam	SC	A-2-4	0	0	55-100	50-100	30-85	15-55	19-31	4-11
	32-42	Sandy loam	SC	A-4	0	0-10	55-100	50-100	30-85	15-55	19-31	4-11
	42-53	Sandy loam	SC	A-4	0	0-10	55-100	50-100	30-85	15-55	19-31	4-11
	53-63	Sandy loam	SC-SM	A-4	0	0-10	55-100	50-100	30-85	15-55	19-31	4-11
	63-80	Extremely gravelly loamy coarse sand	GP-GM	A-1-a	0-25	10-50	25-75	20-70	15-50	0-30	0-21	NP-6
448: Haploxerolls clay loam-----	0-5	Clay loam	CH	A-7-6	0	0	100	100	90-100	70-80	42-55	18-25
	5-10	Clay loam	CL	A-7-6	0	0	100	100	90-100	70-80	42-55	18-25
	10-24	Clay loam	CL	A-7-6	0	0	100	100	90-100	70-80	39-50	19-25
	24-39	Clay loam	CL	A-7-6	0	0	100	100	90-100	70-80	39-50	19-25
	39-66	Loam	CL	A-6	0	0	100	100	80-100	35-90	28-47	12-25
449: Haploxerolls loam-----	0-4	Loam	ML	A-7-6	0	0	100	100	85-95	60-75	32-47	11-18
	4-10	Loam	CL	A-6	0	0	100	100	85-100	60-90	32-47	11-18
	10-24	Loam	CL	A-6	0	0	100	100	80-95	60-90	29-42	12-18
	24-36	Loam	CL	A-6	0	0	100	100	80-95	60-90	29-42	12-18
	36-52	Loam	CL	A-6	0	0	100	100	80-95	60-90	28-39	12-19
	52-60	Sandy loam	SC	A-2-6	0	0	100	100	60-100	30-90	20-38	6-19

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
500:												
Lofgren clay-----	0-5	Clay	CH	A-7-5	0	0	100	100	90-100	75-95	70-87	44-52
	5-12	Clay	CH	A-7-5	0	0	100	100	90-100	75-95	70-85	44-52
	12-29	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	69-83	44-52
	29-38	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	69-83	44-52
	38-44	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	69-83	44-52
	44-47	Clay loam	CL	A-6	0	0	100	100	90-100	70-95	37-50	19-29
	47-82	Cemented material	---	---	0	0	---	---	---	---	---	---
Blavo clay-----	0-5	Clay	CH	A-7-5	0	0	100	100	90-100	75-95	70-87	44-52
	5-16	Clay	CH	A-7-5	0	0	100	100	90-100	75-95	70-85	44-52
	16-24	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	69-83	44-52
	24-30	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	69-83	44-52
	30-36	Clay loam	CL	A-7-6	0	0	100	100	90-100	70-95	44-69	25-44
	36-60	Cemented material	---	---	0	0	---	---	---	---	---	---
501:												
Lofgren clay, occasionally flooded-----	0-5	Clay	CH	A-7-5	0	0	100	100	90-100	75-95	70-87	44-52
	5-12	Clay	CH	A-7-5	0	0	100	100	90-100	75-95	70-85	44-52
	12-22	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	69-83	44-52
	22-30	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	69-83	44-52
	30-41	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	69-83	44-52
	41-45	Clay loam	CL	A-7-6	0	0	100	100	90-100	70-80	37-50	19-29
	45-60	Cemented material	---	---	0	0	---	---	---	---	---	---
Blavo clay, occasionally flooded-----	0-6	Clay	CH	A-7-5	0	0	100	100	90-100	75-95	70-87	44-52
	6-10	Clay	CH	A-7-5	0	0	100	100	90-100	75-95	70-85	44-52
	10-22	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	69-83	44-52
	22-29	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	69-83	44-52
	29-36	Clay loam	CL	A-7-6	0	0	100	100	90-100	70-95	44-69	25-44
	36-42	Cemented material	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
502: Blavo silt loam, overwash, occasionally flooded-----	0-7	Silt loam	CL	A-6	0	0	100	100	90-100	70-90	31-43	12-19
	7-14	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	70-85	44-52
	14-22	Clay	CH	A-7-5	0	0	100	100	90-100	75-95	69-83	44-52
	22-29	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	69-83	44-52
	29-36	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	69-82	44-52
	36-50	Cemented material	---	---	0	0	---	---	---	---	---	---
519: Edjobe silty clay-----	0-8	Silty clay	CH	A-7-5	0	0	100	100	95-100	90-95	52-72	29-40
	8-25	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	51-69	29-41
	25-32	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	51-62	29-37
	32-48	Silty clay loam	CL	A-7-6	0	0	100	100	90-100	70-95	37-52	19-29
	48-60	Clay loam	CL	A-7-6	0	0	100	100	85-100	60-80	35-51	17-29
	60-69	Clay loam	CL	A-6	0	0	100	100	85-100	60-80	35-46	17-25
	69-75	Cemented material	---	---	0	0	---	---	---	---	---	---
520: Esquon clay-----	0-5	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	53-77	29-45
	5-11	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	52-74	29-45
	11-22	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	51-74	29-45
	22-35	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	51-74	29-45
	35-46	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	51-74	29-45
	46-50	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	51-74	29-45
	50-56	Silty clay	CL	A-6	0	0	100	100	90-100	70-95	37-74	18-45
	56-67	Cemented material	---	---	0	0	---	---	---	---	---	---
Neerdobe clay-----	0-5	Clay	CH	A-7-5	0	0	100	100	90-100	75-95	53-77	29-45
	5-15	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	52-74	29-45
	15-23	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	52-74	29-45
	23-28	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	52-74	29-45
	28-33	Clay	CH	A-7-6	0	0	100	100	90-100	70-95	44-74	25-45
	33-38	Loam	CL	A-6	0	0	100	100	85-95	60-75	29-41	12-19
	38-56	Cemented material	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
521: Neerdobe silt loam, overwash---	0-7	Silt loam	CL	A-4	0	0	100	100	90-100	70-90	0-39	NP-17
	7-16	Silt loam	CL	A-6	0	0	100	100	90-100	70-90	0-37	NP-17
	16-20	Loamy very fine sand	ML	A-4	0	0	100	100	90-95	40-60	0-23	NP-6
	20-33	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	53-77	29-45
	33-47	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	52-74	29-45
	47-52	Cemented very gravelly material	---	---	0	0	---	---	---	---	---	---
	52-60	Cemented loamy sand	---	---	0	0	---	---	---	---	---	---
522: Clear Lake silty clay loam, overwash-----	0-6	Silty clay loam	CH	A-7-6	0	0	100	100	95-100	85-95	48-55	25-29
	6-12	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	53-77	29-45
	12-35	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	52-74	29-45
	35-50	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	51-74	29-45
	50-60	Silty clay	CH	A-7-6	0	0	100	100	90-100	70-95	47-74	25-45
	60-70	Silty clay	CH	A-7-6	0	0	100	100	90-100	70-95	47-74	25-45
	70-72	Silty clay	CH	A-7-6	0	0	100	100	90-100	70-95	47-74	25-45
523: Esquon silty clay loam, overwash-----	0-10	Silty clay loam	CL	A-7-6	0	0	100	100	95-100	85-95	47-55	25-29
	10-18	Silty clay	CH	A-7-6	0	0	100	100	95-100	90-95	53-77	29-45
	18-46	Silty clay	CH	A-7-6	0	0	100	100	95-100	90-95	51-74	29-45
	46-60	Cemented material	---	---	0	0	---	---	---	---	---	---
525: Govstanford loam-----	0-3	Loam	CL	A-6	0	0	100	100	60-95	30-75	27-41	9-19
	3-11	Loam	CL	A-6	0	0	100	100	60-95	30-75	27-41	9-19
	11-18	Sandy loam	SM	A-4	0	0	100	100	50-100	5-90	0-29	NP-12
	18-25	Silt loam	CL	A-4	0	0	100	100	50-100	5-90	0-29	NP-12
	25-34	Silt loam	CL-ML	A-7-5	0	0	100	100	50-100	5-100	16-29	2-12
	34-42	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	52-77	29-44
	42-61	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	51-74	29-44
	61-72	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	46-68	25-41

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
526: Govstanford loam, occasionally flooded-----	0-3	Loam	CL	A-6	0	0	100	100	60-95	30-75	27-41	9-19
	3-11	Loam	CL	A-6	0	0	100	100	60-95	30-75	27-41	9-19
	11-18	Sandy loam	SM	A-4	0	0	100	100	50-100	5-90	0-29	NP-12
	18-25	Silt loam	CL	A-4	0	0	100	100	50-100	5-90	0-29	NP-12
	25-34	Silt loam	CL-ML	A-7-5	0	0	100	100	50-100	5-100	16-29	2-12
	34-42	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	52-77	29-44
	42-61	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	51-74	29-44
	61-72	Silty clay	CH	A-7-6	0	0	100	100	90-100	75-95	46-68	25-41
528: Neerdobe clay loam-----	0-10	Clay loam	CL	A-7-6	0	0	100	100	90-100	70-80	45-56	25-29
	10-18	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	52-74	29-45
	18-25	Clay	CH	A-7-6	0	0	100	100	90-100	75-95	51-74	29-45
	25	Cemented material	---	---	0	0	---	---	---	---	---	---
550: Dunstone loam, dry-----	0-2	Loam	ML	A-4	0	0-10	60-100	55-100	40-95	35-75	33-48	7-13
	2-7	Loam	CL	A-6	0	0-10	60-100	55-100	40-95	35-75	27-37	10-15
	7-10	Loam	CL	A-6	0	0-10	60-100	55-100	40-95	35-75	26-38	10-16
	10-16	Loam	CL	A-6	0	0-10	45-100	40-100	35-95	25-80	32-45	15-22
	16	Bedrock	---	---	0	0	---	---	---	---	---	---
Loafercreek silt loam, dry----	0-2	Silt loam	ML	A-7-5	0	0	75-100	70-100	60-95	40-90	35-54	8-14
	2-4	Silt loam	CL	A-4	0	0	75-100	70-100	60-95	40-90	27-42	9-16
	4-11	Loam	CL	A-4	0	0-10	90-100	85-100	70-95	55-75	27-42	9-16
	11-20	Loam	CL	A-6	0	0-10	60-100	55-100	40-95	35-80	28-42	12-21
	20-29	Loam	CL	A-6	0	0-10	60-100	55-100	40-95	35-80	28-42	12-21
	29	Bedrock	---	---	0	0	---	---	---	---	---	---
551: Dunstone loam, dry-----	0-2	Loam	ML	A-4	0	0-10	60-100	55-100	40-95	35-75	33-48	7-13
	2-7	Loam	CL	A-6	0	0-10	60-100	55-100	40-95	35-75	27-37	10-15
	7-10	Loam	CL	A-6	0	0-10	60-100	55-100	40-95	35-75	26-38	10-16
	10-16	Loam	CL	A-6	0	0-10	45-100	40-100	35-95	25-80	32-45	15-22
	16	Bedrock	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
551:												
Lomarica loam-----	0-1	Loam	ML	A-4	0	0-10	95-100	85-100	70-95	55-75	35-52	9-13
	1-5	Loam	ML	A-6	0	0-10	75-100	70-100	60-95	40-75	29-42	12-15
	5-9	Clay loam	CL	A-7-6	0	0-25	30-95	25-90	20-85	15-70	39-52	20-27
	9-12	Clay loam	CL	A-7-6	0	0-25	30-95	25-85	20-80	15-80	42-57	22-32
	12-25	Extremely gravelly clay loam	GC	A-2-7	0	0-25	30	25	20	15-20	44-58	25-32
	25-32	Extremely gravelly clay	GP-GC	A-2-7	0	0-25	15-95	10-90	5-85	5-85	55-66	32-40
	32	Bedrock	---	---	0	0	---	---	---	---	---	---
Argonaut taxadjunct loam-----	0-2	Loam	ML	A-6	0	0	90-95	85-90	70-85	55-70	31-52	11-20
	2-8	Clay loam	CL	A-7-6	0	0	90-95	85-90	75-85	60-70	38-54	19-28
	8-14	Clay	CH	A-7-6	0-15	0-15	75-100	70-100	65-95	50-90	50-62	28-36
	14-20	Clay	CH	A-7-6	0-15	0-15	75-100	70-100	65-95	50-90	50-62	28-36
	20-26	Clay	CH	A-7-6	0	0	90-95	85-90	75-85	60-70	46-58	26-33
	26-30	Clay loam	CL	A-7-6	0	0	90-95	85-90	75-85	60-70	46-58	26-33
	30	Bedrock	---	---	0	0	---	---	---	---	---	---
552:												
Dunstone gravelly loam-----	0-4	Gravelly loam	SM	A-7-6	0	0-10	75-95	70-90	60-85	40-80	33-48	7-13
	4-6	Gravelly loam	CL	A-6	0	0-10	75-95	70-90	60-85	40-80	26-37	9-15
	6-10	Gravelly loam	GC	A-2-6	0	0-10	55-100	50-100	40-95	30-85	27-41	9-19
	10-15	Very gravelly loam	GC	A-2-6	0	0-10	55-100	50-100	40-95	30-85	28-46	12-24
	15-37	Weathered bedrock	---	---	0	0	---	---	---	---	---	---
	37	Bedrock	---	---	0	0	---	---	---	---	---	---
Loafercreek gravelly loam-----	0-0.5	Slightly decomposed plant material	PT	---	0	0	0	0	0	0	---	---
	0.5-2	Gravelly loam	SM	A-5	0	0	75-100	70-95	60-90	40-70	35-54	8-14
	2-6	Gravelly loam	GC	A-6	0	0	60-100	55-95	40-90	25-70	27-42	9-16
	6-12	Loam	CL	A-6	0	0-10	65-95	60-90	50-85	35-70	28-43	12-21
	12-23	Gravelly loam	SC	A-6	0	0-10	65-95	60-90	50-85	35-70	30-42	13-21
	23-31	Gravelly silt loam	CL	A-6	0	0-15	60-95	55-90	40-85	40-70	30-42	13-21
	31-42	Weathered bedrock	---	---	0	0	0	---	---	---	---	---
	42	Bedrock	---	---	0	0	0	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
553:												
Dunstone gravelly loam-----	0-4	Gravelly loam	SM	A-7-6	0	0-10	75-95	70-90	60-85	40-80	33-48	7-13
	4-6	Gravelly loam	CL	A-6	0	0-10	75-95	70-90	60-85	40-80	26-37	9-15
	6-10	Gravelly loam	GC	A-2-6	0	0-10	55-100	50-100	40-95	30-85	27-41	9-19
	10-15	Very gravelly loam	GC	A-2-6	0	0-10	55-100	50-100	40-95	30-85	28-46	12-24
	15-37	Weathered bedrock	---	---	0	0	---	---	---	---	---	---
	37	Bedrock	---	---	0	0	---	---	---	---	---	---
Loafercreek gravelly loam-----	0-0.5	Slightly decomposed plant material	PT	---	0	0	0	0	0	0	---	---
	0.5-2	Gravelly loam	SM	A-5	0	0	75-100	70-95	60-90	40-70	35-54	8-14
	2-6	Gravelly loam	GC	A-6	0	0	60-100	55-95	40-90	25-70	27-42	9-16
	6-12	Loam	CL	A-6	0	0-10	65-95	60-90	50-85	35-70	28-43	12-21
	12-23	Gravelly loam	SC	A-6	0	0-10	65-95	60-90	50-85	35-70	30-42	13-21
	23-31	Gravelly silt loam	CL	A-6	0	0-15	60-95	55-90	40-85	40-70	30-42	13-21
	31-42	Weathered bedrock	---	---	0	0	0	---	---	---	---	---
	42	Bedrock	---	---	0	0	0	---	---	---	---	---
554:												
Dunstone gravelly loam-----	0-4	Gravelly loam	SM	A-7-6	0	0-10	75-95	70-90	60-85	40-80	33-48	7-13
	4-6	Gravelly loam	CL	A-6	0	0-10	75-95	70-90	60-85	40-80	26-37	9-15
	6-10	Gravelly loam	GC	A-2-6	0	0-10	55-100	50-100	40-95	30-85	27-41	9-19
	10-15	Very gravelly loam	GC	A-2-6	0	0-10	55-100	50-100	40-95	30-85	28-46	12-24
	15-37	Weathered bedrock	---	---	0	0	---	---	---	---	---	---
	37	Bedrock	---	---	0	0	---	---	---	---	---	---
Loafercreek gravelly loam-----	0-0.5	Slightly decomposed plant material	PT	---	0	0	0	0	0	0	---	---
	0.5-2	Gravelly loam	SM	A-5	0	0	75-100	70-95	60-90	40-70	35-54	8-14
	2-6	Gravelly loam	GC	A-6	0	0	60-100	55-95	40-90	25-70	27-42	9-16
	6-12	Loam	CL	A-6	0	0-10	65-95	60-90	50-85	35-70	28-43	12-21
	12-23	Gravelly loam	SC	A-6	0	0-10	65-95	60-90	50-85	35-70	30-42	13-21
	23-31	Gravelly silt loam	CL	A-6	0	0-15	60-95	55-90	40-85	40-70	30-42	13-21
	31-42	Weathered bedrock	---	---	0	0	0	---	---	---	---	---
	42	Bedrock	---	---	0	0	0	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
555:												
Dunstone gravelly loam-----	0-4	Gravelly loam	SM	A-7-6	0	0-10	75-95	70-90	60-85	40-80	33-48	7-13
	4-6	Gravelly loam	CL	A-6	0	0-10	75-95	70-90	60-85	40-80	26-37	9-15
	6-10	Gravelly loam	GC	A-2-6	0	0-10	55-100	50-100	40-95	30-85	27-41	9-19
	10-15	Very gravelly loam	GC	A-2-6	0	0-10	55-100	50-100	40-95	30-85	28-46	12-24
	15-37	Weathered bedrock	---	---	0	0	---	---	---	---	---	---
	37	Bedrock	---	---	0	0	---	---	---	---	---	---
Loafercreek gravelly loam-----	0-0.5	Slightly decomposed plant material	PT	---	0	0	0	0	0	0	---	---
	0.5-2	Gravelly loam	SM	A-5	0	0	75-100	70-95	60-90	40-70	35-54	8-14
	2-6	Gravelly loam	GC	A-6	0	0	60-100	55-95	40-90	25-70	27-42	9-16
	6-12	Loam	CL	A-6	0	0-10	65-95	60-90	50-85	35-70	28-43	12-21
	12-23	Gravelly loam	SC	A-6	0	0-10	65-95	60-90	50-85	35-70	30-42	13-21
	23-31	Gravelly silt loam	CL	A-6	0	0-15	60-95	55-90	40-85	40-70	30-42	13-21
	31-42	Weathered bedrock	---	---	0	0	0	---	---	---	---	---
	42	Bedrock	---	---	0	0	0	---	---	---	---	---
556:												
Mounthope loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-3	Loam	CL	A-6	0	0	60-100	55-100	40-95	35-75	29-42	11-17
	3-7	Loam	CL	A-6	0	0	90-100	85-100	70-95	55-75	31-43	13-18
	7-15	Loam	CL	A-6	0	0	90-100	85-100	70-95	55-75	31-43	13-18
	15-22	Gravelly clay loam	CL	A-6	0	0-10	65-95	60-90	55-85	40-70	38-49	19-25
	22-26	Gravelly clay loam	GC	A-6	0	0-10	60-95	60-90	50-85	40-70	38-47	19-25
	26-31	Very gravelly clay loam	GC	A-7-6	0	0-10	40-95	35-90	30-85	25-70	38-47	19-25
	31-42	Very gravelly clay loam	GC	A-6	0	0-10	40-95	35-90	30-85	25-70	37-47	19-25
	42-52	Gravelly clay loam	GC	A-7-6	0	0-10	60-95	55-90	50-85	35-70	30-47	13-25
	52	Bedrock	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
556: Hartsmill gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-3	Gravelly loam	GC	A-4	0	0	60-90	55-85	40-80	35-65	26-34	8-12
	3-6	Very gravelly loam	GC	A-2-6	0	0-25	40-90	35-85	30-80	25-70	29-46	11-21
	6-13	Very gravelly loam	GC	A-2-6	0	0-25	40-90	35-85	30-80	25-70	29-46	11-21
	13-24	Very gravelly loam	GC	A-2-6	0	0-25	40-90	35-85	30-80	25-70	28-42	11-21
	24-35	Very cobbly clay loam	CL	A-7-6	0	0-70	90-100	85-100	75-95	60-80	39-53	19-29
	35-62	Extremely cobbly clay loam	CH	A-7-6	0	0-70	90-100	85-100	75-95	60-80	38-53	19-29
	62	Bedrock	---	---	0	0	---	---	---	---	---	---
557: Mounthope loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-3	Loam	CL	A-6	0	0	60-100	55-100	40-95	35-75	29-42	11-17
	3-7	Loam	CL	A-6	0	0	90-100	85-100	70-95	55-75	31-43	13-18
	7-15	Loam	CL	A-6	0	0	90-100	85-100	70-95	55-75	31-43	13-18
	15-22	Gravelly clay loam	CL	A-6	0	0-10	65-95	60-90	55-85	40-70	38-49	19-25
	22-26	Gravelly clay loam	GC	A-6	0	0-10	60-95	60-90	50-85	40-70	38-47	19-25
	26-31	Very gravelly clay loam	GC	A-7-6	0	0-10	40-95	35-90	30-85	25-70	38-47	19-25
	31-42	Very gravelly clay loam	GC	A-6	0	0-10	40-95	35-90	30-85	25-70	37-47	19-25
	42-52	Gravelly clay loam	GC	A-7-6	0	0-10	60-95	55-90	50-85	35-70	30-47	13-25
	52	Bedrock	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
557: Hartsmill gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-3	Gravelly loam	GC	A-4	0	0	60-90	55-85	40-80	35-65	26-34	8-12
	3-6	Very gravelly loam	GC	A-2-6	0	0-25	40-90	35-85	30-80	25-70	29-46	11-21
	6-13	Very gravelly loam	GC	A-2-6	0	0-25	40-90	35-85	30-80	25-70	29-46	11-21
	13-24	Very gravelly loam	GC	A-2-6	0	0-25	40-90	35-85	30-80	25-70	28-42	11-21
	24-35	Very cobbly clay loam	CL	A-7-6	0	0-70	90-100	85-100	75-95	60-80	39-53	19-29
	35-62	Extremely cobbly clay loam	CH	A-7-6	0	0-70	90-100	85-100	75-95	60-80	38-53	19-29
	62	Bedrock	---	---	0	0	---	---	---	---	---	---
558: Hartsmill gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-3	Gravelly loam	GC	A-4	0	0	60-90	55-85	40-80	35-65	26-34	8-12
	3-6	Very gravelly loam	GC	A-2-6	0	0-25	40-90	35-85	30-80	25-70	29-46	11-21
	6-13	Very gravelly loam	GC	A-2-6	0	0-25	40-90	35-85	30-80	25-70	29-46	11-21
	13-24	Very gravelly loam	GC	A-2-6	0	0-25	40-90	35-85	30-80	25-70	28-42	11-21
	24-35	Very cobbly clay loam	CL	A-7-6	0	0-70	90-100	85-100	75-95	60-80	39-53	19-29
	35-62	Extremely cobbly clay loam	CH	A-7-6	0	0-70	90-100	85-100	75-95	60-80	38-53	19-29
	62	Bedrock	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
558: Mounthope loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-3	Loam	CL	A-6	0	0	60-100	55-100	40-95	35-75	29-42	11-17
	3-7	Loam	CL	A-6	0	0	90-100	85-100	70-95	55-75	31-43	13-18
	7-15	Loam	CL	A-6	0	0	90-100	85-100	70-95	55-75	31-43	13-18
	15-22	Gravelly clay loam	CL	A-6	0	0-10	65-95	60-90	55-85	40-70	38-49	19-25
	22-26	Gravelly clay loam	GC	A-6	0	0-10	60-95	60-90	50-85	40-70	38-47	19-25
	26-31	Very gravelly clay loam	GC	A-7-6	0	0-10	40-95	35-90	30-85	25-70	38-47	19-25
	31-42	Very gravelly clay loam	GC	A-6	0	0-10	40-95	35-90	30-85	25-70	37-47	19-25
	42-52	Gravelly clay loam	GC	A-7-6	0	0-10	60-95	55-90	50-85	35-70	30-47	13-25
	52	Bedrock	---	---	0	0	---	---	---	---	---	---
559: Hartsmill gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-3	Gravelly loam	GC	A-4	0	0	60-90	55-85	40-80	35-65	26-34	8-12
	3-6	Very gravelly loam	GC	A-2-6	0	0-25	40-90	35-85	30-80	25-70	29-46	11-21
	6-13	Very gravelly loam	GC	A-2-6	0	0-25	40-90	35-85	30-80	25-70	29-46	11-21
	13-24	Very gravelly loam	GC	A-2-6	0	0-25	40-90	35-85	30-80	25-70	28-42	11-21
	24-35	Very cobbly clay loam	CL	A-7-6	0	0-70	90-100	85-100	75-95	60-80	39-53	19-29
	35-62	Extremely cobbly clay loam	CH	A-7-6	0	0-70	90-100	85-100	75-95	60-80	38-53	19-29
	62	Bedrock	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
559: Mounthope loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-3	Loam	CL	A-6	0	0	60-100	55-100	40-95	35-75	29-42	11-17
	3-7	Loam	CL	A-6	0	0	90-100	85-100	70-95	55-75	31-43	13-18
	7-15	Loam	CL	A-6	0	0	90-100	85-100	70-95	55-75	31-43	13-18
	15-22	Gravelly clay loam	CL	A-6	0	0-10	65-95	60-90	55-85	40-70	38-49	19-25
	22-26	Gravelly clay loam	GC	A-6	0	0-10	60-95	60-90	50-85	40-70	38-47	19-25
	26-31	Very gravelly clay loam	GC	A-7-6	0	0-10	40-95	35-90	30-85	25-70	38-47	19-25
	31-42	Very gravelly clay loam	GC	A-6	0	0-10	40-95	35-90	30-85	25-70	37-47	19-25
	42-52	Gravelly clay loam	GC	A-7-6	0	0-10	60-95	55-90	50-85	35-70	30-47	13-25
	52	Bedrock	---	---	0	0	---	---	---	---	---	---
560: Hartsmill gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-3	Gravelly loam	GC	A-4	0	0	60-90	55-85	40-80	35-65	26-34	8-12
	3-6	Very gravelly loam	GC	A-2-6	0	0-25	40-90	35-85	30-80	25-70	29-46	11-21
	6-13	Very gravelly loam	GC	A-2-6	0	0-25	40-90	35-85	30-80	25-70	29-46	11-21
	13-24	Very gravelly loam	GC	A-2-6	0	0-25	40-90	35-85	30-80	25-70	28-42	11-21
	24-35	Very cobbly clay loam	CL	A-7-6	0	0-70	90-100	85-100	75-95	60-80	39-53	19-29
	35-62	Extremely cobbly clay loam	CH	A-7-6	0	0-70	90-100	85-100	75-95	60-80	38-53	19-29
	62	Bedrock	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
560: Mounthope loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-3	Loam	CL	A-6	0	0	60-100	55-100	40-95	35-75	29-42	11-17
	3-7	Loam	CL	A-6	0	0	90-100	85-100	70-95	55-75	31-43	13-18
	7-15	Loam	CL	A-6	0	0	90-100	85-100	70-95	55-75	31-43	13-18
	15-22	Gravelly clay loam	CL	A-6	0	0-10	65-95	60-90	55-85	40-70	38-49	19-25
	22-26	Gravelly clay loam	GC	A-6	0	0-10	60-95	60-90	50-85	40-70	38-47	19-25
	26-31	Very gravelly clay loam	GC	A-7-6	0	0-10	40-95	35-90	30-85	25-70	38-47	19-25
	31-42	Very gravelly clay loam	GC	A-6	0	0-10	40-95	35-90	30-85	25-70	37-47	19-25
	42-52	Gravelly clay loam	GC	A-7-6	0	0-10	60-95	55-90	50-85	35-70	30-47	13-25
	52	Bedrock	---	---	0	0	---	---	---	---	---	---
561: Bigridge loam-----	0-1	Moderately decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-5	Loam	ML	A-4	0	0	65-95	60-90	50-85	35-70	27-43	9-17
	5-9	Gravelly loam	GC	A-6	0	0	65-90	60-85	50-80	35-70	31-48	12-21
	9-15	Gravelly loam	CL	A-6	0	0-15	65-95	60-90	50-85	35-80	30-53	12-25
	15-20	Gravelly loam	GC	A-6	0	0-15	65-95	60-90	50-85	35-80	29-47	12-25
	20-27	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40	0-35	26-47	9-25
	27-36	Extremely gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40	0-35	25-47	9-25
	36-51	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40	0-35	25-47	9-25
	51-62	Bedrock	---	---	0	0	---	---	---	---	---	---
Minniecreek loam-----	0-2	Loam	ML	A-6	0	0-10	60-95	55-90	40-85	35-70	27-39	9-13
	2-8	Loam	CL	A-6	0	0-10	50-100	45-100	40-95	30-75	30-40	12-15
	8-15	Loam	CL	A-6	0	0-10	60-100	55-100	40-95	35-75	36-48	16-21
	15-24	Silty clay loam	CL	A-7-6	0	0-10	60-100	55-100	50-95	40-95	35-42	16-21
	24-32	Silty clay loam	CL	A-7-6	0	0	75-100	70-100	65-95	40-95	39-50	20-27
	32-75	Weathered bedrock	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
562: Bigridge loam-----	0-1	Moderately decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-5	Loam	ML	A-4	0	0	65-95	60-90	50-85	35-70	27-43	9-17
	5-9	Gravelly loam	GC	A-6	0	0	65-90	60-85	50-80	35-70	31-48	12-21
	9-15	Gravelly loam	CL	A-6	0	0-15	65-95	60-90	50-85	35-80	30-53	12-25
	15-20	Gravelly loam	GC	A-6	0	0-15	65-95	60-90	50-85	35-80	29-47	12-25
	20-27	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40	0-35	26-47	9-25
	27-36	Extremely gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40	0-35	25-47	9-25
	36-51	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40	0-35	25-47	9-25
	51-62	Bedrock	---	---	0	0	---	---	---	---	---	---
Minniecreek loam-----	0-2	Loam	ML	A-6	0	0-10	60-95	55-90	40-85	35-70	27-39	9-13
	2-8	Loam	CL	A-6	0	0-10	50-100	45-100	40-95	30-75	30-40	12-15
	8-15	Loam	CL	A-6	0	0-10	60-100	55-100	40-95	35-75	36-48	16-21
	15-24	Silty clay loam	CL	A-7-6	0	0-10	60-100	55-100	50-95	40-95	35-42	16-21
	24-32	Silty clay loam	CL	A-7-6	0	0	75-100	70-100	65-95	40-95	39-50	20-27
	32-75	Weathered bedrock	---	---	0	0	---	---	---	---	---	---
563: Bigridge loam-----	0-1	Moderately decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-5	Loam	ML	A-4	0	0	65-95	60-90	50-85	35-70	27-43	9-17
	5-9	Gravelly loam	GC	A-6	0	0	65-90	60-85	50-80	35-70	31-48	12-21
	9-15	Gravelly loam	CL	A-6	0	0-15	65-95	60-90	50-85	35-80	30-53	12-25
	15-20	Gravelly loam	GC	A-6	0	0-15	65-95	60-90	50-85	35-80	29-47	12-25
	20-27	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40	0-35	26-47	9-25
	27-36	Extremely gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40	0-35	25-47	9-25
	36-51	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40	0-35	25-47	9-25
	51-62	Bedrock	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
563: Minniecreek loam-----	0-2	Loam	ML	A-6	0	0-10	60-95	55-90	40-85	35-70	27-39	9-13
	2-8	Loam	CL	A-6	0	0-10	50-100	45-100	40-95	30-75	30-40	12-15
	8-15	Loam	CL	A-6	0	0-10	60-100	55-100	40-95	35-75	36-48	16-21
	15-24	Silty clay loam	CL	A-7-6	0	0-10	60-100	55-100	50-95	40-95	35-42	16-21
	24-32	Silty clay loam	CL	A-7-6	0	0	75-100	70-100	65-95	40-95	39-50	20-27
	32-75	Weathered bedrock	---	---	0	0	---	---	---	---	---	---
564: Bigridge loam-----	0-1	Moderately decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-5	Loam	ML	A-4	0	0	65-95	60-90	50-85	35-70	27-43	9-17
	5-9	Gravelly loam	GC	A-6	0	0	65-90	60-85	50-80	35-70	31-48	12-21
	9-15	Gravelly loam	CL	A-6	0	0-15	65-95	60-90	50-85	35-80	30-53	12-25
	15-20	Gravelly loam	GC	A-6	0	0-15	65-95	60-90	50-85	35-80	29-47	12-25
	20-27	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40	0-35	26-47	9-25
	27-36	Extremely gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40	0-35	25-47	9-25
	36-51	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40	0-35	25-47	9-25
	51-62	Bedrock	---	---	0	0	---	---	---	---	---	---
Minniecreek loam-----	0-2	Loam	ML	A-6	0	0-10	60-95	55-90	40-85	35-70	27-39	9-13
	2-8	Loam	CL	A-6	0	0-10	50-100	45-100	40-95	30-75	30-40	12-15
	8-15	Loam	CL	A-6	0	0-10	60-100	55-100	40-95	35-75	36-48	16-21
	15-24	Silty clay loam	CL	A-7-6	0	0-10	60-100	55-100	50-95	40-95	35-42	16-21
	24-32	Silty clay loam	CL	A-7-6	0	0	75-100	70-100	65-95	40-95	39-50	20-27
	32-75	Weathered bedrock	---	---	0	0	---	---	---	---	---	---
565: Dunstone loam, dry-----	0-2	Loam	ML	A-4	0	0-10	60-100	55-100	40-95	35-75	33-48	7-13
	2-7	Loam	CL	A-6	0	0-10	60-100	55-100	40-95	35-75	27-37	10-15
	7-10	Loam	CL	A-6	0	0-10	60-100	55-100	40-95	35-75	26-38	10-16
	10-16	Loam	CL	A-6	0	0-10	45-100	40-100	35-95	25-80	32-45	15-22
	16	Bedrock	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
565:												
Argonaut taxadjunct loam-----	0-2	Loam	ML	A-6	0	0	90-95	85-90	70-85	55-70	31-52	11-20
	2-8	Clay loam	CL	A-7-6	0	0	90-95	85-90	75-85	60-70	38-54	19-28
	8-14	Clay	CH	A-7-6	0-15	0-15	75-100	70-100	65-95	50-90	50-62	28-36
	14-20	Clay	CH	A-7-6	0-15	0-15	75-100	70-100	65-95	50-90	50-62	28-36
	20-26	Clay	CH	A-7-6	0	0	90-95	85-90	75-85	60-70	46-58	26-33
	26-30	Clay loam	CL	A-7-6	0	0	90-95	85-90	75-85	60-70	46-58	26-33
	30	Bedrock	---	---	0	0	---	---	---	---	---	---
Sunnyslope loam-----	0-2	Loam	ML	A-6	0	0	90-100	85-100	70-95	55-75	27-44	6-12
	2-6	Gravelly loam	CL	A-6	0	0	55-80	50-75	40-70	30-55	27-39	9-13
	6-10	Very cobbly loam	GC	A-2-6	0	0-40	25-55	20-50	15-50	10-40	26-43	9-21
	10-14	Extremely gravelly clay loam	GC	A-2-6	0	0-50	25-55	20-50	15-45	10-40	26-43	9-21
	14	Bedrock	---	---	0	0	---	---	---	---	---	---
566:												
Dunstone loam, dry-----	0-2	Loam	ML	A-4	0	0-10	60-100	55-100	40-95	35-75	33-48	7-13
	2-7	Loam	CL	A-6	0	0-10	60-100	55-100	40-95	35-75	27-37	10-15
	7-10	Loam	CL	A-6	0	0-10	60-100	55-100	40-95	35-75	26-38	10-16
	10-16	Loam	CL	A-6	0	0-10	45-100	40-100	35-95	25-80	32-45	15-22
	16	Bedrock	---	---	0	0	---	---	---	---	---	---
Loafercreek silt loam, dry----	0-2	Silt loam	ML	A-7-5	0	0	75-100	70-100	60-95	40-90	35-54	8-14
	2-4	Silt loam	CL	A-4	0	0	75-100	70-100	60-95	40-90	27-42	9-16
	4-11	Loam	CL	A-4	0	0-10	90-100	85-100	70-95	55-75	27-42	9-16
	11-20	Loam	CL	A-6	0	0-10	60-100	55-100	40-95	35-80	28-42	12-21
	20-29	Loam	CL	A-6	0	0-10	60-100	55-100	40-95	35-80	28-42	12-21
	29	Bedrock	---	---	0	0	---	---	---	---	---	---
Katskillhill loam-----	0-2	Loam	ML	A-4	0	0	95-100	90-100	75-95	55-75	28-48	7-12
	2-8	Loam	CL	A-4	0	0	90-95	85-90	70-85	55-70	27-39	9-13
	8-12	Very gravelly loam	GC	A-2-6	0	0	30-95	25-90	20-85	15-70	32-38	14-17
	12-19	Clay	CH	A-7-6	0	0	75-100	70-100	65-95	50-90	46-62	25-36
	19-29	Clay	CH	A-7-6	0	0	90-100	85-100	75-95	65-90	54-65	32-40
	29-42	Clay	CH	A-7-6	0	0	90-100	85-100	75-95	65-90	54-65	32-40
	42	Bedrock	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
567:												
Dunstone loam, dry-----	0-2	Loam	ML	A-4	0	0-10	60-100	55-100	40-95	35-75	33-48	7-13
	2-7	Loam	CL	A-6	0	0-10	60-100	55-100	40-95	35-75	27-37	10-15
	7-10	Loam	CL	A-6	0	0-10	60-100	55-100	40-95	35-75	26-38	10-16
	10-16	Loam	CL	A-6	0	0-10	45-100	40-100	35-95	25-80	32-45	15-22
	16	Bedrock	---	---	0	0	---	---	---	---	---	---
Loafercreek silt loam, dry----	0-2	Silt loam	ML	A-7-5	0	0	75-100	70-100	60-95	40-90	35-54	8-14
	2-4	Silt loam	CL	A-4	0	0	75-100	70-100	60-95	40-90	27-42	9-16
	4-11	Loam	CL	A-4	0	0-10	90-100	85-100	70-95	55-75	27-42	9-16
	11-20	Loam	CL	A-6	0	0-10	60-100	55-100	40-95	35-80	28-42	12-21
	20-29	Loam	CL	A-6	0	0-10	60-100	55-100	40-95	35-80	28-42	12-21
	29	Bedrock	---	---	0	0	---	---	---	---	---	---
Argonaut taxadjunct loam-----	0-2	Loam	ML	A-6	0	0	90-95	85-90	70-85	55-70	31-52	11-20
	2-8	Clay loam	CL	A-7-6	0	0	90-95	85-90	75-85	60-70	38-54	19-28
	8-14	Clay	CH	A-7-6	0-15	0-15	75-100	70-100	65-95	50-90	50-62	28-36
	14-20	Clay	CH	A-7-6	0-15	0-15	75-100	70-100	65-95	50-90	50-62	28-36
	20-26	Clay	CH	A-7-6	0	0	90-95	85-90	75-85	60-70	46-58	26-33
	26-30	Clay loam	CL	A-7-6	0	0	90-95	85-90	75-85	60-70	46-58	26-33
	30	Bedrock	---	---	0	0	---	---	---	---	---	---
577:												
Parkshill coarse sandy loam----	0-2	Coarse sandy loam	SM	A-2-5	0	0	95-100	90-100	55-95	25-75	27-45	7-11
	2-8	Coarse sandy loam	SC	A-2-4	0	0	95-100	90-100	55-70	25-40	26-34	9-11
	8-18	Coarse sandy loam	SC	A-2-6	0	0	95-100	90-100	55-70	25-40	26-32	10-13
	18-26	Coarse sandy loam	SC	A-2-6	0	0	95-100	90-100	55-70	25-40	26-32	10-13
	26-35	Sandy clay loam	SC	A-6	0	0	80-100	75-100	40-90	25-55	28-35	12-16
	35-53	Sandy clay loam	SC	A-6	0	0	65-100	60-100	35-90	15-55	28-44	12-24
	53-61	Sandy clay loam	SC	A-6	0	0	65-100	60-100	35-90	15-55	26-38	10-18
Flanly loam-----	0-2	Loam	ML	A-4	0	0	80-100	75-100	40-95	25-75	28-38	7-11
	2-5	Sandy loam	SC	A-2-4	0	0	80-100	75-100	40-95	25-75	27-36	9-13
	5-10	Sandy loam	SC	A-2-6	0	0	80-100	75-100	40-100	25-80	30-44	12-19
	10-23	Sandy clay loam	SC	A-6	0	0	75-100	70-100	60-100	25-80	33-49	15-25
	23-26	Bedrock	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
577: Hurleton gravelly sandy loam---	0-3	Gravelly sandy loam	SM	A-1-b	0	0	45-90	40-85	25-60	10-65	27-44	5-11
	3-7	Gravelly sandy loam	SM	A-2-4	0	0	45-90	40-85	25-60	10-65	27-44	6-11
	7-12	Gravelly sandy loam	SC	A-2-4	0	0-60	45-65	40-60	25-40	10-25	26-36	9-13
	12-16	Very gravelly sandy loam	GC	A-2-4	0	0-75	30-55	25-50	20-50	10-40	26-37	10-16
	16-19	Very gravelly sandy loam	GC	A-2-6	0	15-75	45-75	40-70	25-65	15-50	29-43	12-23
	19-25	Extremely gravelly sandy clay loam	GP-GC	A-2-6	0	0-75	25-55	20-50	15-45	5-30	29-46	13-25
	25	Bedrock	---	---	0	0	---	---	---	---	---	---
578: Flanly loam-----	0-2	Loam	ML	A-4	0	0	80-100	75-100	40-95	25-75	28-38	7-11
	2-5	Sandy loam	SC	A-2-4	0	0	80-100	75-100	40-95	25-75	27-36	9-13
	5-10	Sandy loam	SC	A-2-6	0	0	80-100	75-100	40-100	25-80	30-44	12-19
	10-23	Sandy clay loam	SC	A-6	0	0	75-100	70-100	60-100	25-80	33-49	15-25
	23-26	Bedrock	---	---	0	0	---	---	---	---	---	---
Swedesflat cobbly fine sandy loam-----	0-2	Cobbly fine sandy loam	SM	A-4	0	0-25	60-100	55-100	35-95	20-75	26-47	7-13
	2-8	Cobbly sandy loam	SC	A-2-4	0	0-25	45-95	40-90	25-80	10-70	26-36	8-13
	8-12	Sandy loam	SC	A-2-6	0	0	60-100	55-100	35-95	15-75	28-38	12-17
	12-18	Weathered bedrock	---	---	0	0	---	---	---	---	---	---
580: Surnuf taxadjunct loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-5	Loam	MH	A-7-5	0-45	0-15	90-95	85-90	75-85	55-70	40-52	13-17
	5-11	Clay loam	MH	A-7-5	0-45	0-15	50-100	45-100	40-95	30-75	38-63	15-28
	11-18	Silty clay	CH	A-7-6	0-45	0-45	65-100	60-100	55-95	45-90	47-70	25-40
	18-31	Silty clay	CH	A-7-6	0-45	0-45	65-100	60-100	55-95	45-90	47-78	25-47
	31-43	Silty clay	CH	A-7-6	0-45	0-45	65-100	60-100	55-95	45-90	47-78	25-47
	43-54	Very stony silty clay loam	CH	A-7-6	0-65	0-75	65-100	60-100	55-95	45-90	47-78	25-47
	54-67	Silty clay loam	CL	A-7-6	0	0-10	50-100	45-100	40-95	35-90	35-47	17-25

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches					Pct	Pct
	In											
580: Griffgulch very gravelly silt loam-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	3-7	Very gravelly silt loam	GM	A-7-5	0-25	0-45	45-90	40-85	35-85	25-75	41-55	11-18
	7-11	Very cobbly silty clay loam	ML	A-7-5	0-25	10-50	55-80	50-75	45-75	35-70	43-60	18-24
	11-20	Extremely cobbly silty clay loam	CL	A-7-6	0-25	10-50	55-80	50-75	45-75	35-70	43-60	18-24
	20-33	Very cobbly silty clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75	35-75	46-65	25-37
	33-47	Very cobbly clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75	35-75	46-65	25-37
	47-58	Extremely gravelly clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75	35-75	46-65	25-37
	58	Bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop, metavolcanic.												
581: Surnuf taxadjunct loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-5	Loam	MH	A-7-5	0-45	0-15	90-95	85-90	75-85	55-70	40-52	13-17
	5-11	Clay loam	MH	A-7-5	0-45	0-15	50-100	45-100	40-95	30-75	38-63	15-28
	11-18	Silty clay	CH	A-7-6	0-45	0-45	65-100	60-100	55-95	45-90	47-70	25-40
	18-31	Silty clay	CH	A-7-6	0-45	0-45	65-100	60-100	55-95	45-90	47-78	25-47
	31-43	Silty clay	CH	A-7-6	0-45	0-45	65-100	60-100	55-95	45-90	47-78	25-47
	43-54	Very stony silty clay loam	CH	A-7-6	0-65	0-75	65-100	60-100	55-95	45-90	47-78	25-47
	54-67	Silty clay loam	CL	A-7-6	0	0-10	50-100	45-100	40-95	35-90	35-47	17-25

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
581: Griffgulch very gravelly silt loam-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	3-7	Very gravelly silt loam	GM	A-7-5	0-25	0-45	45-90	40-85	35-85	25-75	41-55	11-18
	7-11	Very cobbly silty clay loam	ML	A-7-5	0-25	10-50	55-80	50-75	45-75	35-70	43-60	18-24
	11-20	Extremely cobbly silty clay loam	CL	A-7-6	0-25	10-50	55-80	50-75	45-75	35-70	43-60	18-24
	20-33	Very cobbly silty clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75	35-75	46-65	25-37
	33-47	Very cobbly clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75	35-75	46-65	25-37
	47-58	Extremely gravelly clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75	35-75	46-65	25-37
	58	Bedrock	---	---	---	---	---	---	---	---	---	---
582: Surnuf taxadjunct loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-5	Loam	MH	A-7-5	0-45	0-15	90-95	85-90	75-85	55-70	40-52	13-17
	5-11	Clay loam	MH	A-7-5	0-45	0-15	50-100	45-100	40-95	30-75	38-63	15-28
	11-18	Silty clay	CH	A-7-6	0-45	0-45	65-100	60-100	55-95	45-90	47-70	25-40
	18-31	Silty clay	CH	A-7-6	0-45	0-45	65-100	60-100	55-95	45-90	47-78	25-47
	31-43	Silty clay	CH	A-7-6	0-45	0-45	65-100	60-100	55-95	45-90	47-78	25-47
	43-54	Very stony silty clay loam	CH	A-7-6	0-65	0-75	65-100	60-100	55-95	45-90	47-78	25-47
	54-67	Silty clay loam	CL	A-7-6	0	0-10	50-100	45-100	40-95	35-90	35-47	17-25

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
582: Griffgulch very gravelly silt loam-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	3-7	Very gravelly silt loam	GM	A-7-5	0-25	0-45	45-90	40-85	35-85	25-75	41-55	11-18
	7-11	Very cobbly silty clay loam	ML	A-7-5	0-25	10-50	55-80	50-75	45-75	35-70	43-60	18-24
	11-20	Extremely cobbly silty clay loam	CL	A-7-6	0-25	10-50	55-80	50-75	45-75	35-70	43-60	18-24
	20-33	Very cobbly silty clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75	35-75	46-65	25-37
	33-47	Very cobbly clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75	35-75	46-65	25-37
	47-58	Extremely gravelly clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75	35-75	46-65	25-37
	58	Bedrock	---	---	---	---	---	---	---	---	---	---
583: Surnuf taxadjunct loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-5	Loam	MH	A-7-5	0-45	0-15	90-95	85-90	75-85	55-70	40-52	13-17
	5-11	Clay loam	MH	A-7-5	0-45	0-15	50-100	45-100	40-95	30-75	38-63	15-28
	11-18	Silty clay	CH	A-7-6	0-45	0-45	65-100	60-100	55-95	45-90	47-70	25-40
	18-31	Silty clay	CH	A-7-6	0-45	0-45	65-100	60-100	55-95	45-90	47-78	25-47
	31-43	Silty clay	CH	A-7-6	0-45	0-45	65-100	60-100	55-95	45-90	47-78	25-47
	43-54	Very stony silty clay loam	CH	A-7-6	0-65	0-75	65-100	60-100	55-95	45-90	47-78	25-47
	54-67	Silty clay loam	CL	A-7-6	0	0-10	50-100	45-100	40-95	35-90	35-47	17-25

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
583: Griffgulch very gravelly silt loam-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	3-7	Very gravelly silt loam	GM	A-7-5	0-25	0-45	45-90	40-85	35-85	25-75	41-55	11-18
	7-11	Very cobbly silty clay loam	ML	A-7-5	0-25	10-50	55-80	50-75	45-75	35-70	43-60	18-24
	11-20	Extremely cobbly silty clay loam	CL	A-7-6	0-25	10-50	55-80	50-75	45-75	35-70	43-60	18-24
	20-33	Very cobbly silty clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75	35-75	46-65	25-37
	33-47	Very cobbly clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75	35-75	46-65	25-37
	47-58	Extremely gravelly clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75	35-75	46-65	25-37
	58	Bedrock	---	---	---	---	---	---	---	---	---	---
584: Flanly loam-----	0-2	Loam	ML	A-4	0	0	80-100	75-100	40-95	25-75	28-38	7-11
	2-5	Sandy loam	SC	A-2-4	0	0	80-100	75-100	40-95	25-75	27-36	9-13
	5-10	Sandy loam	SC	A-2-6	0	0	80-100	75-100	40-100	25-80	30-44	12-19
	10-23	Sandy clay loam	SC	A-6	0	0	75-100	70-100	60-100	25-80	33-49	15-25
	23-26	Bedrock	---	---	0	0	---	---	---	---	---	---
Swedesflat cobbly fine sandy loam-----	0-2	Cobbly fine sandy loam	SM	A-4	0	0-25	60-100	55-100	35-95	20-75	26-47	7-13
	2-8	Cobbly sandy loam	SC	A-2-4	0	0-25	45-95	40-90	25-80	10-70	26-36	8-13
	8-12	Sandy loam	SC	A-2-6	0	0	60-100	55-100	35-95	15-75	28-38	12-17
	12-18	Weathered bedrock	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
584: Rackerby very gravelly sandy loam-----	0-2	Very gravelly sandy loam	GM	A-2-4	0-10	0	50-80	45-75	25-70	15-55	25-38	4-10
	2-5	Gravelly sandy loam	SC	A-2-6	0-10	0	45-65	40-60	25-55	10-45	23-37	6-13
	5-13	Very gravelly sandy loam	GC	A-2-6	0	10-80	45-90	40-85	25-80	10-65	21-33	6-13
	13	Bedrock	---	---	---	---	---	---	---	---	---	---
585: Flanly loam-----	0-2	Loam	ML	A-4	0	0	80-100	75-100	40-95	25-75	28-38	7-11
	2-5	Sandy loam	SC	A-2-4	0	0	80-100	75-100	40-95	25-75	27-36	9-13
	5-10	Sandy loam	SC	A-2-6	0	0	80-100	75-100	40-100	25-80	30-44	12-19
	10-23	Sandy clay loam	SC	A-6	0	0	75-100	70-100	60-100	25-80	33-49	15-25
	23-26	Bedrock	---	---	0	0	---	---	---	---	---	---
Sommeyflat loam-----	0-2	Loam	ML	A-6	0	0	75-100	70-100	60-95	40-75	34-47	9-13
	2-9	Loam	CL	A-6	0	0	75-100	70-100	60-95	40-75	26-39	9-14
	9-14	Loam	CL	A-6	0	0	90-100	85-100	70-100	55-80	28-43	12-21
	14-24	Loam	CL	A-6	0	0	80-100	75-100	60-100	45-80	32-45	15-23
	24-31	Loam	CL	A-6	0	0	90-100	85-100	85-100	55-80	28-41	12-21
	31-62	Loam	CL	A-6	0	0	65-100	60-100	40-95	25-75	26-32	10-15
	62-70	Loam	CL	A-4	0	0	65-100	60-100	40-95	25-75	26-32	10-15
586: Sommeyflat loam-----	0-2	Loam	ML	A-6	0	0	75-100	70-100	60-95	40-75	34-47	9-13
	2-9	Loam	CL	A-6	0	0	75-100	70-100	60-95	40-75	26-39	9-14
	9-14	Loam	CL	A-6	0	0	90-100	85-100	70-100	55-80	28-43	12-21
	14-24	Loam	CL	A-6	0	0	80-100	75-100	60-100	45-80	32-45	15-23
	24-31	Loam	CL	A-6	0	0	90-100	85-100	85-100	55-80	28-41	12-21
	31-62	Loam	CL	A-6	0	0	65-100	60-100	40-95	25-75	26-32	10-15
	62-70	Loam	CL	A-4	0	0	65-100	60-100	40-95	25-75	26-32	10-15

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
586: Mounthope loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-3	Loam	CL	A-6	0	0	60-100	55-100	40-95	35-75	29-42	11-17
	3-7	Loam	CL	A-6	0	0	90-100	85-100	70-95	55-75	31-43	13-18
	7-15	Loam	CL	A-6	0	0	90-100	85-100	70-95	55-75	31-43	13-18
	15-22	Gravelly clay loam	CL	A-6	0	0-10	65-95	60-90	55-85	40-70	38-49	19-25
	22-26	Gravelly clay loam	GC	A-6	0	0-10	60-95	60-90	50-85	40-70	38-47	19-25
	26-31	Very gravelly clay loam	GC	A-7-6	0	0-10	40-95	35-90	30-85	25-70	38-47	19-25
	31-42	Very gravelly clay loam	GC	A-6	0	0-10	40-95	35-90	30-85	25-70	37-47	19-25
	42-52	Gravelly clay loam	GC	A-7-6	0	0-10	60-95	55-90	50-85	35-70	30-47	13-25
	52	Bedrock	---	---	0	0	---	---	---	---	---	---
587: Sommeyleft loam-----	0-2	Loam	ML	A-6	0	0	75-100	70-100	60-95	40-75	34-47	9-13
	2-9	Loam	CL	A-6	0	0	75-100	70-100	60-95	40-75	26-39	9-14
	9-14	Loam	CL	A-6	0	0	90-100	85-100	70-100	55-80	28-43	12-21
	14-24	Loam	CL	A-6	0	0	80-100	75-100	60-100	45-80	32-45	15-23
	24-31	Loam	CL	A-6	0	0	90-100	85-100	85-100	55-80	28-41	12-21
	31-62	Loam	CL	A-6	0	0	65-100	60-100	40-95	25-75	26-32	10-15
	62-70	Loam	CL	A-4	0	0	65-100	60-100	40-95	25-75	26-32	10-15
Mounthope loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-3	Loam	CL	A-6	0	0	60-100	55-100	40-95	35-75	29-42	11-17
	3-7	Loam	CL	A-6	0	0	90-100	85-100	70-95	55-75	31-43	13-18
	7-15	Loam	CL	A-6	0	0	90-100	85-100	70-95	55-75	31-43	13-18
	15-22	Gravelly clay loam	CL	A-6	0	0-10	65-95	60-90	55-85	40-70	38-49	19-25
	22-26	Gravelly clay loam	GC	A-6	0	0-10	60-95	60-90	50-85	40-70	38-47	19-25
	26-31	Very gravelly clay loam	GC	A-7-6	0	0-10	40-95	35-90	30-85	25-70	38-47	19-25
	31-42	Very gravelly clay loam	GC	A-6	0	0-10	40-95	35-90	30-85	25-70	37-47	19-25
	42-52	Gravelly clay loam	GC	A-7-6	0	0-10	60-95	55-90	50-85	35-70	30-47	13-25
	52	Bedrock	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
587: Hurleton gravelly sandy loam---	0-3	Gravelly sandy loam	SM	A-1-b	0	0	45-90	40-85	25-60	10-65	27-44	5-11
	3-7	Gravelly sandy loam	SM	A-2-4	0	0	45-90	40-85	25-60	10-65	27-44	6-11
	7-12	Gravelly sandy loam	SC	A-2-4	0	0-60	45-65	40-60	25-40	10-25	26-36	9-13
	12-16	Very gravelly sandy loam	GC	A-2-4	0	0-75	30-55	25-50	20-50	10-40	26-37	10-16
	16-19	Very gravelly sandy loam	GC	A-2-6	0	15-75	45-75	40-70	25-65	15-50	29-43	12-23
	19-25	Extremely gravelly sandy clay loam	GP-GC	A-2-6	0	0-75	25-55	20-50	15-45	5-30	29-46	13-25
	25	Bedrock	---	---	0	0	---	---	---	---	---	---
588: Ultic Haploxeralfs, thermic, high terrace-----	0-2	Loam	CL	A-6	0	0	60-90	55-85	35-80	15-65	26-36	9-11
	2-6	Gravelly loam	GC	A-6	0	0-25	45-80	40-75	25-70	10-55	30-34	12-13
	6-12	Very gravelly loam	GC	A-2-6	0	0-25	40-80	35-75	20-75	10-60	30-41	13-21
	12-20	Very gravelly loam	GC	A-6	0	0-25	40-80	35-75	20-75	10-60	30-41	13-21
	20-32	Extremely gravelly clay loam	GC	A-2-6	0	0-15	30-80	25-75	20-75	10-60	35-46	18-26
	32-39	Extremely gravelly loam	GC	A-2-6	0	0-25	10-40	5-35	0-35	0-30	30-37	13-18
	39-50	Extremely gravelly sandy clay loam	GC	A-2-6	0	0-25	10-40	5-35	0-25	0-20	30-37	13-18

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
589: Ultic Haploxeralfs, thermic, high terrace-----	0-2	Loam	CL	A-6	0	0	60-90	55-85	35-80	15-65	26-36	9-11
	2-6	Gravelly loam	GC	A-6	0	0-25	45-80	40-75	25-70	10-55	30-34	12-13
	6-12	Very gravelly loam	GC	A-2-6	0	0-25	40-80	35-75	20-75	10-60	30-41	13-21
	12-20	Very gravelly loam	GC	A-6	0	0-25	40-80	35-75	20-75	10-60	30-41	13-21
	20-32	Extremely gravelly clay loam	GC	A-2-6	0	0-15	30-80	25-75	20-75	10-60	35-46	18-26
	32-39	Extremely gravelly loam	GC	A-2-6	0	0-25	10-40	5-35	0-35	0-30	30-37	13-18
	39-50	Extremely gravelly sandy clay loam	GC	A-2-6	0	0-25	10-40	5-35	0-25	0-20	30-37	13-18
590: Vistarobles sandy loam-----	0-5	Sandy loam	SC	A-2-6	0	0-15	75-95	70-90	40-85	20-70	27-40	10-18
	5-10	Sandy clay loam	SC	A-6	0	0-15	75-95	70-90	40-85	20-70	27-40	10-18
	10-14	Gravelly clay	CL	A-7-6	0	0	65-100	60-100	55-100	45-95	48-60	28-36
	14-34	Cemented gravelly material	SM	A-1-b	0	10-75	30-75	25-70	15-50	5-20	0-22	NP-6
	34-40	Very cobbly sandy loam	SC	A-2-4	0	0-40	30-80	25-75	15-50	5-30	0-27	NP-10
Redding loam-----	0-4	Loam	CL	A-6	0	0	75-95	70-90	40-85	20-70	24-40	7-18
	4-11	Loam	CL	A-6	0	0	75-95	70-90	40-85	20-70	22-38	7-18
	11-24	Loam	CL	A-6	0	0-10	60-100	55-100	35-95	15-75	25-37	9-18
	24-35	Clay	CH	A-7-6	0	0-30	55-100	50-100	45-100	40-95	49-60	28-36
	35-40	Cemented very gravelly material	---	---	0	---	---	---	---	---	---	---
Argonaut taxadjunct loam-----	0-2	Loam	ML	A-6	0	0	90-95	85-90	70-85	55-70	31-52	11-20
	2-8	Clay loam	CL	A-7-6	0	0	90-95	85-90	75-85	60-70	38-54	19-28
	8-14	Clay	CH	A-7-6	0-15	0-15	75-100	70-100	65-95	50-90	50-62	28-36
	14-20	Clay	CH	A-7-6	0-15	0-15	75-100	70-100	65-95	50-90	50-62	28-36
	20-26	Clay	CH	A-7-6	0	0	90-95	85-90	75-85	60-70	46-58	26-33
	26-30	Clay loam	CL	A-7-6	0	0	90-95	85-90	75-85	60-70	46-58	26-33
	30	Bedrock	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
590: Haploxererts gravelly silty clay-----	0-2	Gravelly silty clay	CH	A-7-6	0	0-10	80-100	75-100	70-100	60-95	43-62	21-33
	2-10	Gravelly clay	CH	A-7-6	0	0	80-95	75-90	65-90	55-85	55-71	32-44
	10-30	Gravelly clay	CH	A-7-6	0	0	75-95	70-90	65-90	50-85	59-75	36-48
	30-33	Silty clay	CH	A-7-6	0	0	90-100	85-100	75-100	65-95	48-63	28-40
	33-41	Silty clay	CH	A-7-6	0	0	90-100	85-100	75-100	65-95	48-63	28-40
	41-44	Bedrock	---	---	0	0	---	---	---	---	---	---
603: Oroville gravelly fine sandy loam-----	0-2	Gravelly fine sandy loam	SC	A-2-6	0	0	75-95	70-90	40-85	20-70	26-38	9-16
	2-6	Gravelly sandy loam	SC	A-2-6	0	0	75-100	70-100	40-85	20-75	27-36	12-17
	6-13	Gravelly clay loam	CL	A-6	0	0	50-95	45-90	35-90	20-70	0-44	NP-24
	13-17	Gravelly clay	CH	A-7-6	0	0	45-95	40-90	35-90	20-85	52-60	32-38
	17-23	Gravelly sandy clay	GC	A-2-7	0	0	45-95	40-90	35-90	20-85	52-60	32-38
	23-60	Cemented extremely gravelly material	---	---	0	0-10	---	---	---	---	---	---
Thermalito sandy loam-----	0-2	Sandy loam	SC	A-2-4	0	0	65-100	60-100	35-95	15-75	23-35	7-13
	2-6	Gravelly sandy loam	SC	A-2-6	0	0	60-95	55-90	35-85	15-70	27-43	12-23
	6-12	Sandy clay loam	SC	A-6	0	0	60-95	55-90	35-85	15-70	27-43	12-23
	12-18	Gravelly sandy clay loam	SC	A-2-6	0	0	60-95	55-90	35-85	15-70	27-43	12-23
	18-23	Gravelly sandy clay loam	SC	A-2-6	0	0	60-95	55-90	35-85	15-70	27-43	12-23
	23-25	Gravelly sandy clay loam	SC	A-2-7	0	0	60-95	55-90	35-85	15-70	27-43	12-23
	25-29	Gravelly clay	CH	A-7-6	0	0	60-100	55-100	50-100	40-95	50-59	31-36
	29-32	Gravelly clay	CH	A-7-6	0	0	60-100	55-100	50-100	40-95	50-59	31-36
	32-60	Cemented gravelly material	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
603: Fernandez sandy loam-----	0-2	Sandy loam	SC	A-2-6	0	0	75-95	70-90	40-85	10-70	26-31	9-12
	2-6	Sandy clay loam	SC	A-2-6	0	0	55-95	50-90	30-90	10-70	27-40	12-21
	6-18	Sandy clay loam	SC	A-2-6	0	0	55-95	50-90	30-90	10-70	27-40	12-21
	18-28	Clay loam	CL	A-7-6	0	0	45-100	40-100	85-100	60-80	42-59	24-36
	28-44	Clay loam	CL	A-7-6	0	0	45-100	40-100	85-100	60-80	42-59	24-36
	44-57	Clay	CH	A-7-6	0	0	45-100	40-100	80-100	60-95	42-59	24-36
	57-65	Gravelly clay	CH	A-7-6	0	0	45-100	40-100	65-100	60-95	42-59	24-36
	65-73	Gravelly clay loam	GC	A-2-7	0	0	45-100	40-100	35-100	30-95	42-59	24-36
	73-85	Cemented gravelly material	---	---	0	0	---	---	---	---	---	---
Thompsonflat fine sandy loam---	0-3	Fine sandy loam	SC	A-4	0	0	65-100	60-100	35-95	15-75	23-34	7-15
	3-7	Fine sandy loam	SC	A-6	0-10	0-25	75-100	70-100	50-95	20-80	27-46	12-27
	7-11	Sandy clay loam	SC	A-6	0-10	0-25	75-100	70-100	50-95	25-80	27-46	12-27
	11-15	Sandy clay	SC	A-7-6	0-10	0-15	75-100	70-100	50-95	25-80	27-49	12-27
	15-22	Gravelly sandy clay	SC	A-2-7	0	0-15	25-100	20-100	10-100	10-95	46-63	27-40
	22-35	Extremely gravelly sandy clay loam	GC	A-2-6	0	0-40	25-85	20-85	10-80	0-50	16-46	2-27
	35-45	Extremely gravelly coarse sandy loam	GC-GM	A-2-4	0	0-40	25-85	20-85	10-80	0-50	16-46	2-27
	45-53	Extremely gravelly coarse sandy loam	GM	A-1-a	0	0-40	25-85	20-85	10-80	0-50	16-46	2-27
	53-66	Extremely gravelly coarse sandy loam	GP-GM	A-1-a	0	0-40	25-85	20-85	10-80	0-50	16-46	2-27
	66-80	Extremely gravelly coarse sandy loam	GP-GM	A-1-a	0	0-40	25-85	20-85	10-80	0-50	16-46	2-27

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
605: Duric Xerarents fine sandy loam, leveled-----	0-5	Fine sandy loam	SC	A-6	0	0	55-100	50-100	30-95	15-80	20-49	6-25
	5-12	Very gravelly sandy loam, clay	SC-SM	A-2-4	0	0	40-90	35-85	20-85	10-80	22-62	7-36
	12-18	Cemented extremely gravelly material	---	---	---	---	---	---	---	---	---	---
Oroville gravelly fine sandy loam-----	0-2	Gravelly fine sandy loam	SC	A-2-6	0	0	75-95	70-90	40-85	20-70	26-38	9-16
	2-6	Gravelly sandy loam	SC	A-2-6	0	0	75-100	70-100	40-85	20-75	27-36	12-17
	6-13	Gravelly clay loam	CL	A-6	0	0	50-95	45-90	35-90	20-70	0-44	NP-24
	13-17	Gravelly clay	CH	A-7-6	0	0	45-95	40-90	35-90	20-85	52-60	32-38
	17-23	Gravelly sandy clay	GC	A-2-7	0	0	45-95	40-90	35-90	20-85	52-60	32-38
	23-60	Cemented extremely gravelly material	---	---	0	0-10	---	---	---	---	---	---
606: Redtough loam-----	0-1	Loam	ML	A-7-5	0	0-10	55-100	50-100	40-95	30-75	32-47	9-14
	1-7	Gravelly loam	CL	A-6	0	0-55	50-100	45-90	40-85	30-70	29-39	12-19
	7-13	Very cobbly loam	CL	A-6	0	0-55	50-100	45-90	40-85	30-70	29-39	12-19
	13	Cemented very gravelly material	---	---	---	---	---	---	---	---	---	---
Fallager loam-----	0-1	Loam	ML	A-7-6	0	0-15	80-95	75-90	60-90	45-85	36-57	13-20
	1-3	Gravelly clay loam	CL	A-7-6	0	0-15	80-95	75-90	65-90	55-85	46-57	25-29
	3-7	Gravelly clay	CH	A-7-6	0	0-15	60-90	55-85	50-85	40-80	51-76	29-44
	7	Cemented gravelly material	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
606:												
Anita, gravelly duripan-----	0-3	Gravelly clay	CH	A-7-5	0	0-30	80-95	75-90	65-90	55-85	55-80	29-44
	3-8	Gravelly clay	CH	A-7-6	0	0-25	75-90	70-85	65-85	50-80	52-75	29-44
	8-15	Gravelly clay	CH	A-7-6	0	0-25	75-90	70-85	65-85	50-80	52-75	29-44
	15	Cemented gravelly material	---	---	0	0-65	---	---	---	---	---	---
609:												
Anita, gravelly duripan-----	0-3	Gravelly clay	CH	A-7-5	0	0-30	80-95	75-90	65-90	55-85	55-80	29-44
	3-8	Gravelly clay	CH	A-7-6	0	0-25	75-90	70-85	65-85	50-80	52-75	29-44
	8-15	Gravelly clay	CH	A-7-6	0	0-25	75-90	70-85	65-85	50-80	52-75	29-44
	15	Cemented gravelly material	---	---	0	0-65	---	---	---	---	---	---
Tuscan taxadjunct gravelly clay loam-----												
	0-2	Gravelly clay loam	CL	A-7-6	0	0-10	75-90	70-85	60-80	35-70	33-51	12-21
	2-5	Gravelly clay	CH	A-7-6	0	0-30	55-90	50-85	40-85	30-80	36-59	17-33
	5-13	Gravelly clay	CH	A-7-6	0	0-30	55-90	50-85	45-85	30-80	46-58	25-34
	13-23	Gravelly clay loam	CH	A-7-6	0	0-30	55-90	50-85	45-85	30-80	46-58	25-34
	23-29	Very gravelly clay loam	GC	A-7-6	0	0-55	40-80	35-75	30-70	25-70	45-57	25-34
	29	Cemented extremely cobble material	---	---	0	---	---	---	---	---	---	---
614:												
Doemill gravelly loam-----	0-1	Gravelly loam	ML	A-4	0-15	0-15	80-100	75-98	60-93	45-74	32-47	9-16
	1-5	Gravelly loam	CL	A-6	0-15	0-30	75-100	70-96	60-96	40-76	29-42	12-21
	5-9	Gravelly loam	CL	A-6	0-15	0-30	75-100	70-96	60-96	40-76	29-42	12-21
	9-14	Gravelly loam	CL	A-6	0-15	0-30	75-100	70-96	60-96	40-76	29-42	12-21
	14	Bedrock	---	---	---	---	---	---	---	---	---	---
Jokerst very cobbly loam-----												
	0-1	Very cobbly loam	ML	A-4	0-45	15-55	65-90	60-85	50-80	35-65	27-42	7-14
	1-4	Gravelly loam	CL	A-6	0-15	0-30	65-90	60-85	50-80	35-65	27-39	10-17
	4	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
615:												
Doemill gravelly loam-----	0-1	Gravelly loam	ML	A-4	0-15	0-15	80-100	75-98	60-93	45-74	32-47	9-16
	1-5	Gravelly loam	CL	A-6	0-15	0-30	75-100	70-96	60-96	40-76	29-42	12-21
	5-9	Gravelly loam	CL	A-6	0-15	0-30	75-100	70-96	60-96	40-76	29-42	12-21
	9-14	Gravelly loam	CL	A-6	0-15	0-30	75-100	70-96	60-96	40-76	29-42	12-21
	14	Bedrock		---	---	---	---	---	---	---	---	---
Jokerst very cobbly loam-----												
0-1	Very cobbly loam	ML	A-4	0-45	15-55	65-90	60-85	50-80	35-65	27-42	7-14	
	1-4	Gravelly loam	CL	A-6	0-15	0-30	65-90	60-85	50-80	35-65	27-39	10-17
	4	Bedrock		---	---	---	---	---	---	---	---	
616:												
Jokerst very cobbly loam-----												
0-1	Very cobbly loam	ML	A-4	0-45	15-55	65-90	60-85	50-80	35-65	27-42	7-14	
	1-4	Gravelly loam	CL	A-6	0-15	0-30	65-90	60-85	50-80	35-65	27-39	10-17
	4	Bedrock		---	---	---	---	---	---	---	---	
Doemill gravelly loam-----												
0-1	Gravelly loam	ML	A-4	0-15	0-15	80-100	75-98	60-93	45-74	32-47	9-16	
	1-5	Gravelly loam	CL	A-6	0-15	0-30	75-100	70-96	60-96	40-76	29-42	12-21
	5-9	Gravelly loam	CL	A-6	0-15	0-30	75-100	70-96	60-96	40-76	29-42	12-21
	9-14	Gravelly loam	CL	A-6	0-15	0-30	75-100	70-96	60-96	40-76	29-42	12-21
	14	Bedrock		---	---	---	---	---	---	---	---	
Typic Haploxeralfs gravelly loam-----												
0-2	Gravelly loam	GC	A-6	0	0-25	65-95	60-90	50-90	25-70	30-39	11-18	
	2-8	Gravelly clay loam	CL	A-6	0-40	0-45	45-95	40-90	30-90	15-85	36-57	15-32
	8-16	Very gravelly clay loam	CL	A-7-6	0-40	0-45	45-95	40-90	30-90	15-85	36-57	15-32
	16-27	Very gravelly clay loam	GC	A-7-6	0-40	0-45	45-95	40-90	30-90	15-85	36-57	15-32
	27-40	Very gravelly clay loam	GC	A-7-6	0-40	0-45	45-95	40-90	30-90	15-85	36-57	15-32
	40	Bedrock		---	---	---	---	---	---	---	---	
617:												
Doemill gravelly loam-----												
0-1	Gravelly loam	ML	A-4	0-15	0-15	80-100	75-98	60-93	45-74	32-47	9-16	
	1-5	Gravelly loam	CL	A-6	0-15	0-30	75-100	70-96	60-96	40-76	29-42	12-21
	5-9	Gravelly loam	CL	A-6	0-15	0-30	75-100	70-96	60-96	40-76	29-42	12-21
	9-14	Gravelly loam	CL	A-6	0-15	0-30	75-100	70-96	60-96	40-76	29-42	12-21
	14	Bedrock		---	---	---	---	---	---	---	---	

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
617:												
Jokerst very cobbly loam-----	0-1	Very cobbly loam	ML	A-4	0-45	15-55	65-90	60-85	50-80	35-65	27-42	7-14
	1-4	Gravelly loam	CL	A-6	0-15	0-30	65-90	60-85	50-80	35-65	27-39	10-17
	4	Bedrock	---	---	---	---	---	---	---	---	---	---
Typic Haploxeralfs gravelly loam-----	0-2	Gravelly loam	GC	A-6	0	0-25	65-95	60-90	50-90	25-70	30-39	11-18
	2-8	Gravelly clay loam	CL	A-6	0-40	0-45	45-95	40-90	30-90	15-85	36-57	15-32
	8-16	Very gravelly clay loam	CL	A-7-6	0-40	0-45	45-95	40-90	30-90	15-85	36-57	15-32
	16-27	Very gravelly clay loam	GC	A-7-6	0-40	0-45	45-95	40-90	30-90	15-85	36-57	15-32
	27-40	Very gravelly clay loam	GC	A-7-6	0-40	0-45	45-95	40-90	30-90	15-85	36-57	15-32
	40	Bedrock	---	---	---	---	---	---	---	---	---	---
619:												
Carhart taxadjunct clay-----	0-4	Clay	CH	A-7-5	0-10	10-50	90-100	85-100	75-100	65-95	65-81	37-44
	4-11	Gravelly clay	CH	A-7-6	0-15	10-75	80-100	75-96	65-96	55-90	51-75	29-44
	11-17	Clay	CH	A-7-6	0-15	10-75	80-100	75-96	65-96	55-90	51-75	29-44
	17	Bedrock	---	---	---	---	---	---	---	---	---	---
620:												
Doemill gravelly loam-----	0-1	Gravelly loam	ML	A-4	0-15	0-15	80-100	75-98	60-93	45-74	32-47	9-16
	1-5	Gravelly loam	CL	A-6	0-15	0-30	75-100	70-96	60-96	40-76	29-42	12-21
	5-9	Gravelly loam	CL	A-6	0-15	0-30	75-100	70-96	60-96	40-76	29-42	12-21
	9-14	Gravelly loam	CL	A-6	0-15	0-30	75-100	70-96	60-96	40-76	29-42	12-21
	14	Bedrock	---	---	---	---	---	---	---	---	---	---
Jokerst very cobbly loam-----	0-1	Very cobbly loam	ML	A-4	0-45	15-55	65-90	60-85	50-80	35-65	27-42	7-14
	1-4	Gravelly loam	CL	A-6	0-15	0-30	65-90	60-85	50-80	35-65	27-39	10-17
	4	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
620: Ultic Haploxeralfs, thermic, gravelly loam-----	0-2	Gravelly loam	MH	A-7-5	0-10	0-25	65-90	60-85	50-80	35-65	39-58	12-18
	2-6	Very cobbly clay loam	CL	A-7-6	0-25	0-55	50-90	45-85	40-80	30-70	32-56	13-28
	6-13	Very cobbly clay loam	CL	A-7-6	0-25	0-55	50-90	45-85	40-80	30-70	32-56	13-28
	13-21	Very cobbly clay loam	CL	A-7-6	0-25	0-55	50-90	45-85	40-80	30-70	32-56	13-28
	21-31	Very cobbly clay loam	CL	A-7-6	0-25	0-55	50-90	45-85	40-80	30-70	31-52	13-28
	31	Bedrock	---	---	---	---	---	---	---	---	---	---
621: Doemill gravelly loam-----	0-1	Gravelly loam	ML	A-4	0-15	0-15	80-100	75-98	60-93	45-74	32-47	9-16
	1-5	Gravelly loam	CL	A-6	0-15	0-30	75-100	70-96	60-96	40-76	29-42	12-21
	5-9	Gravelly loam	CL	A-6	0-15	0-30	75-100	70-96	60-96	40-76	29-42	12-21
	9-14	Gravelly loam	CL	A-6	0-15	0-30	75-100	70-96	60-96	40-76	29-42	12-21
	14	Bedrock	---	---	---	---	---	---	---	---	---	---
Jokerst very cobbly loam-----	0-1	Very cobbly loam	ML	A-4	0-45	15-55	65-90	60-85	50-80	35-65	27-42	7-14
	1-4	Gravelly loam	CL	A-6	0-15	0-30	65-90	60-85	50-80	35-65	27-39	10-17
	4	Bedrock	---	---	---	---	---	---	---	---	---	---
Ultic Haploxeralfs, thermic, gravelly loam-----	0-2	Gravelly loam	MH	A-7-5	0-10	0-25	65-90	60-85	50-80	35-65	39-58	12-18
	2-6	Very cobbly clay loam	CL	A-7-6	0-25	0-55	50-90	45-85	40-80	30-70	32-56	13-28
	6-13	Very cobbly clay loam	CL	A-7-6	0-25	0-55	50-90	45-85	40-80	30-70	32-56	13-28
	13-21	Very cobbly clay loam	CL	A-7-6	0-25	0-55	50-90	45-85	40-80	30-70	32-56	13-28
	21-31	Very cobbly clay loam	CL	A-7-6	0-25	0-55	50-90	45-85	40-80	30-70	31-52	13-28
	31	Bedrock	---	---	---	---	---	---	---	---	---	---
622: Xerorthents, shallow-----	0-2	Gravelly clay loam	CL	A-6	0-30	0-15	65-100	60-97	35-97	15-77	29-44	9-22
	2-5	Gravelly clay loam	CL	A-7-6	0-15	0-40	50-100	45-99	35-99	20-93	33-50	13-27
	5-8	Very cobbly clay loam	CL	A-7-6	0-15	0-40	50-100	45-99	35-99	20-93	33-50	13-27
	8	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
622: Typic Haploxeralfs gravelly loam-----	0-2	Gravelly loam	GC	A-6	0	0-25	65-95	60-90	50-90	25-70	30-39	11-18
	2-8	Gravelly clay loam	CL	A-6	0-40	0-45	45-95	40-90	30-90	15-85	36-57	15-32
	8-16	Very gravelly clay loam	CL	A-7-6	0-40	0-45	45-95	40-90	30-90	15-85	36-57	15-32
	16-27	Very gravelly clay loam	GC	A-7-6	0-40	0-45	45-95	40-90	30-90	15-85	36-57	15-32
	27-40	Very gravelly clay loam	GC	A-7-6	0-40	0-45	45-95	40-90	30-90	15-85	36-57	15-32
	40	Bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop, mudflow-breccia cliffs.												
623: Xerorthents, shallow-----	0-2	Gravelly clay loam	CL	A-6	0-30	0-15	65-100	60-97	35-97	15-77	29-44	9-22
	2-5	Gravelly clay loam	CL	A-7-6	0-15	0-40	50-100	45-99	35-99	20-93	33-50	13-27
	5-8	Very cobbly clay loam	CL	A-7-6	0-15	0-40	50-100	45-99	35-99	20-93	33-50	13-27
	8	Bedrock	---	---	---	---	---	---	---	---	---	---
Typic Haploxeralfs gravelly loam-----	0-2	Gravelly loam	GC	A-6	0	0-25	65-95	60-90	50-90	25-70	30-39	11-18
	2-8	Gravelly clay loam	CL	A-6	0-40	0-45	45-95	40-90	30-90	15-85	36-57	15-32
	8-16	Very gravelly clay loam	CL	A-7-6	0-40	0-45	45-95	40-90	30-90	15-85	36-57	15-32
	16-27	Very gravelly clay loam	GC	A-7-6	0-40	0-45	45-95	40-90	30-90	15-85	36-57	15-32
	27-40	Very gravelly clay loam	GC	A-7-6	0-40	0-45	45-95	40-90	30-90	15-85	36-57	15-32
	40	Bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop, mudflow-breccia cliffs.												

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
624: Ultic Haploxeralfs, mesic, gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-4	Gravelly loam	GC	A-4	0-10	0-15	55-100	50-98	40-93	30-72	25-30	8-11
	4-9	Cobbly loam	CL	A-6	0-30	0-30	65-100	60-98	50-98	35-77	30-39	11-16
	9-23	Very stony clay loam	CL	A-6	0-30	0-30	65-100	60-98	50-98	35-77	30-39	11-16
	23-32	Very cobbly clay loam	CL	A-6	0-30	0-30	65-100	60-98	50-98	35-77	30-39	11-16
	32-42	Extremely stony clay loam	CL	A-6	0-75	0-45	65-95	60-90	55-90	40-85	39-52	16-23
	42	Bedrock	---	---	---	---	---	---	---	---	---	---
Rockstripe very gravelly loam--	0-2	Very gravelly loam	GM	A-7-5	0-30	0-15	45-65	40-60	25-55	15-45	29-52	9-17
	2-6	Very cobbly loam	CL	A-6	0-60	0-45	55-80	50-75	30-70	15-55	28-43	11-18
	6-9	Cobbly loam	CL	A-6	0-60	0-45	55-80	50-75	30-70	15-55	28-43	11-18
	9	Bedrock	---	---	---	---	---	---	---	---	---	---
625: Ultic Haploxeralfs, mesic, gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-4	Gravelly loam	GC	A-4	0-10	0-15	55-100	50-98	40-93	30-72	25-30	8-11
	4-9	Cobbly loam	CL	A-6	0-30	0-30	65-100	60-98	50-98	35-77	30-39	11-16
	9-23	Very stony clay loam	CL	A-6	0-30	0-30	65-100	60-98	50-98	35-77	30-39	11-16
	23-32	Very cobbly clay loam	CL	A-6	0-30	0-30	65-100	60-98	50-98	35-77	30-39	11-16
	32-42	Extremely stony clay loam	CL	A-6	0-75	0-45	65-95	60-90	55-90	40-85	39-52	16-23
	42	Bedrock	---	---	---	---	---	---	---	---	---	---
Rockstripe very gravelly loam--	0-2	Very gravelly loam	GM	A-7-5	0-30	0-15	45-65	40-60	25-55	15-45	29-52	9-17
	2-6	Very cobbly loam	CL	A-6	0-60	0-45	55-80	50-75	30-70	15-55	28-43	11-18
	6-9	Cobbly loam	CL	A-6	0-60	0-45	55-80	50-75	30-70	15-55	28-43	11-18
	9	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
626:												
Ultic Haploxeralfs gravelly loam-----	0-4	Gravelly loam	CL	A-6	0	0	50-80	45-75	40-70	30-55	30-35	11-15
	4-10	Gravelly loam	CL	A-6	0-30	0-30	40-95	35-90	30-90	25-70	33-44	13-22
	10-18	Gravelly clay loam	CL	A-6	0-30	0-30	40-95	35-90	30-90	25-70	33-44	13-22
	18-35	Gravelly clay loam	CL	A-7-6	0-30	0-30	40-80	35-75	30-75	25-70	44-57	22-32
	35-48	Gravelly clay	CH	A-7-6	0-30	0-30	40-80	35-75	30-75	25-70	44-57	22-32
	48	Bedrock	---	---	---	---	---	---	---	---	---	---
Rockstripe very gravelly loam--	0-2	Very gravelly loam	GM	A-7-5	0-30	0-15	45-65	40-60	25-55	15-45	29-52	9-17
	2-6	Very cobbly loam	CL	A-6	0-60	0-45	55-80	50-75	30-70	15-55	28-43	11-18
	6-9	Cobbly loam	CL	A-6	0-60	0-45	55-80	50-75	30-70	15-55	28-43	11-18
	9	Bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop, mudflow-breccia cliffs.												
627:												
Ultic Haploxeralfs gravelly loam-----	0-4	Gravelly loam	CL	A-6	0	0	50-80	45-75	40-70	30-55	30-35	11-15
	4-10	Gravelly loam	CL	A-6	0-30	0-30	40-95	35-90	30-90	25-70	33-44	13-22
	10-18	Gravelly clay loam	CL	A-6	0-30	0-30	40-95	35-90	30-90	25-70	33-44	13-22
	18-35	Gravelly clay loam	CL	A-7-6	0-30	0-30	40-80	35-75	30-75	25-70	44-57	22-32
	35-48	Gravelly clay	CH	A-7-6	0-30	0-30	40-80	35-75	30-75	25-70	44-57	22-32
	48	Bedrock	---	---	---	---	---	---	---	---	---	---
Rockstripe very gravelly loam--	0-2	Very gravelly loam	GM	A-7-5	0-30	0-15	45-65	40-60	25-55	15-45	29-52	9-17
	2-6	Very cobbly loam	CL	A-6	0-60	0-45	55-80	50-75	30-70	15-55	28-43	11-18
	6-9	Cobbly loam	CL	A-6	0-60	0-45	55-80	50-75	30-70	15-55	28-43	11-18
	9	Bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop, mudflow-breccia cliffs.												

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
628: Rockstripe very gravelly loam--	0-2	Very gravelly loam	GM	A-7-5	0-30	0-15	45-65	40-60	25-55	15-45	29-52	9-17
	2-6	Very cobbly loam	CL	A-6	0-60	0-45	55-80	50-75	30-70	15-55	28-43	11-18
	6-9	Cobbly loam	CL	A-6	0-60	0-45	55-80	50-75	30-70	15-55	28-43	11-18
	9	Bedrock	---	---	---	---	---	---	---	---	---	---
Ultic Haploxeralfs gravelly loam-----	0-4	Gravelly loam	CL	A-6	0	0	50-80	45-75	40-70	30-55	30-35	11-15
	4-10	Gravelly loam	CL	A-6	0-30	0-30	40-95	35-90	30-90	25-70	33-44	13-22
	10-18	Gravelly clay loam	CL	A-6	0-30	0-30	40-95	35-90	30-90	25-70	33-44	13-22
	18-35	Gravelly clay loam	CL	A-7-6	0-30	0-30	40-80	35-75	30-75	25-70	44-57	22-32
	35-48	Gravelly clay loam	CH	A-7-6	0-30	0-30	40-80	35-75	30-75	25-70	44-57	22-32
	48	Bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop, mudflow-breccia cliffs.												
629: Slideland gravelly loam-----	0-2	Gravelly loam	ML	A-7-6	0	0	60-100	55-98	40-93	25-73	39-66	12-18
	2-9	Gravelly loam	CL	A-7-6	0-10	0-15	60-95	55-90	40-90	35-85	32-58	13-24
	9-14	Gravelly clay loam	CL	A-7-6	0-10	0-15	60-95	55-90	40-90	35-85	32-58	13-24
	14-21	Gravelly clay loam	CL	A-7-6	0-10	0-15	60-95	55-90	40-90	35-85	32-58	13-24
	21-28	Gravelly clay loam	CL	A-7-6	0-10	0-15	60-95	55-90	40-90	35-85	32-58	13-24
	28-38	Gravelly clay loam	CL	A-7-6	0-10	0-40	60-95	55-90	50-90	40-85	46-63	25-37
	38-51	Gravelly clay loam	CL	A-7-6	0-10	0-40	60-95	55-90	50-90	40-85	46-63	25-37
	51-69	Very cobbly clay loam	CL	A-7-6	0-10	0-40	60-95	55-90	50-90	40-85	46-63	25-37
	69-80	Very cobbly clay loam	CL	A-7-6	0-10	0-40	60-95	55-90	50-90	40-85	46-63	25-37

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
630: Slideland gravelly loam-----	0-2	Gravelly loam	ML	A-7-6	0	0	60-100	55-98	40-93	25-73	39-66	12-18
	2-9	Gravelly loam	CL	A-7-6	0-10	0-15	60-95	55-90	40-90	35-85	32-58	13-24
	9-14	Gravelly clay loam	CL	A-7-6	0-10	0-15	60-95	55-90	40-90	35-85	32-58	13-24
	14-21	Gravelly clay loam	CL	A-7-6	0-10	0-15	60-95	55-90	40-90	35-85	32-58	13-24
	21-28	Gravelly clay loam	CL	A-7-6	0-10	0-15	60-95	55-90	40-90	35-85	32-58	13-24
	28-38	Gravelly clay loam	CL	A-7-6	0-10	0-40	60-95	55-90	50-90	40-85	46-63	25-37
	38-51	Gravelly clay loam	CL	A-7-6	0-10	0-40	60-95	55-90	50-90	40-85	46-63	25-37
	51-69	Very cobbly clay loam	CL	A-7-6	0-10	0-40	60-95	55-90	50-90	40-85	46-63	25-37
	69-80	Very cobbly clay loam	CL	A-7-6	0-10	0-40	60-95	55-90	50-90	40-85	46-63	25-37
631: Slideland gravelly loam-----	0-2	Gravelly loam	ML	A-7-6	0	0	60-100	55-98	40-93	25-73	39-66	12-18
	2-9	Gravelly loam	CL	A-7-6	0-10	0-15	60-95	55-90	40-90	35-85	32-58	13-24
	9-14	Gravelly clay loam	CL	A-7-6	0-10	0-15	60-95	55-90	40-90	35-85	32-58	13-24
	14-21	Gravelly clay loam	CL	A-7-6	0-10	0-15	60-95	55-90	40-90	35-85	32-58	13-24
	21-28	Gravelly clay loam	CL	A-7-6	0-10	0-15	60-95	55-90	40-90	35-85	32-58	13-24
	28-38	Gravelly clay loam	CL	A-7-6	0-10	0-40	60-95	55-90	50-90	40-85	46-63	25-37
	38-51	Gravelly clay loam	CL	A-7-6	0-10	0-40	60-95	55-90	50-90	40-85	46-63	25-37
	51-69	Very cobbly clay loam	CL	A-7-6	0-10	0-40	60-95	55-90	50-90	40-85	46-63	25-37
	69-80	Very cobbly clay loam	CL	A-7-6	0-10	0-40	60-95	55-90	50-90	40-85	46-63	25-37

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
632: Ultic Haploxeralfs, conglomerate, very deep-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-6	Gravelly clay loam	CL	A-6	0-6	0-15	45-80	40-75	30-75	15-60	33-39	13-18
	6-10	Gravelly clay loam	CL	A-6	0-10	0-45	45-90	40-85	30-80	15-70	35-48	14-25
	10-17	Clay loam	CL	A-7-6	0-10	0-45	45-90	40-85	30-80	15-70	35-48	14-25
	17-28	Cobbly clay loam	CL	A-7-6	0-10	0-45	45-90	40-85	30-80	15-70	35-48	14-25
	28-40	Very cobbly clay loam	CL	A-7-6	0-10	0-45	45-90	40-85	30-80	15-70	35-48	14-25
	40-50	Very gravelly clay	CL	A-7-6	0-10	15-60	45-90	40-85	30-85	15-80	33-52	12-23
	50-71	Very gravelly sandy clay loam	SC	A-6	0-10	15-60	45-90	40-85	30-85	15-80	33-52	12-23
	71-84	Very gravelly sandy clay loam	SC	A-6	0-10	15-60	45-90	40-85	30-85	15-80	33-52	12-23
Ultic Haploxeralfs, conglomerate, moderately deep	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-5	Very gravelly loam	GC	A-2-6	0	10-25	40-55	35-50	30-50	25-40	33-36	13-16
	5-10	Very gravelly clay loam	GC	A-6	0	10-50	40-80	35-75	30-75	15-60	36-44	16-22
	10-25	Extremely gravelly sandy clay loam	GC	A-2-6	0	10-50	40-80	35-75	30-75	15-60	36-44	16-22
	25	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
633: Ultic Haploxeralfs, conglomerate, very deep-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-6	Gravelly clay loam	CL	A-6	0-6	0-15	45-80	40-75	30-75	15-60	33-39	13-18
	6-10	Gravelly clay loam	CL	A-6	0-10	0-45	45-90	40-85	30-80	15-70	35-48	14-25
	10-17	Clay loam	CL	A-7-6	0-10	0-45	45-90	40-85	30-80	15-70	35-48	14-25
	17-28	Cobbly clay loam	CL	A-7-6	0-10	0-45	45-90	40-85	30-80	15-70	35-48	14-25
	28-40	Very cobbly clay loam	CL	A-7-6	0-10	0-45	45-90	40-85	30-80	15-70	35-48	14-25
	40-50	Very gravelly clay	CL	A-7-6	0-10	15-60	45-90	40-85	30-85	15-80	33-52	12-23
	50-71	Very gravelly sandy clay loam	SC	A-6	0-10	15-60	45-90	40-85	30-85	15-80	33-52	12-23
	71-84	Very gravelly sandy clay loam	SC	A-6	0-10	15-60	45-90	40-85	30-85	15-80	33-52	12-23
Ultic Haploxeralfs, conglomerate, moderately deep	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-5	Very gravelly loam	GC	A-2-6	0	10-25	40-55	35-50	30-50	25-40	33-36	13-16
	5-10	Very gravelly clay loam	GC	A-6	0	10-50	40-80	35-75	30-75	15-60	36-44	16-22
	10-25	Extremely gravelly sandy clay loam	GC	A-2-6	0	10-50	40-80	35-75	30-75	15-60	36-44	16-22
	25	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
634: Ultic Haploxeralfs, conglomerate, very deep-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-6	Gravelly clay loam	CL	A-6	0-6	0-15	45-80	40-75	30-75	15-60	33-39	13-18
	6-10	Gravelly clay loam	CL	A-6	0-10	0-45	45-90	40-85	30-80	15-70	35-48	14-25
	10-17	Clay loam	CL	A-7-6	0-10	0-45	45-90	40-85	30-80	15-70	35-48	14-25
	17-28	Cobbly clay loam	CL	A-7-6	0-10	0-45	45-90	40-85	30-80	15-70	35-48	14-25
	28-40	Very cobbly clay loam	CL	A-7-6	0-10	0-45	45-90	40-85	30-80	15-70	35-48	14-25
	40-50	Very gravelly clay	CL	A-7-6	0-10	15-60	45-90	40-85	30-85	15-80	33-52	12-23
	50-71	Very gravelly sandy clay loam	SC	A-6	0-10	15-60	45-90	40-85	30-85	15-80	33-52	12-23
	71-84	Very gravelly sandy clay loam	SC	A-6	0-10	15-60	45-90	40-85	30-85	15-80	33-52	12-23
Ultic Haploxeralfs, conglomerate, moderately deep	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-5	Very gravelly loam	GC	A-2-6	0	10-25	40-55	35-50	30-50	25-40	33-36	13-16
	5-10	Very gravelly clay loam	GC	A-6	0	10-50	40-80	35-75	30-75	15-60	36-44	16-22
	10-25	Extremely gravelly sandy clay loam	GC	A-2-6	0	10-50	40-80	35-75	30-75	15-60	36-44	16-22
	25	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
635: Ultic Haploxeralfs, conglomerate, very deep-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-6	Gravelly clay loam	CL	A-6	0-6	0-15	45-80	40-75	30-75	15-60	33-39	13-18
	6-10	Gravelly clay loam	CL	A-6	0-10	0-45	45-90	40-85	30-80	15-70	35-48	14-25
	10-17	Clay loam	CL	A-7-6	0-10	0-45	45-90	40-85	30-80	15-70	35-48	14-25
	17-28	Cobbly clay loam	CL	A-7-6	0-10	0-45	45-90	40-85	30-80	15-70	35-48	14-25
	28-40	Very cobbly clay loam	CL	A-7-6	0-10	0-45	45-90	40-85	30-80	15-70	35-48	14-25
	40-50	Very gravelly clay	CL	A-7-6	0-10	15-60	45-90	40-85	30-85	15-80	33-52	12-23
	50-71	Very gravelly sandy clay loam	SC	A-6	0-10	15-60	45-90	40-85	30-85	15-80	33-52	12-23
	71-84	Very gravelly sandy clay loam	SC	A-6	0-10	15-60	45-90	40-85	30-85	15-80	33-52	12-23
Ultic Haploxeralfs, conglomerate, moderately deep	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-5	Very gravelly loam	GC	A-2-6	0	10-25	40-55	35-50	30-50	25-40	33-36	13-16
	5-10	Very gravelly clay loam	GC	A-6	0	10-50	40-80	35-75	30-75	15-60	36-44	16-22
	10-25	Extremely gravelly sandy clay loam	GC	A-2-6	0	10-50	40-80	35-75	30-75	15-60	36-44	16-22
	25	Bedrock		---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
636: Ultic Haploxeralfs, conglomerate, moderately deep	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-5	Very gravelly loam	GC	A-2-6	0	10-25	40-55	35-50	30-50	25-40	33-36	13-16
	5-10	Very gravelly clay loam	GC	A-6	0	10-50	40-80	35-75	30-75	15-60	36-44	16-22
	10-25	Extremely gravelly sandy clay loam	GC	A-2-6	0	10-50	40-80	35-75	30-75	15-60	36-44	16-22
	25	Bedrock	---	---	---	---	---	---	---	---	---	---
Ultic Haploxeralfs, conglomerate, very deep-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-6	Gravelly clay loam	CL	A-6	0-6	0-15	45-80	40-75	30-75	15-60	33-39	13-18
	6-10	Gravelly clay loam	CL	A-6	0-10	0-45	45-90	40-85	30-80	15-70	35-48	14-25
	10-17	Clay loam	CL	A-7-6	0-10	0-45	45-90	40-85	30-80	15-70	35-48	14-25
	17-28	Cobbly clay loam	CL	A-7-6	0-10	0-45	45-90	40-85	30-80	15-70	35-48	14-25
	28-40	Very cobbly clay loam	CL	A-7-6	0-10	0-45	45-90	40-85	30-80	15-70	35-48	14-25
	40-50	Very gravelly clay	CL	A-7-6	0-10	15-60	45-90	40-85	30-85	15-80	33-52	12-23
	50-71	Very gravelly sandy clay loam	SC	A-6	0-10	15-60	45-90	40-85	30-85	15-80	33-52	12-23
	71-84	Very gravelly sandy clay loam	SC	A-6	0-10	15-60	45-90	40-85	30-85	15-80	33-52	12-23

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
637: Ultic Haploxeralfs, sandstone--	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	0.5-2	Very fine sandy loam	CL-ML	A-4	0	0	75-99	70-94	50-90	25-90	21-35	4-15
	2-6	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95	15-65	21-39	4-18
	6-11	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95	15-65	21-39	4-18
	11-17	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95	15-65	21-39	4-18
	17-24	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95	15-65	21-39	4-18
	24-32	Very gravelly very fine sandy loam	GC	A-2-4	0	0-40	40-100	35-99	35-95	15-65	21-39	4-18
	32-53	Very gravelly sandy clay loam	GC	A-2-6	0-55	15-55	15-50	10-45	5-40	0-25	21-39	4-18
	53-65	Weathered bedrock	---	---	---	---	0	0	0	0	---	---
638: Ultic Haploxeralfs, sandstone--	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	0.5-2	Very fine sandy loam	CL-ML	A-4	0	0	75-99	70-94	50-90	25-90	21-35	4-15
	2-6	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95	15-65	21-39	4-18
	6-11	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95	15-65	21-39	4-18
	11-17	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95	15-65	21-39	4-18
	17-24	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95	15-65	21-39	4-18
	24-32	Very gravelly very fine sandy loam	GC	A-2-4	0	0-40	40-100	35-99	35-95	15-65	21-39	4-18
	32-53	Very gravelly sandy clay loam	GC	A-2-6	0-55	15-55	15-50	10-45	5-40	0-25	21-39	4-18
	53-65	Weathered bedrock	---	---	---	---	0	0	0	0	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
639: Ultic Haploxeralfs, sandstone--	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	0.5-2	Very fine sandy loam	CL-ML	A-4	0	0	75-99	70-94	50-90	25-90	21-35	4-15
	2-6	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95	15-65	21-39	4-18
	6-11	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95	15-65	21-39	4-18
	11-17	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95	15-65	21-39	4-18
	17-24	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95	15-65	21-39	4-18
	24-32	Very gravelly very fine sandy loam	GC	A-2-4	0	0-40	40-100	35-99	35-95	15-65	21-39	4-18
	32-53	Very gravelly sandy clay loam	GC	A-2-6	0-55	15-55	15-50	10-45	5-40	0-25	21-39	4-18
	53-65	Weathered bedrock	---	---	---	---	0	0	0	0	---	---
640: Ultic Haploxeralfs, sandstone--	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	0.5-2	Very fine sandy loam	CL-ML	A-4	0	0	75-99	70-94	50-90	25-90	21-35	4-15
	2-6	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95	15-65	21-39	4-18
	6-11	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95	15-65	21-39	4-18
	11-17	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95	15-65	21-39	4-18
	17-24	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95	15-65	21-39	4-18
	24-32	Very gravelly very fine sandy loam	GC	A-2-4	0	0-40	40-100	35-99	35-95	15-65	21-39	4-18
	32-53	Very gravelly sandy clay loam	GC	A-2-6	0-55	15-55	15-50	10-45	5-40	0-25	21-39	4-18
	53-65	Weathered bedrock	---	---	---	---	0	0	0	0	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
641: Ultic Haploxeralfs, sandstone--	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	0.5-2	Very fine sandy loam	CL-ML	A-4	0	0	75-99	70-94	50-90	25-90	21-35	4-15
	2-6	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95	15-65	21-39	4-18
	6-11	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95	15-65	21-39	4-18
	11-17	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95	15-65	21-39	4-18
	17-24	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95	15-65	21-39	4-18
	24-32	Very gravelly very fine sandy loam	GC	A-2-4	0	0-40	40-100	35-99	35-95	15-65	21-39	4-18
	32-53	Very gravelly sandy clay loam	GC	A-2-6	0-55	15-55	15-50	10-45	5-40	0-25	21-39	4-18
	53-65	Weathered bedrock	---	---	---	---	0	0	0	0	---	---
642: Chinacamp gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-5	Gravelly loam	GM	A-7-5	0-25	0-30	60-95	55-90	40-85	25-70	48-67	13-17
	5-15	Gravelly clay loam	MH	A-7-5	0-50	10-60	45-95	40-90	30-90	15-85	39-67	19-29
	15-29	Gravelly clay loam	CL	A-7-6	0-50	10-60	45-95	40-90	30-90	15-85	37-55	19-30
	29-38	Gravelly clay loam	CH	A-7-6	0-50	10-60	45-95	40-90	30-90	15-85	39-57	19-30
	38-44	Gravelly clay loam	CL	A-7-6	0-50	10-60	45-95	40-90	30-90	15-85	39-57	19-30
	44-61	Extremely stony clay loam	CL	A-7-6	0-50	10-60	45-95	40-90	30-90	15-85	39-57	19-30
	61-72	Very stony clay loam	CL	A-7-6	0-50	10-60	45-95	40-90	30-90	15-85	37-55	19-30

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
643: Chinacamp gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-5	Gravelly loam	GM	A-7-5	0-25	0-30	60-95	55-90	40-85	25-70	48-67	13-17
	5-15	Gravelly clay loam	MH	A-7-5	0-50	10-60	45-95	40-90	30-90	15-85	39-67	19-29
	15-29	Gravelly clay loam	CL	A-7-6	0-50	10-60	45-95	40-90	30-90	15-85	37-55	19-30
	29-38	Gravelly clay loam	CH	A-7-6	0-50	10-60	45-95	40-90	30-90	15-85	39-57	19-30
	38-44	Gravelly clay loam	CL	A-7-6	0-50	10-60	45-95	40-90	30-90	15-85	39-57	19-30
	44-61	Extremely stony clay loam	CL	A-7-6	0-50	10-60	45-95	40-90	30-90	15-85	39-57	19-30
	61-72	Very stony clay loam	CL	A-7-6	0-50	10-60	45-95	40-90	30-90	15-85	37-55	19-30
644: Chinacamp gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-5	Gravelly loam	GM	A-7-5	0-25	0-30	60-95	55-90	40-85	25-70	48-67	13-17
	5-15	Gravelly clay loam	MH	A-7-5	0-50	10-60	45-95	40-90	30-90	15-85	39-67	19-29
	15-29	Gravelly clay loam	CL	A-7-6	0-50	10-60	45-95	40-90	30-90	15-85	37-55	19-30
	29-38	Gravelly clay loam	CH	A-7-6	0-50	10-60	45-95	40-90	30-90	15-85	39-57	19-30
	38-44	Gravelly clay loam	CL	A-7-6	0-50	10-60	45-95	40-90	30-90	15-85	39-57	19-30
	44-61	Extremely stony clay loam	CL	A-7-6	0-50	10-60	45-95	40-90	30-90	15-85	39-57	19-30
	61-72	Very stony clay loam	CL	A-7-6	0-50	10-60	45-95	40-90	30-90	15-85	37-55	19-30

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
645: Chinacamp gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-5	Gravelly loam	GM	A-7-5	0-25	0-30	60-95	55-90	40-85	25-70	48-67	13-17
	5-15	Gravelly clay loam	MH	A-7-5	0-50	10-60	45-95	40-90	30-90	15-85	39-67	19-29
	15-29	Gravelly clay loam	CL	A-7-6	0-50	10-60	45-95	40-90	30-90	15-85	37-55	19-30
	29-38	Gravelly clay loam	CH	A-7-6	0-50	10-60	45-95	40-90	30-90	15-85	39-57	19-30
	38-44	Gravelly clay loam	CL	A-7-6	0-50	10-60	45-95	40-90	30-90	15-85	39-57	19-30
	44-61	Extremely stony clay loam	CL	A-7-6	0-50	10-60	45-95	40-90	30-90	15-85	39-57	19-30
	61-72	Very stony clay loam	CL	A-7-6	0-50	10-60	45-95	40-90	30-90	15-85	37-55	19-30
646: Coalcanyon taxadjunct very gravelly loam-----	0-2	Very gravelly loam	ML	A-7-6	0-60	15-40	55-75	50-70	40-65	30-50	39-58	13-18
	2-6	Very gravelly loam	CL	A-7-6	0-60	25-50	50-95	45-90	40-90	30-70	34-55	16-25
	6-14	Very gravelly clay loam	CL	A-7-6	0-60	25-50	50-95	45-90	40-90	30-70	34-55	16-25
	14-24	Very gravelly clay loam	CL	A-7-6	0-60	25-50	50-95	45-90	40-90	30-70	34-55	16-25
	24-42	Extremely cobbly clay loam	GC	A-7-6	0-60	25-50	50-95	45-90	40-90	30-70	34-55	16-25
	42-54	Very cobbly clay	CH	A-7-6	0-60	15-50	50-95	45-90	40-90	35-85	41-62	21-37
	54-72	Very gravelly clay loam	GC	A-7-6	0-60	15-50	50-95	45-90	40-90	35-85	41-62	21-37

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
647: Coalcanyon taxadjunct very gravelly loam-----	0-2	Very gravelly loam	ML	A-7-6	0-60	15-40	55-75	50-70	40-65	30-50	39-58	13-18
	2-6	Very gravelly loam	CL	A-7-6	0-60	25-50	50-95	45-90	40-90	30-70	34-55	16-25
	6-14	Very gravelly clay loam	CL	A-7-6	0-60	25-50	50-95	45-90	40-90	30-70	34-55	16-25
	14-24	Very gravelly clay loam	CL	A-7-6	0-60	25-50	50-95	45-90	40-90	30-70	34-55	16-25
	24-42	Extremely cobble clay loam	GC	A-7-6	0-60	25-50	50-95	45-90	40-90	30-70	34-55	16-25
	42-54	Very cobbly clay	CH	A-7-6	0-60	15-50	50-95	45-90	40-90	35-85	41-62	21-37
	54-72	Very gravelly clay loam	GC	A-7-6	0-60	15-50	50-95	45-90	40-90	35-85	41-62	21-37
648: Coalcanyon taxadjunct very gravelly loam-----	0-2	Very gravelly loam	ML	A-7-6	0-60	15-40	55-75	50-70	40-65	30-50	39-58	13-18
	2-6	Very gravelly loam	CL	A-7-6	0-60	25-50	50-95	45-90	40-90	30-70	34-55	16-25
	6-14	Very gravelly clay loam	CL	A-7-6	0-60	25-50	50-95	45-90	40-90	30-70	34-55	16-25
	14-24	Very gravelly clay loam	CL	A-7-6	0-60	25-50	50-95	45-90	40-90	30-70	34-55	16-25
	24-42	Extremely cobble clay loam	GC	A-7-6	0-60	25-50	50-95	45-90	40-90	30-70	34-55	16-25
	42-54	Very cobbly clay	CH	A-7-6	0-60	15-50	50-95	45-90	40-90	35-85	41-62	21-37
	54-72	Very gravelly clay loam	GC	A-7-6	0-60	15-50	50-95	45-90	40-90	35-85	41-62	21-37

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
649: Coalcanyon taxadjunct very gravelly loam-----	0-2	Very gravelly loam	ML	A-7-6	0-60	15-40	55-75	50-70	40-65	30-50	39-58	13-18
	2-6	Very gravelly loam	CL	A-7-6	0-60	25-50	50-95	45-90	40-90	30-70	34-55	16-25
	6-14	Very gravelly clay loam	CL	A-7-6	0-60	25-50	50-95	45-90	40-90	30-70	34-55	16-25
	14-24	Very gravelly clay loam	CL	A-7-6	0-60	25-50	50-95	45-90	40-90	30-70	34-55	16-25
	24-42	Extremely cobble clay loam	GC	A-7-6	0-60	25-50	50-95	45-90	40-90	30-70	34-55	16-25
	42-54	Very cobbly clay	CH	A-7-6	0-60	15-50	50-95	45-90	40-90	35-85	41-62	21-37
	54-72	Very gravelly clay loam	GC	A-7-6	0-60	15-50	50-95	45-90	40-90	35-85	41-62	21-37
650: Schott very gravelly loam-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-6	Very gravelly loam	GM	A-7-5	0-10	0-15	55-95	50-90	30-85	15-70	38-56	9-16
	6-13	Very gravelly clay loam	ML	A-7-6	0-15	0-45	25-80	20-75	15-75	5-60	32-58	12-24
	13-22	Very cobbly clay loam	CL	A-7-6	0-15	0-45	25-80	20-75	15-75	5-60	32-58	12-24
	22-40	Extremely gravelly clay loam	GC	A-7-6	0-15	0-45	25-80	20-75	15-75	5-60	29-49	12-25
	40-50	Extremely gravelly sandy clay loam	GC	A-2-7	0-15	0-45	25-80	20-75	15-75	5-60	29-49	12-25
	50	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
651: Schott very gravelly loam-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-6	Very gravelly loam	GM	A-7-5	0-10	0-15	55-95	50-90	30-85	15-70	38-56	9-16
	6-13	Very gravelly clay loam	ML	A-7-6	0-15	0-45	25-80	20-75	15-75	5-60	32-58	12-24
	13-22	Very cobbly clay loam	CL	A-7-6	0-15	0-45	25-80	20-75	15-75	5-60	32-58	12-24
	22-40	Extremely gravelly clay loam	GC	A-7-6	0-15	0-45	25-80	20-75	15-75	5-60	29-49	12-25
	40-50	Extremely gravelly sandy clay loam	GC	A-2-7	0-15	0-45	25-80	20-75	15-75	5-60	29-49	12-25
	50	Bedrock	---	---	---	---	---	---	---	---	---	---
652: Schott very gravelly loam-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-6	Very gravelly loam	GM	A-7-5	0-10	0-15	55-95	50-90	30-85	15-70	38-56	9-16
	6-13	Very gravelly clay loam	ML	A-7-6	0-15	0-45	25-80	20-75	15-75	5-60	32-58	12-24
	13-22	Very cobbly clay loam	CL	A-7-6	0-15	0-45	25-80	20-75	15-75	5-60	32-58	12-24
	22-40	Extremely gravelly clay loam	GC	A-7-6	0-15	0-45	25-80	20-75	15-75	5-60	29-49	12-25
	40-50	Extremely gravelly sandy clay loam	GC	A-2-7	0-15	0-45	25-80	20-75	15-75	5-60	29-49	12-25
	50	Bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop, mudflow breccia.												

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
654:												
Coridge bouldery loam-----	0-1	Bouldery loam	ML	A-7-6	0-45	0-15	55-95	50-90	40-85	30-70	34-49	13-18
	1-6	Gravelly loam	SC	A-6	0-40	0-25	55-80	50-75	40-75	30-60	35-49	17-25
	6-12	Gravelly clay loam	CL	A-7-6	0-40	0-25	55-80	50-75	40-75	30-60	35-49	17-25
	12-19	Very gravelly clay loam	CL	A-7-6	0-40	0-25	55-80	50-75	40-75	30-60	35-49	17-25
	19-24	Very gravelly clay	GC	A-7-6	0-60	10-30	55-90	50-85	45-83	35-80	45-61	25-37
	24	Bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop, Cohasset basalt.												
655:												
Coridge bouldery loam-----	0-1	Bouldery loam	ML	A-7-6	0-45	0-15	55-95	50-90	40-85	30-70	34-49	13-18
	1-6	Gravelly loam	SC	A-6	0-40	0-25	55-80	50-75	40-75	30-60	35-49	17-25
	6-12	Gravelly clay loam	CL	A-7-6	0-40	0-25	55-80	50-75	40-75	30-60	35-49	17-25
	12-19	Very gravelly clay loam	CL	A-7-6	0-40	0-25	55-80	50-75	40-75	30-60	35-49	17-25
	19-24	Very gravelly clay	GC	A-7-6	0-60	10-30	55-90	50-85	45-83	35-80	45-61	25-37
	24	Bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop, Cohasset basalt.												
656:												
Rock outcrop, basalt cliffs.												
Coalcanyon taxadjunct very gravelly loam-----	0-2	Very gravelly loam	ML	A-7-6	0-60	15-40	55-75	50-70	40-65	30-50	39-58	13-18
	2-6	Very gravelly loam	CL	A-7-6	0-60	25-50	50-95	45-90	40-90	30-70	34-55	16-25
	6-14	Very gravelly clay loam	CL	A-7-6	0-60	25-50	50-95	45-90	40-90	30-70	34-55	16-25
	14-24	Very gravelly clay loam	CL	A-7-6	0-60	25-50	50-95	45-90	40-90	30-70	34-55	16-25
	24-42	Extremely cobble clay loam	GC	A-7-6	0-60	25-50	50-95	45-90	40-90	30-70	34-55	16-25
	42-54	Very cobbly clay	CH	A-7-6	0-60	15-50	50-95	45-90	40-90	35-85	41-62	21-37
	54-72	Very gravelly clay loam	GC	A-7-6	0-60	15-50	50-95	45-90	40-90	35-85	41-62	21-37

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
657: Bonneyridge sandy loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-3	Sandy loam	SM	A-2-4	0	0	65-100	60-100	40-65	15-35	20-44	2-9
	3-6	Sandy loam	SM	A-2-4	0	0-10	65-100	60-100	40-60	15-35	20-44	2-9
	6-16	Coarse sandy loam	SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-35	17-42	2-12
	16-22	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-35	17-42	2-12
	22-31	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-60	15-35	17-42	2-12
	31-39	Sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-40	17-42	2-12
	39-56	Loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-75	15-30	16-23	2-6
	56-76	Gravelly loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-60	15-30	16-23	2-6
Chawanakee gravelly sandy loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-5	Gravelly sandy loam	SM	A-2-4	0	0	60-90	55-85	30-60	10-35	0-28	NP-3
	5-11	Gravelly sandy loam	SM	A-2-4	0	0	55-90	50-85	25-60	15-35	0-20	NP-3
	11-19	Gravelly sandy loam	GM	A-1-b	0	0	55-90	50-85	25-60	15-35	0-20	NP-3
	19	Bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop, quartz diorite.												

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
658: Bonneyridge sandy loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-3	Sandy loam	SM	A-2-4	0	0	65-100	60-100	40-65	15-35	20-44	2-9
	3-6	Sandy loam	SM	A-2-4	0	0-10	65-100	60-100	40-60	15-35	20-44	2-9
	6-16	Coarse sandy loam	SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-35	17-42	2-12
	16-22	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-35	17-42	2-12
	22-31	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-60	15-35	17-42	2-12
	31-39	Sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-40	17-42	2-12
	39-56	Loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-75	15-30	16-23	2-6
	56-76	Gravelly loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-60	15-30	16-23	2-6
Chawanakee gravelly sandy loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-5	Gravelly sandy loam	SM	A-2-4	0	0	60-90	55-85	30-60	10-35	0-28	NP-3
	5-11	Gravelly sandy loam	SM	A-2-4	0	0	55-90	50-85	25-60	15-35	0-20	NP-3
	11-19	Gravelly sandy loam	GM	A-1-b	0	0	55-90	50-85	25-60	15-35	0-20	NP-3
	19	Bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop, quartz diorite.												

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
659: Bonneyridge sandy loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-3	Sandy loam	SM	A-2-4	0	0	65-100	60-100	40-65	15-35	20-44	2-9
	3-6	Sandy loam	SM	A-2-4	0	0-10	65-100	60-100	40-60	15-35	20-44	2-9
	6-16	Coarse sandy loam	SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-35	17-42	2-12
	16-22	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-35	17-42	2-12
	22-31	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-60	15-35	17-42	2-12
	31-39	Sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-40	17-42	2-12
	39-56	Loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-75	15-30	16-23	2-6
	56-76	Gravelly loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-60	15-30	16-23	2-6
Chawanakee gravelly sandy loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-5	Gravelly sandy loam	SM	A-2-4	0	0	60-90	55-85	30-60	10-35	0-28	NP-3
	5-11	Gravelly sandy loam	SM	A-2-4	0	0	55-90	50-85	25-60	15-35	0-20	NP-3
	11-19	Gravelly sandy loam	GM	A-1-b	0	0	55-90	50-85	25-60	15-35	0-20	NP-3
	19	Bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop, quartz diorite.												

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
660: Bonneyridge sandy loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-3	Sandy loam	SM	A-2-4	0	0	65-100	60-100	40-65	15-35	20-44	2-9
	3-6	Sandy loam	SM	A-2-4	0	0-10	65-100	60-100	40-60	15-35	20-44	2-9
	6-16	Coarse sandy loam	SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-35	17-42	2-12
	16-22	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-35	17-42	2-12
	22-31	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-60	15-35	17-42	2-12
	31-39	Sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-40	17-42	2-12
	39-56	Loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-75	15-30	16-23	2-6
	56-76	Gravelly loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-60	15-30	16-23	2-6
Chawanakee gravelly sandy loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-5	Gravelly sandy loam	SM	A-2-4	0	0	60-90	55-85	30-60	10-35	0-28	NP-3
	5-11	Gravelly sandy loam	SM	A-2-4	0	0	55-90	50-85	25-60	15-35	0-20	NP-3
	11-19	Gravelly sandy loam	GM	A-1-b	0	0	55-90	50-85	25-60	15-35	0-20	NP-3
	19	Bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop, quartz diorite.												
661: Millerridge gravelly sandy clay loam-----	0-2	Gravelly sandy clay loam	SM	A-7-5	0-15	0-15	65-93	60-88	50-83	25-68	41-53	13-18
	2-6	Stony sandy clay loam	CL	A-7-6	0-15	0-30	60-95	55-90	45-90	25-70	39-55	19-25
	6-12	Cobbly clay loam	CL	A-7-6	0-15	0-30	60-95	55-90	45-90	25-70	39-55	19-25
	12-20	Cobbly clay loam	CL	A-7-6	0-15	10-40	60-95	55-90	45-90	25-85	41-64	21-36
	20-26	Gravelly clay	CH	A-7-6	0-15	10-40	60-95	55-90	45-90	25-85	41-64	21-36
	26	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
661: Boxrobber cobbly sandy clay loam-----	0-2	Cobbly sandy clay loam	SM	A-7-5	0-10	0-40	80-90	75-85	60-80	30-65	42-56	14-20
	2-8	Very gravelly sandy clay loam	SC	A-2-7	0-10	0-40	55-80	50-75	40-75	20-60	39-55	19-25
	8-16	Very gravelly clay loam	GC	A-7-6	0-10	0-40	55-80	50-75	40-75	20-60	39-55	19-25
	16-30	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
	30	Bedrock	---	---	---	---	---	---	---	---	---	---
662: Millerridge gravelly sandy clay loam-----	0-2	Gravelly sandy clay loam	SM	A-7-5	0-15	0-15	65-93	60-88	50-83	25-68	41-53	13-18
	2-6	Stony sandy clay loam	CL	A-7-6	0-15	0-30	60-95	55-90	45-90	25-70	39-55	19-25
	6-12	Cobbly clay loam	CL	A-7-6	0-15	0-30	60-95	55-90	45-90	25-70	39-55	19-25
	12-20	Cobbly clay loam	CL	A-7-6	0-15	10-40	60-95	55-90	45-90	25-85	41-64	21-36
	20-26	Gravelly clay	CH	A-7-6	0-15	10-40	60-95	55-90	45-90	25-85	41-64	21-36
	26	Bedrock	---	---	---	---	---	---	---	---	---	---
Boxrobber cobbly sandy clay loam-----	0-2	Cobbly sandy clay loam	SM	A-7-5	0-10	0-40	80-90	75-85	60-80	30-65	42-56	14-20
	2-8	Very gravelly sandy clay loam	SC	A-2-7	0-10	0-40	55-80	50-75	40-75	20-60	39-55	19-25
	8-16	Very gravelly clay loam	GC	A-7-6	0-10	0-40	55-80	50-75	40-75	20-60	39-55	19-25
	16-30	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
	30	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
663: Millerridge gravelly sandy clay loam-----	0-2	Gravelly sandy clay loam	SM	A-7-5	0-15	0-15	65-93	60-88	50-83	25-68	41-53	13-18
	2-6	Stony sandy clay loam	CL	A-7-6	0-15	0-30	60-95	55-90	45-90	25-70	39-55	19-25
	6-12	Cobbly clay loam	CL	A-7-6	0-15	0-30	60-95	55-90	45-90	25-70	39-55	19-25
	12-20	Cobbly clay loam	CL	A-7-6	0-15	10-40	60-95	55-90	45-90	25-85	41-64	21-36
	20-26	Gravelly clay	CH	A-7-6	0-15	10-40	60-95	55-90	45-90	25-85	41-64	21-36
	26	Bedrock	---	---	---	---	---	---	---	---	---	---
Boxrobber cobbly sandy clay loam-----	0-2	Cobbly sandy clay loam	SM	A-7-5	0-10	0-40	80-90	75-85	60-80	30-65	42-56	14-20
	2-8	Very gravelly sandy clay loam	SC	A-2-7	0-10	0-40	55-80	50-75	40-75	20-60	39-55	19-25
	8-16	Very gravelly clay loam	GC	A-7-6	0-10	0-40	55-80	50-75	40-75	20-60	39-55	19-25
	16-30	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
	30	Bedrock	---	---	---	---	---	---	---	---	---	---
664: Millerridge gravelly sandy clay loam-----	0-2	Gravelly sandy clay loam	SM	A-7-5	0-15	0-15	65-93	60-88	50-83	25-68	41-53	13-18
	2-6	Stony sandy clay loam	CL	A-7-6	0-15	0-30	60-95	55-90	45-90	25-70	39-55	19-25
	6-12	Cobbly clay loam	CL	A-7-6	0-15	0-30	60-95	55-90	45-90	25-70	39-55	19-25
	12-20	Cobbly clay loam	CL	A-7-6	0-15	10-40	60-95	55-90	45-90	25-85	41-64	21-36
	20-26	Gravelly clay	CH	A-7-6	0-15	10-40	60-95	55-90	45-90	25-85	41-64	21-36
	26	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
664: Boxrobber cobbly sandy clay loam-----	0-2	Cobbly sandy clay loam	SM	A-7-5	0-10	0-40	80-90	75-85	60-80	30-65	42-56	14-20
	2-8	Very gravelly sandy clay loam	SC	A-2-7	0-10	0-40	55-80	50-75	40-75	20-60	39-55	19-25
	8-16	Very gravelly clay loam	GC	A-7-6	0-10	0-40	55-80	50-75	40-75	20-60	39-55	19-25
	16-30	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
	30	Bedrock	---	---	---	---	---	---	---	---	---	---
665: Surnuf gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-4	Gravelly loam	GM	A-7-5	0	0-10	60-95	55-90	40-90	35-70	44-59	14-20
	4-9	Gravelly clay loam	MH	A-7-5	0	0-15	65-100	60-100	55-100	40-80	41-63	19-28
	9-16	Gravelly clay loam	CH	A-7-6	0	0-15	65-100	60-100	55-100	40-80	41-63	19-28
	16-27	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-100	40-95	46-68	25-40
	27-29	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-100	40-95	46-68	25-40
	29-56	Gravelly silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85	25-80	46-66	25-40
	56-72	Silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85	25-80	46-66	25-40
Bigridge loam-----	0-1	Moderately decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-5	Loam	ML	A-4	0	0	65-95	60-90	50-85	35-70	27-43	9-17
	5-9	Gravelly loam	GC	A-6	0	0	65-90	60-85	50-80	35-70	31-48	12-21
	9-15	Gravelly loam	CL	A-6	0	0-15	65-95	60-90	50-85	35-80	30-53	12-25
	15-20	Gravelly loam	GC	A-6	0	0-15	65-95	60-90	50-85	35-80	29-47	12-25
	20-27	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40	0-35	26-47	9-25
	27-36	Extremely gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40	0-35	25-47	9-25
	36-51	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40	0-35	25-47	9-25
	51-62	Bedrock	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
666: Surnuf gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-4	Gravelly loam	GM	A-7-5	0	0-10	60-95	55-90	40-90	35-70	44-59	14-20
	4-9	Gravelly clay loam	MH	A-7-5	0	0-15	65-100	60-100	55-100	40-80	41-63	19-28
	9-16	Gravelly clay loam	CH	A-7-6	0	0-15	65-100	60-100	55-100	40-80	41-63	19-28
	16-27	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-100	40-95	46-68	25-40
	27-29	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-100	40-95	46-68	25-40
	29-56	Gravelly silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85	25-80	46-66	25-40
	56-72	Silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85	25-80	46-66	25-40
Bigridge loam-----	0-1	Moderately decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-5	Loam	ML	A-4	0	0	65-95	60-90	50-85	35-70	27-43	9-17
	5-9	Gravelly loam	GC	A-6	0	0	65-90	60-85	50-80	35-70	31-48	12-21
	9-15	Gravelly loam	CL	A-6	0	0-15	65-95	60-90	50-85	35-80	30-53	12-25
	15-20	Gravelly loam	GC	A-6	0	0-15	65-95	60-90	50-85	35-80	29-47	12-25
	20-27	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40	0-35	26-47	9-25
	27-36	Extremely gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40	0-35	25-47	9-25
	36-51	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40	0-35	25-47	9-25
	51-62	Bedrock	---	---	0	0	---	---	---	---	---	---
667: Surnuf gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-4	Gravelly loam	GM	A-7-5	0	0-10	60-95	55-90	40-90	35-70	44-59	14-20
	4-9	Gravelly clay loam	MH	A-7-5	0	0-15	65-100	60-100	55-100	40-80	41-63	19-28
	9-16	Gravelly clay loam	CH	A-7-6	0	0-15	65-100	60-100	55-100	40-80	41-63	19-28
	16-27	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-100	40-95	46-68	25-40
	27-29	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-100	40-95	46-68	25-40
	29-56	Gravelly silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85	25-80	46-66	25-40
	56-72	Silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85	25-80	46-66	25-40

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
667: Bigridge loam-----	0-1	Moderately decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-5	Loam	ML	A-4	0	0	65-95	60-90	50-85	35-70	27-43	9-17
	5-9	Gravelly loam	GC	A-6	0	0	65-90	60-85	50-80	35-70	31-48	12-21
	9-15	Gravelly loam	CL	A-6	0	0-15	65-95	60-90	50-85	35-80	30-53	12-25
	15-20	Gravelly loam	GC	A-6	0	0-15	65-95	60-90	50-85	35-80	29-47	12-25
	20-27	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40	0-35	26-47	9-25
	27-36	Extremely gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40	0-35	25-47	9-25
	36-51	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40	0-35	25-47	9-25
	51-62	Bedrock	---	---	0	0	---	---	---	---	---	---
668: Surnuf gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-4	Gravelly loam	GM	A-7-5	0	0-10	60-95	55-90	40-90	35-70	44-59	14-20
	4-9	Gravelly clay loam	MH	A-7-5	0	0-15	65-100	60-100	55-100	40-80	41-63	19-28
	9-16	Gravelly clay loam	CH	A-7-6	0	0-15	65-100	60-100	55-100	40-80	41-63	19-28
	16-27	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-100	40-95	46-68	25-40
	27-29	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-100	40-95	46-68	25-40
	29-56	Gravelly silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85	25-80	46-66	25-40
	56-72	Silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85	25-80	46-66	25-40
Bigridge loam-----	0-1	Moderately decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-5	Loam	ML	A-4	0	0	65-95	60-90	50-85	35-70	27-43	9-17
	5-9	Gravelly loam	GC	A-6	0	0	65-90	60-85	50-80	35-70	31-48	12-21
	9-15	Gravelly loam	CL	A-6	0	0-15	65-95	60-90	50-85	35-80	30-53	12-25
	15-20	Gravelly loam	GC	A-6	0	0-15	65-95	60-90	50-85	35-80	29-47	12-25
	20-27	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40	0-35	26-47	9-25
	27-36	Extremely gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40	0-35	25-47	9-25
	36-51	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40	0-35	25-47	9-25
	51-62	Bedrock	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches					Pct	Pct
	In											
669:												
Oroshore gravelly loam-----	0-2	Gravelly loam	CL	A-7-6	0	0-15	45-90	40-85	35-80	25-65	34-50	13-19
	2-15	Gravelly clay loam	CL	A-7-6	0-30	0-55	30-80	25-75	20-75	15-60	38-54	19-28
	15-28	Very cobbly clay loam	CL	A-7-6	0-30	0-55	30-80	25-75	20-75	15-60	38-54	19-28
	28-34	Extremely gravelly clay loam	GC	A-2-7	0-30	0-55	30-80	25-75	20-75	15-60	38-54	19-28
	34	Bedrock	---	---	---	---	---	---	---	---	---	---
Mounthope loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-3	Loam	CL	A-6	0	0	60-100	55-100	40-95	35-75	29-42	11-17
	3-7	Loam	CL	A-6	0	0	90-100	85-100	70-95	55-75	31-43	13-18
	7-15	Loam	CL	A-6	0	0	90-100	85-100	70-95	55-75	31-43	13-18
	15-22	Gravelly clay loam	CL	A-6	0	0-10	65-95	60-90	55-85	40-70	38-49	19-25
	22-26	Gravelly clay loam	GC	A-6	0	0-10	60-95	60-90	50-85	40-70	38-47	19-25
	26-31	Very gravelly clay loam	GC	A-7-6	0	0-10	40-95	35-90	30-85	25-70	38-47	19-25
	31-42	Very gravelly clay loam	GC	A-6	0	0-10	40-95	35-90	30-85	25-70	37-47	19-25
	42-52	Gravelly clay loam	GC	A-7-6	0	0-10	60-95	55-90	50-85	35-70	30-47	13-25
	52	Bedrock	---	---	0	0	---	---	---	---	---	---
Dunstone gravelly loam-----	0-4	Gravelly loam	SM	A-7-6	0	0-10	75-95	70-90	60-85	40-80	33-48	7-13
	4-6	Gravelly loam	CL	A-6	0	0-10	75-95	70-90	60-85	40-80	26-37	9-15
	6-10	Gravelly loam	GC	A-2-6	0	0-10	55-100	50-100	40-95	30-85	27-41	9-19
	10-15	Very gravelly loam	GC	A-2-6	0	0-10	55-100	50-100	40-95	30-85	28-46	12-24
	15-37	Weathered bedrock	---	---	0	0	---	---	---	---	---	---
	37	Bedrock	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
670:												
Oroshore gravelly loam-----	0-2	Gravelly loam	CL	A-7-6	0	0-15	45-90	40-85	35-80	25-65	34-50	13-19
	2-15	Gravelly clay loam	CL	A-7-6	0-30	0-55	30-80	25-75	20-75	15-60	38-54	19-28
	15-28	Very cobbly clay loam	CL	A-7-6	0-30	0-55	30-80	25-75	20-75	15-60	38-54	19-28
	28-34	Extremely gravelly clay loam	GC	A-2-7	0-30	0-55	30-80	25-75	20-75	15-60	38-54	19-28
	34	Bedrock	---	---	---	---	---	---	---	---	---	---
Mounthope loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-3	Loam	CL	A-6	0	0	60-100	55-100	40-95	35-75	29-42	11-17
	3-7	Loam	CL	A-6	0	0	90-100	85-100	70-95	55-75	31-43	13-18
	7-15	Loam	CL	A-6	0	0	90-100	85-100	70-95	55-75	31-43	13-18
	15-22	Gravelly clay loam	CL	A-6	0	0-10	65-95	60-90	55-85	40-70	38-49	19-25
	22-26	Gravelly clay loam	GC	A-6	0	0-10	60-95	60-90	50-85	40-70	38-47	19-25
	26-31	Very gravelly clay loam	GC	A-7-6	0	0-10	40-95	35-90	30-85	25-70	38-47	19-25
	31-42	Very gravelly clay loam	GC	A-6	0	0-10	40-95	35-90	30-85	25-70	37-47	19-25
	42-52	Gravelly clay loam	GC	A-7-6	0	0-10	60-95	55-90	50-85	35-70	30-47	13-25
	52	Bedrock	---	---	0	0	---	---	---	---	---	---
Dunstone gravelly loam-----	0-4	Gravelly loam	SM	A-7-6	0	0-10	75-95	70-90	60-85	40-80	33-48	7-13
	4-6	Gravelly loam	CL	A-6	0	0-10	75-95	70-90	60-85	40-80	26-37	9-15
	6-10	Gravelly loam	GC	A-2-6	0	0-10	55-100	50-100	40-95	30-85	27-41	9-19
	10-15	Very gravelly loam	GC	A-2-6	0	0-10	55-100	50-100	40-95	30-85	28-46	12-24
	15-37	Weathered bedrock	---	---	0	0	---	---	---	---	---	---
	37	Bedrock	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
671:												
Oroshore gravelly loam-----	0-2	Gravelly loam	CL	A-7-6	0	0-15	45-90	40-85	35-80	25-65	34-50	13-19
	2-15	Gravelly clay loam	CL	A-7-6	0-30	0-55	30-80	25-75	20-75	15-60	38-54	19-28
	15-28	Very cobbly clay loam	CL	A-7-6	0-30	0-55	30-80	25-75	20-75	15-60	38-54	19-28
	28-34	Extremely gravelly clay loam	GC	A-2-7	0-30	0-55	30-80	25-75	20-75	15-60	38-54	19-28
	34	Bedrock	---	---	---	---	---	---	---	---	---	---
Mounthope loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-3	Loam	CL	A-6	0	0	60-100	55-100	40-95	35-75	29-42	11-17
	3-7	Loam	CL	A-6	0	0	90-100	85-100	70-95	55-75	31-43	13-18
	7-15	Loam	CL	A-6	0	0	90-100	85-100	70-95	55-75	31-43	13-18
	15-22	Gravelly clay loam	CL	A-6	0	0-10	65-95	60-90	55-85	40-70	38-49	19-25
	22-26	Gravelly clay loam	GC	A-6	0	0-10	60-95	60-90	50-85	40-70	38-47	19-25
	26-31	Very gravelly clay loam	GC	A-7-6	0	0-10	40-95	35-90	30-85	25-70	38-47	19-25
	31-42	Very gravelly clay loam	GC	A-6	0	0-10	40-95	35-90	30-85	25-70	37-47	19-25
	42-52	Gravelly clay loam	GC	A-7-6	0	0-10	60-95	55-90	50-85	35-70	30-47	13-25
	52	Bedrock	---	---	0	0	---	---	---	---	---	---
Dunstone gravelly loam-----	0-4	Gravelly loam	SM	A-7-6	0	0-10	75-95	70-90	60-85	40-80	33-48	7-13
	4-6	Gravelly loam	CL	A-6	0	0-10	75-95	70-90	60-85	40-80	26-37	9-15
	6-10	Gravelly loam	GC	A-2-6	0	0-10	55-100	50-100	40-95	30-85	27-41	9-19
	10-15	Very gravelly loam	GC	A-2-6	0	0-10	55-100	50-100	40-95	30-85	28-46	12-24
	15-37	Weathered bedrock	---	---	0	0	---	---	---	---	---	---
	37	Bedrock	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
672: Oroshore gravelly loam-----	0-2	Gravelly loam	CL	A-7-6	0	0-15	45-90	40-85	35-80	25-65	34-50	13-19
	2-15	Gravelly clay loam	CL	A-7-6	0-30	0-55	30-80	25-75	20-75	15-60	38-54	19-28
	15-28	Very cobbly clay loam	CL	A-7-6	0-30	0-55	30-80	25-75	20-75	15-60	38-54	19-28
	28-34	Extremely gravelly clay loam	GC	A-2-7	0-30	0-55	30-80	25-75	20-75	15-60	38-54	19-28
	34	Bedrock	---	---	---	---	---	---	---	---	---	---
Mounthope loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-3	Loam	CL	A-6	0	0	60-100	55-100	40-95	35-75	29-42	11-17
	3-7	Loam	CL	A-6	0	0	90-100	85-100	70-95	55-75	31-43	13-18
	7-15	Loam	CL	A-6	0	0	90-100	85-100	70-95	55-75	31-43	13-18
	15-22	Gravelly clay loam	CL	A-6	0	0-10	65-95	60-90	55-85	40-70	38-49	19-25
	22-26	Gravelly clay loam	GC	A-6	0	0-10	60-95	60-90	50-85	40-70	38-47	19-25
	26-31	Very gravelly clay loam	GC	A-7-6	0	0-10	40-95	35-90	30-85	25-70	38-47	19-25
	31-42	Very gravelly clay loam	GC	A-6	0	0-10	40-95	35-90	30-85	25-70	37-47	19-25
	42-52	Gravelly clay loam	GC	A-7-6	0	0-10	60-95	55-90	50-85	35-70	30-47	13-25
	52	Bedrock	---	---	0	0	---	---	---	---	---	---
Dunstone gravelly loam-----	0-4	Gravelly loam	SM	A-7-6	0	0-10	75-95	70-90	60-85	40-80	33-48	7-13
	4-6	Gravelly loam	CL	A-6	0	0-10	75-95	70-90	60-85	40-80	26-37	9-15
	6-10	Gravelly loam	GC	A-2-6	0	0-10	55-100	50-100	40-95	30-85	27-41	9-19
	10-15	Very gravelly loam	GC	A-2-6	0	0-10	55-100	50-100	40-95	30-85	28-46	12-24
	15-37	Weathered bedrock	---	---	0	0	---	---	---	---	---	---
	37	Bedrock	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
674: Chawanakee gravelly sandy loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-5	Gravelly sandy loam	SM	A-2-4	0	0	60-90	55-85	30-60	10-35	0-28	NP-3
	5-11	Gravelly sandy loam	SM	A-2-4	0	0	55-90	50-85	25-60	15-35	0-20	NP-3
	11-19	Gravelly sandy loam	GM	A-1-b	0	0	55-90	50-85	25-60	15-35	0-20	NP-3
	19	Bedrock	---	---	---	---	---	---	---	---	---	---
Bonneyridge sandy loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-3	Sandy loam	SM	A-2-4	0	0	65-100	60-100	40-65	15-35	20-44	2-9
	3-6	Sandy loam	SM	A-2-4	0	0-10	65-100	60-100	40-60	15-35	20-44	2-9
	6-16	Coarse sandy loam	SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-35	17-42	2-12
	16-22	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-35	17-42	2-12
	22-31	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-60	15-35	17-42	2-12
	31-39	Sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-40	17-42	2-12
	39-56	Loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-75	15-30	16-23	2-6
	56-76	Gravelly loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-60	15-30	16-23	2-6
Rock outcrop, quartz diorite.												

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
675: Clearhayes sandy clay loam-----	0-2	Sandy clay loam	SC	A-7-6	0	0-10	65-100	60-95	35-95	15-75	33-48	12-18
	2-10	Gravelly sandy clay loam	SC	A-7-6	0	0-25	55-95	50-90	40-90	20-70	30-51	11-25
	10-19	Gravelly sandy clay loam	SC	A-2-7	0	0-25	55-95	50-90	40-90	20-70	30-51	11-25
	19-28	Extremely gravelly sandy loam	GC	A-2-6	0-25	10-50	30-75	25-70	15-65	5-40	0-41	NP-21
	28-38	Extremely gravelly loamy coarse sand	GP-GM	A-1-a	0-25	10-50	30-75	25-70	15-65	5-40	0-41	NP-21
	38-46	Extremely gravelly sandy clay loam	GC	A-2-6	0-25	10-50	30-75	25-70	15-65	5-40	0-41	NP-21
	46	Bedrock	---	---	---	---	---	---	---	---	---	---
Hamslough clay-----	0-3	Clay	CH	A-7-6	0	0-25	80-95	75-90	65-90	55-85	55-80	29-44
	3-14	Cobbly clay	CH	A-7-6	0	0-25	80-95	75-90	65-90	55-85	55-80	29-44
	14-19	Extremely gravelly clay	GC	A-2-7	0	0-40	40-90	35-85	30-85	25-80	52-74	29-44
	19-27	Extremely gravelly sandy clay	GC	A-2-7	0	25-40	40-75	35-70	30-70	15-65	41-74	21-44
	27	Cemented material	---	---	---	---	---	---	---	---	---	---
676: Carhart clay-----	0-2	Clay	CH	A-7-5	0	0	90-100	85-100	75-100	65-95	55-79	29-43
	2-12	Clay	CH	A-7-6	0	0	90-100	85-100	75-100	65-95	52-74	29-44
	12-24	Clay	CH	A-7-6	0	0	90-100	85-100	75-100	65-95	52-74	29-44
	24-30	Clay	CH	A-7-6	0	0	90-100	85-100	75-100	65-95	52-74	29-44
	30	Bedrock	---	---	---	---	---	---	---	---	---	---
Anita taxadjunct clay-----	0-2	Clay	CH	A-7-5	0	0	90-100	85-100	75-100	65-95	55-80	29-44
	2-6	Clay	CH	A-7-6	0	0	90-100	85-100	75-100	65-95	52-75	29-44
	6-11	Clay	CH	A-7-6	0	0	90-100	85-100	75-100	65-95	52-73	29-44
	11	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
677:												
Tuscan gravelly loam-----	0-2	Gravelly loam	CL	A-7-6	0	0	65-95	60-90	50-85	25-70	34-47	13-18
	2-4	Clay loam	CL	A-7-6	0	0-40	40-95	35-90	30-90	25-85	41-70	21-40
	4-7	Gravelly clay	CH	A-7-6	0	0-40	40-95	35-90	30-90	25-85	41-70	21-40
	7-11	Cobbly clay	CH	A-7-6	0	0-40	40-95	35-90	30-90	25-85	41-70	21-40
	11	Cemented gravelly material		---	---	0	---	---	---	---	---	---
Fallager loam-----	0-1	Loam	ML	A-7-6	0	0-15	80-95	75-90	60-90	45-85	36-57	13-20
	1-3	Gravelly clay loam	CL	A-7-6	0	0-15	80-95	75-90	65-90	55-85	46-57	25-29
	3-7	Gravelly clay	CH	A-7-6	0	0-15	60-90	55-85	50-85	40-80	51-76	29-44
	7	Cemented gravelly material		---	---	---	---	---	---	---	---	---
Anita, gravelly duripan-----	0-3	Gravelly clay	CH	A-7-5	0	0-30	80-95	75-90	65-90	55-85	55-80	29-44
	3-8	Gravelly clay	CH	A-7-6	0	0-25	75-90	70-85	65-85	50-80	52-75	29-44
	8-15	Gravelly clay	CH	A-7-6	0	0-25	75-90	70-85	65-85	50-80	52-75	29-44
	15	Cemented gravelly material		---	---	0	0-65	---	---	---	---	---
679:												
Lucksev loam-----	0-2	Loam	CL	A-7-6	0	0-25	55-100	50-98	40-94	20-73	36-58	15-24
	2-7	Clay loam	CL	A-7-6	0	0-25	60-100	55-98	40-98	25-93	41-68	21-36
	7-15	Clay	CH	A-7-6	0	0-25	60-100	55-98	40-98	25-93	41-68	21-36
	15	Bedrock		---	---	---	---	---	---	---	---	---
Butteside gravelly loam-----	0-2	Gravelly loam	SC	A-6	0	0-10	75-100	70-95	55-95	25-75	35-58	15-26
	2-8	Clay loam	CL	A-7	0	0-25	75-100	70-95	55-95	25-90	41-66	21-36
	8-13	Clay loam	CL	A-7	0	0-25	75-100	70-95	55-95	25-90	42-67	21-36
	13-27	Clay	CH	A-7	0	0-25	75-100	70-95	55-95	25-90	43-69	22-37
	27	Bedrock		---	---	---	---	---	---	---	---	---
Carhart clay-----	0-2	Clay	CH	A-7-5	0	0	90-100	85-100	75-100	65-95	55-79	29-43
	2-12	Clay	CH	A-7-6	0	0	90-100	85-100	75-100	65-95	52-74	29-44
	12-24	Clay	CH	A-7-6	0	0	90-100	85-100	75-100	65-95	52-74	29-44
	24-30	Clay	CH	A-7-6	0	0	90-100	85-100	75-100	65-95	52-74	29-44
	30	Bedrock		---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
680:												
Lucksev loam-----	0-2	Loam	CL	A-7-6	0	0-25	55-100	50-98	40-94	20-73	36-58	15-24
	2-7	Clay loam	CL	A-7-6	0	0-25	60-100	55-98	40-98	25-93	41-68	21-36
	7-15	Clay	CH	A-7-6	0	0-25	60-100	55-98	40-98	25-93	41-68	21-36
	15	Bedrock	---	---	---	---	---	---	---	---	---	---
Butteside gravelly loam-----	0-2	Gravelly loam	SC	A-6	0	0-10	75-100	70-95	55-95	25-75	35-58	15-26
	2-8	Clay loam	CL	A-7	0	0-25	75-100	70-95	55-95	25-90	41-66	21-36
	8-13	Clay loam	CL	A-7	0	0-25	75-100	70-95	55-95	25-90	42-67	21-36
	13-27	Clay	CH	A-7	0	0-25	75-100	70-95	55-95	25-90	43-69	22-37
	27	Bedrock	---	---	---	---	---	---	---	---	---	---
683:												
Typic Haploxeralfs, magnesian, low elevation-----	0-3	Very gravelly loam	GM	A-7-6	0-15	0-30	50-75	45-70	40-70	35-55	38-59	15-22
	3-10	Very gravelly clay loam	CL	A-7-6	0-25	0-60	50-90	45-85	40-85	35-80	37-80	19-47
	10-21	Very cobbly clay loam	CL	A-7-6	0-25	0-60	50-90	45-85	40-85	35-80	37-80	19-47
	21-30	Very gravelly clay	GC	A-7-6	0-25	0-60	50-90	45-85	40-85	35-80	37-80	19-47
	30	Bedrock	---	---	---	---	---	---	---	---	---	---
Earlal very gravelly loam-----	0-3	Very gravelly loam	GM	A-7-5	0-30	15-40	55-75	50-70	40-65	30-50	39-54	13-18
	3-7	Very gravelly clay loam	GC	A-7-6	0-30	30-55	50-75	45-70	40-70	35-55	41-59	21-29
	7-14	Extremely gravelly clay loam	GC	A-7-6	0-30	30-55	50-75	45-70	40-70	35-55	41-59	21-29
	14	Bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop, serpentinite.												
684:												
Typic Haploxeralfs, magnesian, low elevation-----	0-3	Very gravelly loam	GM	A-7-6	0-15	0-30	50-75	45-70	40-70	35-55	38-59	15-22
	3-10	Very gravelly clay loam	CL	A-7-6	0-25	0-60	50-90	45-85	40-85	35-80	37-80	19-47
	10-21	Very cobbly clay loam	CL	A-7-6	0-25	0-60	50-90	45-85	40-85	35-80	37-80	19-47
	21-30	Very gravelly clay	GC	A-7-6	0-25	0-60	50-90	45-85	40-85	35-80	37-80	19-47
	30	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
684: Earlall very gravelly loam-----	0-3	Very gravelly loam	GM	A-7-5	0-30	15-40	55-75	50-70	40-65	30-50	39-54	13-18
	3-7	Very gravelly clay loam	GC	A-7-6	0-30	30-55	50-75	45-70	40-70	35-55	41-59	21-29
	7-14	Extremely gravelly clay loam	GC	A-7-6	0-30	30-55	50-75	45-70	40-70	35-55	41-59	21-29
	14	Bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop, serpentinite.												
685: Bosquejo taxadjunct gravelly substratum-----	0-3	Clay	CH	A-7-5	0	0	95-100	90-100	80-100	70-95	55-80	29-44
	3-8	Clay	CH	A-7-5	0	0	95-100	90-100	80-100	70-95	55-80	29-44
	8-17	Clay	CH	A-7-6	0	0	90-100	85-100	75-100	65-95	52-75	29-44
	17-27	Clay	CH	A-7-6	0	0	90-100	85-100	75-100	65-95	52-75	29-45
	27-33	Gravelly clay	CH	A-7-6	0	0-25	15-100	10-100	5-100	0-95	30-67	13-41
	33-41	Very gravelly sandy clay	GC	A-2-7	0	0-25	15-100	10-100	5-100	0-95	30-67	13-41
	41-55	Very gravelly sandy clay	GC	A-2-7	0	0-25	15-100	10-100	5-100	0-95	30-67	13-41
	55-70	Sandy loam	SC	A-6	0	0-30	30-100	25-100	15-95	10-60	25-51	9-29
	70-81	Sandy loam	SC	A-4	0	0-30	30-100	25-100	15-95	10-60	25-51	9-29
686: Redsluff taxadjunct clay loam--	0-4	Clay loam	CL	A-7-6	0	0-5	90-100	85-100	80-100	60-80	41-55	19-25
	4-10	Sandy clay	CH	A-7-6	0	0	60-100	55-100	40-100	25-95	38-60	19-33
	10-21	Clay loam	CL	A-7-6	0	0	60-100	55-100	40-100	25-95	38-60	19-33
	21-32	Sandy clay loam	CL	A-7-6	0	0	60-100	55-100	40-100	25-95	38-60	19-33
	32-42	Sandy clay loam	CL	A-7-6	0	0	60-100	55-100	40-100	25-95	38-60	19-33
	42-53	Gravelly clay loam	CL	A-7-6	0	0-40	40-80	35-75	20-75	0-60	0-47	NP-26
	53-68	Extremely gravelly sandy clay loam	GC	A-2-6	0	0-40	40-80	35-75	20-75	0-60	0-47	NP-26
	68-75	Gravelly sandy clay loam	SC	A-6	0	0-40	40-80	35-75	20-75	0-60	0-47	NP-26
	75-80	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
687: Xerorthents, shallow-----	0-2	Gravelly clay loam	CL	A-6	0-30	0-15	65-100	60-97	35-97	15-77	29-44	9-22
	2-5	Gravelly clay loam	CL	A-7-6	0-15	0-40	50-100	45-99	35-99	20-93	33-50	13-27
	5-8	Very cobbly clay loam	CL	A-7-6	0-15	0-40	50-100	45-99	35-99	20-93	33-50	13-27
	8	Bedrock	---	---	---	---	---	---	---	---	---	---
Typic Haploxeralfs gravelly loam-----	0-2	Gravelly loam	GC	A-6	0	0-25	65-95	60-90	50-90	25-70	30-39	11-18
	2-8	Gravelly clay loam	CL	A-6	0-40	0-45	45-95	40-90	30-90	15-85	36-57	15-32
	8-16	Very gravelly clay loam	CL	A-7-6	0-40	0-45	45-95	40-90	30-90	15-85	36-57	15-32
	16-27	Very gravelly clay loam	GC	A-7-6	0-40	0-45	45-95	40-90	30-90	15-85	36-57	15-32
	27-40	Very gravelly clay loam	GC	A-7-6	0-40	0-45	45-95	40-90	30-90	15-85	36-57	15-32
	40	Bedrock	---	---	---	---	---	---	---	---	---	---
700: Retsongulch very gravelly sandy loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Very gravelly sandy loam	GM	A-2-6	0-15	0-15	50-95	45-90	25-85	15-70	25-47	6-14
	3-12	Very gravelly sandy clay loam	GC	A-2-6	0-40	10-50	40-65	35-60	20-55	10-45	24-44	7-18
	12-21	Extremely gravelly sandy clay loam	GC	A-2-6	0-40	10-50	40-65	35-60	20-55	10-45	23-38	7-18
	21-30	Extremely gravelly sandy loam	GC-GM	A-2-4	0-40	10-50	40-65	35-60	20-55	10-45	23-38	7-18
	30	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
700: Flumewall gravelly sandy loam--	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	0.5-2	Gravelly sandy loam	SM	A-2-6	0-30	10-25	15-80	10-75	5-65	0-45	28-45	7-13
	2-7	Very gravelly sandy loam	SC	A-2-6	0-40	15-40	55-80	50-75	30-70	15-45	25-44	9-18
	7-18	Extremely stony sandy clay loam	SC	A-2-6	0-40	15-40	55-80	50-75	30-70	15-45	25-44	9-18
	18	Bedrock	---	---	---	---	---	---	---	---	---	---
701: Powellton gravelly loam-----	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	0.5-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-4	Gravelly loam	GM	A-7-5	0	0	45-95	40-90	25-85	15-70	45-64	11-18
	4-9	Gravelly loam	ML	A-7-5	0	0-10	75-100	70-96	60-96	40-76	33-60	15-24
	9-15	Loam	CL	A-7-6	0	0-10	75-100	70-96	60-96	40-76	33-60	15-24
	15-24	Clay loam	CL	A-7-6	0	0-10	75-100	70-96	60-96	40-76	33-60	15-24
	24-30	Clay loam	CL	A-6	0	0-10	75-100	70-96	60-96	40-76	33-60	15-24
	30-41	Silt loam	CL	A-6	0	0	65-100	60-100	50-100	35-90	27-41	11-21
	41-61	Loam	CL	A-6	0	0	65-100	60-100	50-100	35-90	27-41	11-21
	61-83	Loam	CL	A-4, A-6	0	0	65-100	60-100	50-100	35-90	27-41	11-21
Obstruction gravelly sandy loam	0-4	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	4-7	Gravelly sandy loam	SM	A-2-6	0-10	0-15	50-80	45-75	25-70	15-55	29-47	5-13
	7-10	Gravelly sandy clay loam	GC	A-2-6	0	0-25	60-95	55-90	35-85	15-70	23-43	7-17
	10-18	Gravelly fine sandy loam	SC	A-6	0	0-25	60-95	55-90	35-85	15-70	23-43	7-17
	18-25	Gravelly sandy clay loam	CL	A-6	0	0-25	60-95	55-90	35-85	15-70	23-43	7-17
	25-33	Sandy clay loam	CL	A-6	0	0-25	60-95	55-90	35-85	15-70	23-43	7-17
	33-44	Fine sandy loam	CL	A-6	0	0	50-100	45-96	25-91	15-71	16-31	2-13
	44-64	Gravelly fine sandy loam	SC-SM	A-4	0	0	50-100	45-96	25-91	15-71	16-31	2-13
	64-84	Gravelly fine sandy loam	SM	A-4	0	0	50-100	45-96	25-91	15-71	16-31	2-13
	84	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
702: Cerpone gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-4	Gravelly loam	ML	A-7-5	0-10	0-15	55-80	50-75	40-70	30-55	35-49	10-14
	4-9	Gravelly loam	CL	A-6	0	0-30	60-90	55-85	40-80	35-65	32-45	13-18
	9-17	Cobbly loam	CL	A-6	0	0-30	60-90	55-85	40-80	35-65	32-45	13-18
	17-26	Gravelly clay loam	CL	A-7-6	0-10	0-25	30-80	25-75	20-75	15-70	35-47	17-25
	26-41	Very gravelly silty clay loam	GC	A-7-6	0-10	0-25	30-80	25-75	20-75	15-70	35-47	17-25
	41-57	Very gravelly silty clay loam	GC	A-2-7	0-10	0-25	30-80	25-75	20-75	15-70	35-47	17-25
	57	Bedrock	---	---	---	---	---	---	---	---	---	---
Typic Haploxeralfs, magnesian, very gravelly loam-----	0-3	Very gravelly loam	GC	A-6	0-15	0-30	50-75	45-70	40-70	30-55	32-41	13-20
	3-7	Gravelly clay loam	CL	A-7-6	0-25	0-60	50-90	45-85	40-85	35-80	36-53	16-29
	7-12	Very gravelly clay loam	GC	A-7-6	0-25	0-60	50-90	45-85	40-85	35-80	36-53	16-29
	12-18	Gravelly clay	CH	A-7-6	0-25	0-60	50-90	45-85	40-85	35-80	36-53	16-29
	18-24	Very gravelly clay	CH	A-7-6	0-25	0-60	50-90	45-85	40-85	35-80	36-53	16-29
	24-32	Very gravelly clay	GC	A-7-6	0-25	0-60	30-65	25-60	20-60	15-55	44-57	22-32
	32-42	Very gravelly clay	GC	A-7-6	0-25	0-60	30-65	25-60	20-60	15-55	44-57	22-32
	42-54	Extremely cobbly clay loam	GC	A-7-6	0-25	0-60	30-65	25-60	20-60	15-55	44-57	22-32
	54	Bedrock	---	---	---	---	---	---	---	---	---	---
Earlal very gravelly loam-----	0-3	Very gravelly loam	GM	A-7-5	0-30	15-40	55-75	50-70	40-65	30-50	39-54	13-18
	3-7	Very gravelly clay loam	GC	A-7-6	0-30	30-55	50-75	45-70	40-70	35-55	41-59	21-29
	7-14	Extremely gravelly clay loam	GC	A-7-6	0-30	30-55	50-75	45-70	40-70	35-55	41-59	21-29
	14	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
703: Cerpone gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-4	Gravelly loam	ML	A-7-5	0-10	0-15	55-80	50-75	40-70	30-55	35-49	10-14
	4-9	Gravelly loam	CL	A-6	0	0-30	60-90	55-85	40-80	35-65	32-45	13-18
	9-17	Cobbly loam	CL	A-6	0	0-30	60-90	55-85	40-80	35-65	32-45	13-18
	17-26	Gravelly clay loam	CL	A-7-6	0-10	0-25	30-80	25-75	20-75	15-70	35-47	17-25
	26-41	Very gravelly silty clay loam	GC	A-7-6	0-10	0-25	30-80	25-75	20-75	15-70	35-47	17-25
	41-57	Very gravelly silty clay loam	GC	A-2-7	0-10	0-25	30-80	25-75	20-75	15-70	35-47	17-25
	57	Bedrock	---	---	---	---	---	---	---	---	---	---
Typic Haploxeralfs, magnesian, very gravelly loam-----	0-3	Very gravelly loam	GC	A-6	0-15	0-30	50-75	45-70	40-70	30-55	32-41	13-20
	3-7	Gravelly clay loam	CL	A-7-6	0-25	0-60	50-90	45-85	40-85	35-80	36-53	16-29
	7-12	Very gravelly clay loam	GC	A-7-6	0-25	0-60	50-90	45-85	40-85	35-80	36-53	16-29
	12-18	Gravelly clay	CH	A-7-6	0-25	0-60	50-90	45-85	40-85	35-80	36-53	16-29
	18-24	Very gravelly clay	CH	A-7-6	0-25	0-60	50-90	45-85	40-85	35-80	36-53	16-29
	24-32	Very gravelly clay	GC	A-7-6	0-25	0-60	30-65	25-60	20-60	15-55	44-57	22-32
	32-42	Very gravelly clay	GC	A-7-6	0-25	0-60	30-65	25-60	20-60	15-55	44-57	22-32
	42-54	Extremely cobbly clay loam	GC	A-7-6	0-25	0-60	30-65	25-60	20-60	15-55	44-57	22-32
	54	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
703:												
Earlal very gravelly loam-----	0-3	Very gravelly loam	GM	A-7-5	0-30	15-40	55-75	50-70	40-65	30-50	39-54	13-18
	3-7	Very gravelly clay loam	GC	A-7-6	0-30	30-55	50-75	45-70	40-70	35-55	41-59	21-29
	7-14	Extremely gravelly clay loam	GC	A-7-6	0-30	30-55	50-75	45-70	40-70	35-55	41-59	21-29
	14	Bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop, serpentinite.												
704:												
Typic Haploxeralfs, magnesian, very gravelly loam-----	0-3	Very gravelly loam	GC	A-6	0-15	0-30	50-75	45-70	40-70	30-55	32-41	13-20
	3-7	Gravelly clay loam	CL	A-7-6	0-25	0-60	50-90	45-85	40-85	35-80	36-53	16-29
	7-12	Very gravelly clay loam	GC	A-7-6	0-25	0-60	50-90	45-85	40-85	35-80	36-53	16-29
	12-18	Gravelly clay	CH	A-7-6	0-25	0-60	50-90	45-85	40-85	35-80	36-53	16-29
	18-24	Very gravelly clay	CH	A-7-6	0-25	0-60	50-90	45-85	40-85	35-80	36-53	16-29
	24-32	Very gravelly clay	GC	A-7-6	0-25	0-60	30-65	25-60	20-60	15-55	44-57	22-32
	32-42	Very gravelly clay	GC	A-7-6	0-25	0-60	30-65	25-60	20-60	15-55	44-57	22-32
	42-54	Extremely cobbly clay loam	GC	A-7-6	0-25	0-60	30-65	25-60	20-60	15-55	44-57	22-32
	54	Bedrock	---	---	---	---	---	---	---	---	---	---
Earlal very gravelly loam-----	0-3	Very gravelly loam	GM	A-7-5	0-30	15-40	55-75	50-70	40-65	30-50	39-54	13-18
	3-7	Very gravelly clay loam	GC	A-7-6	0-30	30-55	50-75	45-70	40-70	35-55	41-59	21-29
	7-14	Extremely gravelly clay loam	GC	A-7-6	0-30	30-55	50-75	45-70	40-70	35-55	41-59	21-29
	14	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
704: Cerpone gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-4	Gravelly loam	ML	A-7-5	0-10	0-15	55-80	50-75	40-70	30-55	35-49	10-14
	4-9	Gravelly loam	CL	A-6	0	0-30	60-90	55-85	40-80	35-65	32-45	13-18
	9-17	Cobbly loam	CL	A-6	0	0-30	60-90	55-85	40-80	35-65	32-45	13-18
	17-26	Gravelly clay loam	CL	A-7-6	0-10	0-25	30-80	25-75	20-75	15-70	35-47	17-25
	26-41	Very gravelly silty clay loam	GC	A-7-6	0-10	0-25	30-80	25-75	20-75	15-70	35-47	17-25
	41-57	Very gravelly silty clay loam	GC	A-2-7	0-10	0-25	30-80	25-75	20-75	15-70	35-47	17-25
	57	Bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop, serpentinite.												
705: Typic Haploxeralfs, magnesian, very gravelly loam-----	0-3	Very gravelly loam	GC	A-6	0-15	0-30	50-75	45-70	40-70	30-55	32-41	13-20
	3-7	Gravelly clay loam	CL	A-7-6	0-25	0-60	50-90	45-85	40-85	35-80	36-53	16-29
	7-12	Very gravelly clay loam	GC	A-7-6	0-25	0-60	50-90	45-85	40-85	35-80	36-53	16-29
	12-18	Gravelly clay	CH	A-7-6	0-25	0-60	50-90	45-85	40-85	35-80	36-53	16-29
	18-24	Very gravelly clay	CH	A-7-6	0-25	0-60	50-90	45-85	40-85	35-80	36-53	16-29
	24-32	Very gravelly clay	GC	A-7-6	0-25	0-60	30-65	25-60	20-60	15-55	44-57	22-32
	32-42	Very gravelly clay	GC	A-7-6	0-25	0-60	30-65	25-60	20-60	15-55	44-57	22-32
	42-54	Extremely cobbly clay loam	GC	A-7-6	0-25	0-60	30-65	25-60	20-60	15-55	44-57	22-32
	54	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
705: Earlal very gravelly loam-----	0-3	Very gravelly loam	GM	A-7-5	0-30	15-40	55-75	50-70	40-65	30-50	39-54	13-18
	3-7	Very gravelly clay loam	GC	A-7-6	0-30	30-55	50-75	45-70	40-70	35-55	41-59	21-29
	7-14	Extremely gravelly clay loam	GC	A-7-6	0-30	30-55	50-75	45-70	40-70	35-55	41-59	21-29
	14	Bedrock	---	---	---	---	---	---	---	---	---	---
Cerpone gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-4	Gravelly loam	ML	A-7-5	0-10	0-15	55-80	50-75	40-70	30-55	35-49	10-14
	4-9	Gravelly loam	CL	A-6	0	0-30	60-90	55-85	40-80	35-65	32-45	13-18
	9-17	Cobbly loam	CL	A-6	0	0-30	60-90	55-85	40-80	35-65	32-45	13-18
	17-26	Gravelly clay loam	CL	A-7-6	0-10	0-25	30-80	25-75	20-75	15-70	35-47	17-25
	26-41	Very gravelly silty clay loam	GC	A-7-6	0-10	0-25	30-80	25-75	20-75	15-70	35-47	17-25
	41-57	Very gravelly silty clay loam	GC	A-2-7	0-10	0-25	30-80	25-75	20-75	15-70	35-47	17-25
	57	Bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop, serpentinite.												

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
711: Dixmine very gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-6	Very gravelly loam	GM	A-7-6	0	0-10	40-80	35-75	30-70	25-55	36-53	11-18
	6-11	Very gravelly loam	GM	A-7-6	0	0-30	55-80	50-75	40-75	30-60	34-50	13-21
	11-17	Gravelly loam	CL	A-6	0	0-30	55-80	50-75	40-75	30-60	34-50	13-21
	17-30	Very cobbly clay loam	CL	A-7-6	0	0-50	30-80	25-75	20-75	15-60	37-49	19-25
	30-41	Very gravelly clay loam	GC	A-7-6	0	0-50	30-80	25-75	20-75	15-60	37-49	19-25
	41-54	Extremely cobbly clay loam	GC	A-6	0	0-50	30-80	25-75	20-75	15-60	37-49	19-25
	54	Bedrock	---	---	---	---	---	---	---	---	---	---
	Toadtown loam-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---
2-3		Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
3-5		Loam	OH	A-7-5	0	0	45-95	40-90	35-85	25-70	51-68	13-18
5-8		Loam	MH	A-7-5	0	0-15	75-95	70-90	60-90	40-70	41-62	17-24
8-13		Clay loam	ML	A-7-6	0	0-15	75-95	70-90	60-90	40-70	41-62	17-24
13-18		Clay	CH	A-7-6	0	0-15	60-100	55-100	50-100	40-95	47-62	25-33
18-27		Clay	CH	A-7-6	0	0-15	60-100	55-100	50-100	40-95	47-62	25-33
27-51		Clay loam	CL	A-7-6	0	0	80-100	75-100	60-100	45-80	28-46	12-25
51-65		Loam	CL	A-6	0	0	80-100	75-100	60-100	45-80	28-46	12-25
65-75		Loam	CL	A-6	0	0	80-100	75-100	60-100	45-80	28-46	12-25
75-79	Loam			---	---	---	---	---	---	---	---	

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
712: Dixmine very gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-6	Very gravelly loam	GM	A-7-6	0	0-10	40-80	35-75	30-70	25-55	36-53	11-18
	6-11	Very gravelly loam	GM	A-7-6	0	0-30	55-80	50-75	40-75	30-60	34-50	13-21
	11-17	Gravelly loam	CL	A-6	0	0-30	55-80	50-75	40-75	30-60	34-50	13-21
	17-30	Very cobbly clay loam	CL	A-7-6	0	0-50	30-80	25-75	20-75	15-60	37-49	19-25
	30-41	Very gravelly clay loam	GC	A-7-6	0	0-50	30-80	25-75	20-75	15-60	37-49	19-25
	41-54	Extremely cobbly clay loam	GC	A-6	0	0-50	30-80	25-75	20-75	15-60	37-49	19-25
	54	Bedrock	---	---	---	---	---	---	---	---	---	---
Toadtown loam-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	3-5	Loam	OH	A-7-5	0	0	45-95	40-90	35-85	25-70	51-68	13-18
	5-8	Loam	MH	A-7-5	0	0-15	75-95	70-90	60-90	40-70	41-62	17-24
	8-13	Clay loam	ML	A-7-6	0	0-15	75-95	70-90	60-90	40-70	41-62	17-24
	13-18	Clay	CH	A-7-6	0	0-15	60-100	55-100	50-100	40-95	47-62	25-33
	18-27	Clay	CH	A-7-6	0	0-15	60-100	55-100	50-100	40-95	47-62	25-33
	27-51	Clay loam	CL	A-7-6	0	0	80-100	75-100	60-100	45-80	28-46	12-25
	51-65	Loam	CL	A-6	0	0	80-100	75-100	60-100	45-80	28-46	12-25
	65-75	Loam	CL	A-6	0	0	80-100	75-100	60-100	45-80	28-46	12-25
	75-79	Loam			---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
713: Dixmine very gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-6	Very gravelly loam	GM	A-7-6	0	0-10	40-80	35-75	30-70	25-55	36-53	11-18
	6-11	Very gravelly loam	GM	A-7-6	0	0-30	55-80	50-75	40-75	30-60	34-50	13-21
	11-17	Gravelly loam	CL	A-6	0	0-30	55-80	50-75	40-75	30-60	34-50	13-21
	17-30	Very cobbly clay loam	CL	A-7-6	0	0-50	30-80	25-75	20-75	15-60	37-49	19-25
	30-41	Very gravelly clay loam	GC	A-7-6	0	0-50	30-80	25-75	20-75	15-60	37-49	19-25
	41-54	Extremely cobbly clay loam	GC	A-6	0	0-50	30-80	25-75	20-75	15-60	37-49	19-25
	54	Bedrock	---	---	---	---	---	---	---	---	---	---
Toadtown loam-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	3-5	Loam	OH	A-7-5	0	0	45-95	40-90	35-85	25-70	51-68	13-18
	5-8	Loam	MH	A-7-5	0	0-15	75-95	70-90	60-90	40-70	41-62	17-24
	8-13	Clay loam	ML	A-7-6	0	0-15	75-95	70-90	60-90	40-70	41-62	17-24
	13-18	Clay	CH	A-7-6	0	0-15	60-100	55-100	50-100	40-95	47-62	25-33
	18-27	Clay	CH	A-7-6	0	0-15	60-100	55-100	50-100	40-95	47-62	25-33
	27-51	Clay loam	CL	A-7-6	0	0	80-100	75-100	60-100	45-80	28-46	12-25
	51-65	Loam	CL	A-6	0	0	80-100	75-100	60-100	45-80	28-46	12-25
	65-75	Loam	CL	A-6	0	0	80-100	75-100	60-100	45-80	28-46	12-25
	75-79	Loam			---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
714: Dixmine very gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-6	Very gravelly loam	GM	A-7-6	0	0-10	40-80	35-75	30-70	25-55	36-53	11-18
	6-11	Very gravelly loam	GM	A-7-6	0	0-30	55-80	50-75	40-75	30-60	34-50	13-21
	11-17	Gravelly loam	CL	A-6	0	0-30	55-80	50-75	40-75	30-60	34-50	13-21
	17-30	Very cobbly clay loam	CL	A-7-6	0	0-50	30-80	25-75	20-75	15-60	37-49	19-25
	30-41	Very gravelly clay loam	GC	A-7-6	0	0-50	30-80	25-75	20-75	15-60	37-49	19-25
	41-54	Extremely cobbly clay loam	GC	A-6	0	0-50	30-80	25-75	20-75	15-60	37-49	19-25
	54	Bedrock	---	---	---	---	---	---	---	---	---	---
Toadtown loam-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	3-5	Loam	OH	A-7-5	0	0	45-95	40-90	35-85	25-70	51-68	13-18
	5-8	Loam	MH	A-7-5	0	0-15	75-95	70-90	60-90	40-70	41-62	17-24
	8-13	Clay loam	ML	A-7-6	0	0-15	75-95	70-90	60-90	40-70	41-62	17-24
	13-18	Clay	CH	A-7-6	0	0-15	60-100	55-100	50-100	40-95	47-62	25-33
	18-27	Clay	CH	A-7-6	0	0-15	60-100	55-100	50-100	40-95	47-62	25-33
	27-51	Clay loam	CL	A-7-6	0	0	80-100	75-100	60-100	45-80	28-46	12-25
	51-65	Loam	CL	A-6	0	0	80-100	75-100	60-100	45-80	28-46	12-25
	65-75	Loam	CL	A-6	0	0	80-100	75-100	60-100	45-80	28-46	12-25
	75-79	Loam			---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
715: Logtrain gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Gravelly loam	GM	A-7-5	0-10	0-15	30-65	25-60	15-55	10-45	36-70	6-14
	3-9	Very gravelly loam	GM	A-7-6	0-55	0-55	15-80	10-75	5-70	0-55	27-51	7-18
	9-21	Very gravelly loam	GC	A-6	0-55	0-55	15-80	10-75	5-70	0-55	24-41	7-19
	21-38	Very cobbly loam	CL	A-6	0-55	0-55	15-80	10-75	5-70	0-55	24-41	7-19
	38-54	Extremely gravelly loam	GC	A-6	0-55	0-55	15-80	10-75	5-70	0-55	24-41	7-19
	54	Bedrock	---	---	---	---	---	---	---	---	---	---
Bottlehill very gravelly loam--	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	0.5-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-4	Very gravelly loam	GM	A-7-5	0-10	0-10	30-55	25-50	15-50	10-40	42-73	5-12
	4-9	Very gravelly loam	GM	A-2-7	0-10	0-10	30-55	25-50	15-50	10-40	42-73	5-12
	9-13	Very gravelly loam	GC	A-2-6	0-10	0-25	25-55	20-50	10-50	5-40	28-58	9-18
	13-22	Very gravelly loam	GC	A-2-6	0-10	0-25	25-55	20-50	10-50	5-40	28-58	9-18
	22-33	Extremely gravelly clay loam	GC	A-2-7	0-45	0-45	20-35	15-30	10-30	5-25	29-51	12-25
	33	Bedrock	---	---	---	---	---	---	---	---	---	---
Walkermine very gravelly loam--	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Very gravelly loam	GM	A-2-7	0-55	0-30	30-75	25-70	15-65	10-50	44-67	7-17
	3-12	Very gravelly loam	GM	A-2-7	0-55	0-55	20-65	20-60	15-55	5-45	25-48	7-17
	12	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
716: Griffgulch very gravelly silt loam-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	3-7	Very gravelly silt loam	GM	A-7-5	0-25	0-45	45-90	40-85	35-85	25-75	41-55	11-18
	7-11	Very cobbly silty clay loam	ML	A-7-5	0-25	10-50	55-80	50-75	45-75	35-70	43-60	18-24
	11-20	Extremely cobbly silty clay loam	CL	A-7-6	0-25	10-50	55-80	50-75	45-75	35-70	43-60	18-24
	20-33	Very cobbly silty clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75	35-75	46-65	25-37
	33-47	Very cobbly clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75	35-75	46-65	25-37
	47-58	Extremely gravelly clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75	35-75	46-65	25-37
	58	Bedrock	---	---	---	---	---	---	---	---	---	---
Surnuf gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-4	Gravelly loam	GM	A-7-5	0	0-10	60-95	55-90	40-90	35-70	44-59	14-20
	4-9	Gravelly clay loam	MH	A-7-5	0	0-15	65-100	60-100	55-100	40-80	41-63	19-28
	9-16	Gravelly clay loam	CH	A-7-6	0	0-15	65-100	60-100	55-100	40-80	41-63	19-28
	16-27	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-100	40-95	46-68	25-40
	27-29	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-100	40-95	46-68	25-40
	29-56	Gravelly silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85	25-80	46-66	25-40
	56-72	Silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85	25-80	46-66	25-40

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
717: Griffgulch very gravelly silt loam-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	3-7	Very gravelly silt loam	GM	A-7-5	0-25	0-45	45-90	40-85	35-85	25-75	41-55	11-18
	7-11	Very cobbly silty clay loam	ML	A-7-5	0-25	10-50	55-80	50-75	45-75	35-70	43-60	18-24
	11-20	Extremely cobbly silty clay loam	CL	A-7-6	0-25	10-50	55-80	50-75	45-75	35-70	43-60	18-24
	20-33	Very cobbly silty clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75	35-75	46-65	25-37
	33-47	Very cobbly clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75	35-75	46-65	25-37
	47-58	Extremely gravelly clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75	35-75	46-65	25-37
	58	Bedrock	---	---	---	---	---	---	---	---	---	---
Surnuf gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-4	Gravelly loam	GM	A-7-5	0	0-10	60-95	55-90	40-90	35-70	44-59	14-20
	4-9	Gravelly clay loam	MH	A-7-5	0	0-15	65-100	60-100	55-100	40-80	41-63	19-28
	9-16	Gravelly clay loam	CH	A-7-6	0	0-15	65-100	60-100	55-100	40-80	41-63	19-28
	16-27	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-100	40-95	46-68	25-40
	27-29	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-100	40-95	46-68	25-40
	29-56	Gravelly silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85	25-80	46-66	25-40
	56-72	Silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85	25-80	46-66	25-40

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
718: Griffgulch very gravelly silt loam-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	3-7	Very gravelly silt loam	GM	A-7-5	0-25	0-45	45-90	40-85	35-85	25-75	41-55	11-18
	7-11	Very cobbly silty clay loam	ML	A-7-5	0-25	10-50	55-80	50-75	45-75	35-70	43-60	18-24
	11-20	Extremely cobbly silty clay loam	CL	A-7-6	0-25	10-50	55-80	50-75	45-75	35-70	43-60	18-24
	20-33	Very cobbly silty clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75	35-75	46-65	25-37
	33-47	Very cobbly clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75	35-75	46-65	25-37
	47-58	Extremely gravelly clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75	35-75	46-65	25-37
	58	Bedrock	---	---	---	---	---	---	---	---	---	---
Surnuf gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-4	Gravelly loam	GM	A-7-5	0	0-10	60-95	55-90	40-90	35-70	44-59	14-20
	4-9	Gravelly clay loam	MH	A-7-5	0	0-15	65-100	60-100	55-100	40-80	41-63	19-28
	9-16	Gravelly clay loam	CH	A-7-6	0	0-15	65-100	60-100	55-100	40-80	41-63	19-28
	16-27	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-100	40-95	46-68	25-40
	27-29	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-100	40-95	46-68	25-40
	29-56	Gravelly silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85	25-80	46-66	25-40
	56-72	Silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85	25-80	46-66	25-40
Spine taxadjunct very cobbly loam-----	0-2	Very cobbly loam	MH	A-7-5	0-50	15-50	30-80	25-75	20-70	15-55	37-56	12-18
	2-15	Very cobbly clay loam	CL	A-7-6	0-60	30-55	30-80	25-75	20-75	15-60	33-58	15-24
	15	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
719: Griffgulch very gravelly silt loam-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	3-7	Very gravelly silt loam	GM	A-7-5	0-25	0-45	45-90	40-85	35-85	25-75	41-55	11-18
	7-11	Very cobbly silty clay loam	ML	A-7-5	0-25	10-50	55-80	50-75	45-75	35-70	43-60	18-24
	11-20	Extremely cobbly silty clay loam	CL	A-7-6	0-25	10-50	55-80	50-75	45-75	35-70	43-60	18-24
	20-33	Very cobbly silty clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75	35-75	46-65	25-37
	33-47	Very cobbly clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75	35-75	46-65	25-37
	47-58	Extremely gravelly clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75	35-75	46-65	25-37
	58	Bedrock	---	---	---	---	---	---	---	---	---	---
Surnuf gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-4	Gravelly loam	GM	A-7-5	0	0-10	60-95	55-90	40-90	35-70	44-59	14-20
	4-9	Gravelly clay loam	MH	A-7-5	0	0-15	65-100	60-100	55-100	40-80	41-63	19-28
	9-16	Gravelly clay loam	CH	A-7-6	0	0-15	65-100	60-100	55-100	40-80	41-63	19-28
	16-27	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-100	40-95	46-68	25-40
	27-29	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-100	40-95	46-68	25-40
	29-56	Gravelly silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85	25-80	46-66	25-40
	56-72	Silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85	25-80	46-66	25-40
Spine taxadjunct very cobbly loam-----	0-2	Very cobbly loam	MH	A-7-5	0-50	15-50	30-80	25-75	20-70	15-55	37-56	12-18
	2-15	Very cobbly clay loam	CL	A-7-6	0-60	30-55	30-80	25-75	20-75	15-60	33-58	15-24
	15	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
720: Dystroxepts extremely gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-4	Extremely gravelly loam	GC	A-2-7	10-40	10-25	50-60	45-55	30-50	20-40	27-49	7-18
	4-12	Extremely gravelly clay loam	CL	A-7-6	0-45	25-65	40-80	35-75	20-75	15-60	21-44	6-21
	12-22	Extremely gravelly clay loam	GC	A-6	0-45	25-65	40-80	35-75	20-75	15-60	21-44	6-21
	22-28	Extremely gravelly loam	GC	A-2-6	0-45	25-65	40-80	35-75	20-75	15-60	21-44	6-21
	28-38	Extremely cobble sandy clay loam	GC	A-2-6	0-45	25-65	40-80	35-75	20-75	15-60	21-44	6-21
	38	Bedrock	---	---	---	---	---	---	---	---	---	---
Haploxeralfs very gravelly loam	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	0.5-4	Very gravelly loam	GC	A-8	0-45	0-25	40-90	35-85	20-80	10-65	31-53	11-18
	4-9	Very gravelly clay loam	GC	A-7-6	0-55	0-50	40-80	35-75	30-75	25-60	30-56	13-29
	9-13	Very gravelly clay loam	GC	A-7-6	0-55	0-50	40-80	35-75	30-75	25-60	30-56	13-29
	13-22	Extremely gravelly clay loam	GC	A-2-7	0-55	0-50	40-80	35-75	30-75	25-60	30-56	13-29
	22-31	Extremely gravelly clay loam	GC	A-7-6	0-55	0-50	40-80	35-75	30-75	25-60	30-56	13-29
	31-47	Extremely gravelly clay loam	GC	A-7-6	0-55	0-50	40-80	35-75	30-75	25-60	30-56	13-29
	47	Bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop, metavolcanic.												

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
721: Haploxerands, granitic till, medial sandy loam-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-5	Medial sandy loam	---	---	0-90	0-40	55-95	50-90	30-65	15-35	---	---
	5-12	Medial sandy loam	---	---	0-90	0-40	55-95	50-90	30-65	15-35	---	---
	12-22	Stony medial sandy loam	---	---	10-90	10-45	80-95	75-90	40-65	25-35	---	---
	22-41	Stony coarse sandy loam	SM	A-2-4	0-99	0-40	30-95	25-90	15-70	5-35	8-10	NP-0
	41-55	Extremely bouldery coarse sandy loam	SM	A-2-4	0-99	0-40	30-95	25-90	15-70	5-35	8-10	NP-0
	55-74	Extremely cobble loamy coarse sand	SM	A-1-b	0-99	0-40	30-95	25-90	15-70	5-35	8-10	NP-0
	74-87	Extremely bouldery loamy coarse sand	SM	A-2-4	0-99	0-40	30-95	25-90	15-70	5-35	8-10	NP-0

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
722: Haploxerands, granitic till, medial sandy loam-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-5	Medial sandy loam	---	---	0-90	0-40	55-95	50-90	30-65	15-35	---	---
	5-12	Medial sandy loam	---	---	0-90	0-40	55-95	50-90	30-65	15-35	---	---
	12-22	Stony medial sandy loam	---	---	10-90	10-45	80-95	75-90	40-65	25-35	---	---
	22-41	Stony coarse sandy loam	SM	A-2-4	0-99	0-40	30-95	25-90	15-70	5-35	8-10	NP-0
	41-55	Extremely bouldery coarse sandy loam	SM	A-2-4	0-99	0-40	30-95	25-90	15-70	5-35	8-10	NP-0
	55-74	Extremely cobble loamy coarse sand	SM	A-1-b	0-99	0-40	30-95	25-90	15-70	5-35	8-10	NP-0
	74-87	Extremely bouldery loamy coarse sand	SM	A-2-4	0-99	0-40	30-95	25-90	15-70	5-35	8-10	NP-0
723: Haploxerands, granitic till, medial sandy loam-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-5	Medial sandy loam	---	---	0-90	0-40	55-95	50-90	30-65	15-35	---	---
	5-12	Medial sandy loam	---	---	0-90	0-40	55-95	50-90	30-65	15-35	---	---
	12-22	Stony medial sandy loam	---	---	10-90	10-45	80-95	75-90	40-65	25-35	---	---
	22-41	Stony coarse sandy loam	SM	A-2-4	0-99	0-40	30-95	25-90	15-70	5-35	8-10	NP-0
	41-55	Extremely bouldery coarse sandy loam	SM	A-2-4	0-99	0-40	30-95	25-90	15-70	5-35	8-10	NP-0
	55-74	Extremely cobble loamy coarse sand	SM	A-1-b	0-99	0-40	30-95	25-90	15-70	5-35	8-10	NP-0
	74-87	Extremely bouldery loamy coarse sand	SM	A-2-4	0-99	0-40	30-95	25-90	15-70	5-35	8-10	NP-0

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
724: Haploxerands, volcanic till, cobble medial sandy loam-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-4	Cobbly medial sandy loam	---	---	0-45	15-30	60-95	55-90	35-65	15-35	---	---
	4-17	Cobbly medial sandy loam	---	---	10-60	15-45	55-95	50-90	30-65	15-35	---	---
	17-37	Gravelly sandy loam	SM	A-2-7	10-80	10-40	75-95	70-90	40-80	20-50	35-60	5-15
	37-41	Gravelly sandy loam	SM	A-2-7	10-80	10-40	75-95	70-90	40-80	20-50	35-60	5-15
	41-52	Gravelly material	SM	A-2-4	10-90	10-30	75-90	70-85	35-65	15-35	9-14	NP-2
	52-80	Gravelly material	SM	A-2-4	10-90	10-30	75-90	70-85	35-65	15-35	9-14	NP-2
725: Haploxerands, volcanic till, cobble medial sandy loam-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-4	Cobbly medial sandy loam	---	---	0-45	15-30	60-95	55-90	35-65	15-35	---	---
	4-17	Cobbly medial sandy loam	---	---	10-60	15-45	55-95	50-90	30-65	15-35	---	---
	17-37	Gravelly sandy loam	SM	A-2-7	10-80	10-40	75-95	70-90	40-80	20-50	35-60	5-15
	37-41	Gravelly sandy loam	SM	A-2-7	10-80	10-40	75-95	70-90	40-80	20-50	35-60	5-15
	41-52	Gravelly material	SM	A-2-4	10-90	10-30	75-90	70-85	35-65	15-35	9-14	NP-2
	52-80	Gravelly material	SM	A-2-4	10-90	10-30	75-90	70-85	35-65	15-35	9-14	NP-2

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
726: Haploxerands, volcanic till, cobble medial sandy loam-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-4	Cobbly medial sandy loam	---	---	0-45	15-30	60-95	55-90	35-65	15-35	---	---
	4-17	Cobbly medial sandy loam	---	---	10-60	15-45	55-95	50-90	30-65	15-35	---	---
	17-37	Gravelly sandy loam	SM	A-2-7	10-80	10-40	75-95	70-90	40-80	20-50	35-60	5-15
	37-41	Gravelly sandy loam	SM	A-2-7	10-80	10-40	75-95	70-90	40-80	20-50	35-60	5-15
	41-52	Gravelly material	SM	A-2-4	10-90	10-30	75-90	70-85	35-65	15-35	9-14	NP-2
	52-80	Gravelly material	SM	A-2-4	10-90	10-30	75-90	70-85	35-65	15-35	9-14	NP-2
727: Bonneyridge sandy loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-3	Sandy loam	SM	A-2-4	0	0	65-100	60-100	40-65	15-35	20-44	2-9
	3-6	Sandy loam	SM	A-2-4	0	0-10	65-100	60-100	40-60	15-35	20-44	2-9
	6-16	Coarse sandy loam	SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-35	17-42	2-12
	16-22	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-35	17-42	2-12
	22-31	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-60	15-35	17-42	2-12
	31-39	Sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-40	17-42	2-12
	39-56	Loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-75	15-30	16-23	2-6
	56-76	Gravelly loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-60	15-30	16-23	2-6

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
728: Bonneyridge sandy loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-3	Sandy loam	SM	A-2-4	0	0	65-100	60-100	40-65	15-35	20-44	2-9
	3-6	Sandy loam	SM	A-2-4	0	0-10	65-100	60-100	40-60	15-35	20-44	2-9
	6-16	Coarse sandy loam	SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-35	17-42	2-12
	16-22	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-35	17-42	2-12
	22-31	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-60	15-35	17-42	2-12
	31-39	Sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-40	17-42	2-12
	39-56	Loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-75	15-30	16-23	2-6
	56-76	Gravelly loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-60	15-30	16-23	2-6
729: Bonneyridge sandy loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-3	Sandy loam	SM	A-2-4	0	0	65-100	60-100	40-65	15-35	20-44	2-9
	3-6	Sandy loam	SM	A-2-4	0	0-10	65-100	60-100	40-60	15-35	20-44	2-9
	6-16	Coarse sandy loam	SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-35	17-42	2-12
	16-22	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-35	17-42	2-12
	22-31	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-60	15-35	17-42	2-12
	31-39	Sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-40	17-42	2-12
	39-56	Loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-75	15-30	16-23	2-6
	56-76	Gravelly loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-60	15-30	16-23	2-6

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
730: Tusccoll gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-6	Gravelly loam	MH	A-7-5	0	0-25	60-95	55-90	35-85	15-70	40-56	11-17
	6-14	Gravelly loam	GM	A-7-6	0-25	0-55	50-100	45-98	35-98	20-78	34-61	13-27
	14-23	Gravelly loam	CL	A-7-6	0-25	0-55	50-100	45-98	35-98	20-78	34-61	13-27
	23-33	Gravelly clay loam	CL	A-7-6	0-25	0-55	50-100	45-98	35-98	20-78	31-53	13-28
	33-41	Gravelly clay loam	CL	A-7-6	0-25	0-55	50-100	45-98	35-98	20-78	31-53	13-28
	41-49	Gravelly clay loam	CL	A-7-6	0-25	0-55	50-100	45-98	35-98	20-78	31-53	13-28
	49-70	Gravelly clay loam	CL	A-7-6	0-25	0-55	50-100	45-98	35-98	20-78	31-53	13-28
Schott very gravelly loam-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-6	Very gravelly loam	GM	A-7-5	0-10	0-15	55-95	50-90	30-85	15-70	38-56	9-16
	6-13	Very gravelly clay loam	ML	A-7-6	0-15	0-45	25-80	20-75	15-75	5-60	32-58	12-24
	13-22	Very cobbly clay loam	CL	A-7-6	0-15	0-45	25-80	20-75	15-75	5-60	32-58	12-24
	22-40	Extremely gravelly clay loam	GC	A-7-6	0-15	0-45	25-80	20-75	15-75	5-60	29-49	12-25
	40-50	Extremely gravelly sandy clay loam	GC	A-2-7	0-15	0-45	25-80	20-75	15-75	5-60	29-49	12-25
	50	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
731: Tusccoll gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-6	Gravelly loam	MH	A-7-5	0	0-25	60-95	55-90	35-85	15-70	40-56	11-17
	6-14	Gravelly loam	GM	A-7-6	0-25	0-55	50-100	45-98	35-98	20-78	34-61	13-27
	14-23	Gravelly loam	CL	A-7-6	0-25	0-55	50-100	45-98	35-98	20-78	34-61	13-27
	23-33	Gravelly clay loam	CL	A-7-6	0-25	0-55	50-100	45-98	35-98	20-78	31-53	13-28
	33-41	Gravelly clay loam	CL	A-7-6	0-25	0-55	50-100	45-98	35-98	20-78	31-53	13-28
	41-49	Gravelly clay loam	CL	A-7-6	0-25	0-55	50-100	45-98	35-98	20-78	31-53	13-28
	49-70	Gravelly clay loam	CL	A-7-6	0-25	0-55	50-100	45-98	35-98	20-78	31-53	13-28
Schott very gravelly loam-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-6	Very gravelly loam	GM	A-7-5	0-10	0-15	55-95	50-90	30-85	15-70	38-56	9-16
	6-13	Very gravelly clay loam	ML	A-7-6	0-15	0-45	25-80	20-75	15-75	5-60	32-58	12-24
	13-22	Very cobbly clay loam	CL	A-7-6	0-15	0-45	25-80	20-75	15-75	5-60	32-58	12-24
	22-40	Extremely gravelly clay loam	GC	A-7-6	0-15	0-45	25-80	20-75	15-75	5-60	29-49	12-25
	40-50	Extremely gravelly sandy clay loam	GC	A-2-7	0-15	0-45	25-80	20-75	15-75	5-60	29-49	12-25
	50	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
732: Bonepile taxadjunct, duripan substratum-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-4	Gravelly medial sandy loam	---	---	0-40	0-40	45-80	40-75	25-65	15-45	---	---
	4-7	Very gravelly medial sandy loam	---	---	0-40	0-40	45-80	40-75	25-65	15-45	---	---
	7-15	Very gravelly medial sandy loam	---	---	0-40	0-40	45-80	40-75	25-70	15-55	---	---
	15-30	Extremely gravelly sandy loam	GM	A-2-6	0-40	10-50	45-80	40-75	25-70	15-55	22-45	6-17
	30-37	Extremely cobbly sandy clay loam	GC	A-2-6	0-40	10-50	45-80	40-75	25-70	15-55	22-45	6-17
	37-47	Extremely gravelly clay loam	GC	A-7-6	0-40	15-50	45-80	40-75	25-75	15-60	26-51	9-25
	47	Cemented material	---	---	---	---	---	---	---	---	---	---
733: Haploxeralfs, terrace, gravelly loam-----	0-5	Gravelly loam	GC	A-6	0-15	0-10	60-100	55-95	40-90	25-70	25-35	7-15
	5-11	Gravelly loam	CL	A-6	0-60	0-45	50-95	45-90	35-90	20-80	28-44	9-22
	11-18	Very gravelly loam	CL	A-6	0-60	0-45	50-95	45-90	35-90	20-80	28-44	9-22
	18-32	Very cobbly clay loam	CL	A-7-6	0-60	0-45	50-95	45-90	35-90	20-80	28-44	9-22
	32-48	Extremely cobbly clay loam	CL	A-6	0-60	0-45	50-95	45-90	35-90	20-80	28-44	9-22
	48-63	Extremely cobbly sandy clay loam	SC	A-6	0-60	0-45	50-95	45-90	35-90	20-80	28-44	9-22

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
734: Haploxerands medial sandy loam	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	0.5-2	Medial sandy loam	---	---	0	0	65-95	60-90	35-65	15-65	---	---
	2-5	Gravelly medial sandy loam	---	---	0	0	65-95	60-90	35-65	15-65	---	---
	5-12	Medial sandy loam	---	---	0	0	55-100	50-96	25-72	15-42	---	---
	12-23	Gravelly medial sandy loam	---	---	0	0	55-100	50-96	25-72	15-42	---	---
	23-30	Gravelly coarse sandy loam	SM	A-2-4	0	0	55-100	50-96	25-72	15-42	7-25	NP-8
	30-42	Gravelly coarse sandy loam	SM	A-2-4	0	0	55-100	50-96	25-72	15-42	7-25	NP-8
	42-60	Gravelly coarse sandy loam	SM	A-2-4	0	0	55-100	50-96	25-72	15-42	7-25	NP-8
	60-80	Coarse sandy loam	SM	A-2-4	0	0	55-100	50-96	25-72	15-42	7-25	NP-8
Aquic Xerofluvents peaty very fine sandy loam-----	0-3	Peaty very fine sandy loam	OL	A-5	0	0	95-100	90-100	65-95	35-65	0-50	NP-2
	3-7	Mucky fine sandy loam	OL	A-4	0	0	95-100	90-100	65-95	35-65	0-50	NP-2
	7-16	Gravelly coarse sandy loam	GM	A-1-b	0	0	45-80	40-75	20-55	5-30	0-19	NP-3
	16-19	Mucky fine sandy loam	OL	A-4	0	0	95-100	90-100	65-95	35-65	0-50	NP-2
	19-23	Gravelly sandy loam	SM	A-2-4	0	0	45-80	40-75	20-55	5-30	0-19	NP-3
	23-35	Mucky very fine sandy loam	OL	A-4	0	0	95-100	90-100	65-95	35-65	0-50	NP-2
	35-49	Gravelly loamy coarse sand	GM	A-1-b	0	0	45-80	40-75	20-55	5-30	0-19	NP-3
	49-63	Peaty fine sandy loam	OL	A-4	0	0	95-100	90-100	65-95	35-65	0-50	NP-2
	63-71	Gravelly loamy coarse sand	SM	A-2-4	0	0	45-80	40-75	20-55	5-30	0-19	NP-3
	71-80	Mucky fine sandy loam	OL	A-4	0	0	95-100	90-100	65-95	35-65	0-50	NP-2

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
735: Fluvaquents, loamy-----	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	0.5-2	Loam	CL	A-6	0	0	80-100	75-100	55-95	30-75	23-36	6-16
	2-9	Loam	CL	A-6	0	0	80-100	75-100	55-95	30-75	23-36	6-16
	9-18	Sandy clay loam	CL	A-6	0	0	80-100	75-100	40-100	25-90	23-36	6-16
	18-24	Silt loam	CL	A-6	0	0	80-100	75-100	40-100	25-90	23-36	6-16
	24-27	Sandy loam	SC-SM	A-4	0	0	80-100	75-100	40-100	25-90	21-30	4-11
	27-37	Silt loam	CL	A-4	0	0	80-100	75-100	40-100	25-90	21-30	4-11
	37-45	Loam	CL	A-6	0	0	80-100	75-100	40-95	25-75	23-36	6-16
	45-65	Sandy clay loam	CL	A-6	0	0	80-100	75-100	40-95	25-75	23-36	6-16
	65-70	Sandy loam, sandy clay loam	SC	A-4	0	0	80-100	75-100	40-95	25-75	23-36	6-16
	70-85	Sandy clay loam	CL	A-6	0	0	55-100	50-100	30-95	15-75	10-39	0-18
801: Obstruction gravelly sandy loam	0-4	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	4-7	Gravelly sandy loam	SM	A-2-6	0-10	0-15	50-80	45-75	25-70	15-55	29-47	5-13
	7-10	Gravelly sandy clay loam	GC	A-2-6	0	0-25	60-95	55-90	35-85	15-70	23-43	7-17
	10-18	Gravelly fine sandy loam	SC	A-6	0	0-25	60-95	55-90	35-85	15-70	23-43	7-17
	18-25	Gravelly sandy clay loam	CL	A-6	0	0-25	60-95	55-90	35-85	15-70	23-43	7-17
	25-33	Sandy clay loam	CL	A-6	0	0-25	60-95	55-90	35-85	15-70	23-43	7-17
	33-44	Fine sandy loam	CL	A-6	0	0	50-100	45-96	25-91	15-71	16-31	2-13
	44-64	Gravelly fine sandy loam	SC-SM	A-4	0	0	50-100	45-96	25-91	15-71	16-31	2-13
	64-84	Gravelly fine sandy loam	SM	A-4	0	0	50-100	45-96	25-91	15-71	16-31	2-13
	84	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
802: Obskel very gravelly sandy loam	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	0.5-1	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-4	Very gravelly sandy loam	GM	A-2-4	0-10	0-15	50-80	45-75	25-50	15-30	27-43	4-10
	4-9	Very gravelly sandy loam	GM	A-2-4	0-15	0-30	45-90	40-85	25-80	10-65	21-42	6-16
	9-19	Very gravelly sandy loam	GC	A-2-6	0-15	0-30	45-90	40-85	25-80	10-65	21-42	6-16
	19-30	Very gravelly loam	GC	A-6	0-15	0-30	45-90	40-85	25-80	10-65	21-42	6-16
	30-56	Very gravelly loam	GC	A-6	0-15	0-30	45-90	40-85	25-80	10-65	21-42	6-16
	56	Bedrock	---	---	---	---	---	---	---	---	---	---
Obstruction gravelly sandy loam	0-4	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	4-7	Gravelly sandy loam	SM	A-2-6	0-10	0-15	50-80	45-75	25-70	15-55	29-47	5-13
	7-10	Gravelly sandy clay loam	GC	A-2-6	0	0-25	60-95	55-90	35-85	15-70	23-43	7-17
	10-18	Gravelly fine sandy loam	SC	A-6	0	0-25	60-95	55-90	35-85	15-70	23-43	7-17
	18-25	Gravelly sandy clay loam	CL	A-6	0	0-25	60-95	55-90	35-85	15-70	23-43	7-17
	25-33	Sandy clay loam	CL	A-6	0	0-25	60-95	55-90	35-85	15-70	23-43	7-17
	33-44	Fine sandy loam	CL	A-6	0	0	50-100	45-96	25-91	15-71	16-31	2-13
	44-64	Gravelly fine sandy loam	SC-SM	A-4	0	0	50-100	45-96	25-91	15-71	16-31	2-13
	64-84	Gravelly fine sandy loam	SM	A-4	0	0	50-100	45-96	25-91	15-71	16-31	2-13
	84	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
803: Obskel very gravelly sandy loam	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	0.5-1	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-4	Very gravelly sandy loam	GM	A-2-4	0-10	0-15	50-80	45-75	25-50	15-30	27-43	4-10
	4-9	Very gravelly sandy loam	GM	A-2-4	0-15	0-30	45-90	40-85	25-80	10-65	21-42	6-16
	9-19	Very gravelly sandy loam	GC	A-2-6	0-15	0-30	45-90	40-85	25-80	10-65	21-42	6-16
	19-30	Very gravelly loam	GC	A-6	0-15	0-30	45-90	40-85	25-80	10-65	21-42	6-16
	30-56	Very gravelly loam	GC	A-6	0-15	0-30	45-90	40-85	25-80	10-65	21-42	6-16
	56	Bedrock	---	---	---	---	---	---	---	---	---	---
Obstruction gravelly sandy loam	0-4	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	4-7	Gravelly sandy loam	SM	A-2-6	0-10	0-15	50-80	45-75	25-70	15-55	29-47	5-13
	7-10	Gravelly sandy clay loam	GC	A-2-6	0	0-25	60-95	55-90	35-85	15-70	23-43	7-17
	10-18	Gravelly fine sandy loam	SC	A-6	0	0-25	60-95	55-90	35-85	15-70	23-43	7-17
	18-25	Gravelly sandy clay loam	CL	A-6	0	0-25	60-95	55-90	35-85	15-70	23-43	7-17
	25-33	Sandy clay loam	CL	A-6	0	0-25	60-95	55-90	35-85	15-70	23-43	7-17
	33-44	Fine sandy loam	CL	A-6	0	0	50-100	45-96	25-91	15-71	16-31	2-13
	44-64	Gravelly fine sandy loam	SC-SM	A-4	0	0	50-100	45-96	25-91	15-71	16-31	2-13
	64-84	Gravelly fine sandy loam	SM	A-4	0	0	50-100	45-96	25-91	15-71	16-31	2-13
	84	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
804: Obskel very gravelly sandy loam	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	0.5-1	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-4	Very gravelly sandy loam	GM	A-2-4	0-10	0-15	50-80	45-75	25-50	15-30	27-43	4-10
	4-9	Very gravelly sandy loam	GM	A-2-4	0-15	0-30	45-90	40-85	25-80	10-65	21-42	6-16
	9-19	Very gravelly sandy loam	GC	A-2-6	0-15	0-30	45-90	40-85	25-80	10-65	21-42	6-16
	19-30	Very gravelly loam	GC	A-6	0-15	0-30	45-90	40-85	25-80	10-65	21-42	6-16
	30-56	Very gravelly loam	GC	A-6	0-15	0-30	45-90	40-85	25-80	10-65	21-42	6-16
	56	Bedrock	---	---	---	---	---	---	---	---	---	---
Obstruction gravelly sandy loam	0-4	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	4-7	Gravelly sandy loam	SM	A-2-6	0-10	0-15	50-80	45-75	25-70	15-55	29-47	5-13
	7-10	Gravelly sandy clay loam	GC	A-2-6	0	0-25	60-95	55-90	35-85	15-70	23-43	7-17
	10-18	Gravelly fine sandy loam	SC	A-6	0	0-25	60-95	55-90	35-85	15-70	23-43	7-17
	18-25	Gravelly sandy clay loam	CL	A-6	0	0-25	60-95	55-90	35-85	15-70	23-43	7-17
	25-33	Sandy clay loam	CL	A-6	0	0-25	60-95	55-90	35-85	15-70	23-43	7-17
	33-44	Fine sandy loam	CL	A-6	0	0	50-100	45-96	25-91	15-71	16-31	2-13
	44-64	Gravelly fine sandy loam	SC-SM	A-4	0	0	50-100	45-96	25-91	15-71	16-31	2-13
	64-84	Gravelly fine sandy loam	SM	A-4	0	0	50-100	45-96	25-91	15-71	16-31	2-13
	84	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
804: Retsongulch very gravelly sandy loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Very gravelly sandy loam	GM	A-2-6	0-15	0-15	50-95	45-90	25-85	15-70	25-47	6-14
	3-12	Very gravelly sandy clay loam	GC	A-2-6	0-40	10-50	40-65	35-60	20-55	10-45	24-44	7-18
	12-21	Extremely gravelly sandy clay loam	GC	A-2-6	0-40	10-50	40-65	35-60	20-55	10-45	23-38	7-18
	21-30	Extremely gravelly sandy loam	GC-GM	A-2-4	0-40	10-50	40-65	35-60	20-55	10-45	23-38	7-18
	30	Bedrock	---	---	---	---	---	---	---	---	---	---
805: Bottlehill very gravelly loam--	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	0.5-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-4	Very gravelly loam	GM	A-7-5	0-10	0-10	30-55	25-50	15-50	10-40	42-73	5-12
	4-9	Very gravelly loam	GM	A-2-7	0-10	0-10	30-55	25-50	15-50	10-40	42-73	5-12
	9-13	Very gravelly loam	GC	A-2-6	0-10	0-25	25-55	20-50	10-50	5-40	28-58	9-18
	13-22	Very gravelly loam	GC	A-2-6	0-10	0-25	25-55	20-50	10-50	5-40	28-58	9-18
	22-33	Extremely gravelly clay loam	GC	A-2-7	0-45	0-45	20-35	15-30	10-30	5-25	29-51	12-25
	33	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
805: Walkermine very gravelly loam--	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Very gravelly loam	GM	A-2-7	0-55	0-30	30-75	25-70	15-65	10-50	44-67	7-17
	3-12	Very gravelly loam	GM	A-2-7	0-55	0-55	20-65	20-60	15-55	5-45	25-48	7-17
	12	Bedrock	---	---	---	---	---	---	---	---	---	---
Logtrain gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Gravelly loam	GM	A-7-5	0-10	0-15	30-65	25-60	15-55	10-45	36-70	6-14
	3-9	Very gravelly loam	GM	A-7-6	0-55	0-55	15-80	10-75	5-70	0-55	27-51	7-18
	9-21	Very gravelly loam	GC	A-6	0-55	0-55	15-80	10-75	5-70	0-55	24-41	7-19
	21-38	Very cobbly loam	CL	A-6	0-55	0-55	15-80	10-75	5-70	0-55	24-41	7-19
	38-54	Extremely gravelly loam	GC	A-6	0-55	0-55	15-80	10-75	5-70	0-55	24-41	7-19
	54	Bedrock	---	---	---	---	---	---	---	---	---	---
806: Bottlehill very gravelly loam--	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	0.5-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-4	Very gravelly loam	GM	A-7-5	0-10	0-10	30-55	25-50	15-50	10-40	42-73	5-12
	4-9	Very gravelly loam	GM	A-2-7	0-10	0-10	30-55	25-50	15-50	10-40	42-73	5-12
	9-13	Very gravelly loam	GC	A-2-6	0-10	0-25	25-55	20-50	10-50	5-40	28-58	9-18
	13-22	Very gravelly loam	GC	A-2-6	0-10	0-25	25-55	20-50	10-50	5-40	28-58	9-18
	22-33	Extremely gravelly clay loam	GC	A-2-7	0-45	0-45	20-35	15-30	10-30	5-25	29-51	12-25
	33	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
806: Walkermine very gravelly loam--	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Very gravelly loam	GM	A-2-7	0-55	0-30	30-75	25-70	15-65	10-50	44-67	7-17
	3-12	Very gravelly loam	GM	A-2-7	0-55	0-55	20-65	20-60	15-55	5-45	25-48	7-17
	12	Bedrock	---	---	---	---	---	---	---	---	---	---
Logtrain gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Gravelly loam	GM	A-7-5	0-10	0-15	30-65	25-60	15-55	10-45	36-70	6-14
	3-9	Very gravelly loam	GM	A-7-6	0-55	0-55	15-80	10-75	5-70	0-55	27-51	7-18
	9-21	Very gravelly loam	GC	A-6	0-55	0-55	15-80	10-75	5-70	0-55	24-41	7-19
	21-38	Very cobbly loam	CL	A-6	0-55	0-55	15-80	10-75	5-70	0-55	24-41	7-19
	38-54	Extremely gravelly loam	GC	A-6	0-55	0-55	15-80	10-75	5-70	0-55	24-41	7-19
	54	Bedrock	---	---	---	---	---	---	---	---	---	---
807: Bottlehill very gravelly loam--	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	0.5-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-4	Very gravelly loam	GM	A-7-5	0-10	0-10	30-55	25-50	15-50	10-40	42-73	5-12
	4-9	Very gravelly loam	GM	A-2-7	0-10	0-10	30-55	25-50	15-50	10-40	42-73	5-12
	9-13	Very gravelly loam	GC	A-2-6	0-10	0-25	25-55	20-50	10-50	5-40	28-58	9-18
	13-22	Very gravelly loam	GC	A-2-6	0-10	0-25	25-55	20-50	10-50	5-40	28-58	9-18
	22-33	Extremely gravelly clay loam	GC	A-2-7	0-45	0-45	20-35	15-30	10-30	5-25	29-51	12-25
	33	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
807: Logtrain gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Gravelly loam	GM	A-7-5	0-10	0-15	30-65	25-60	15-55	10-45	36-70	6-14
	3-9	Very gravelly loam	GM	A-7-6	0-55	0-55	15-80	10-75	5-70	0-55	27-51	7-18
	9-21	Very gravelly loam	GC	A-6	0-55	0-55	15-80	10-75	5-70	0-55	24-41	7-19
	21-38	Very cobbly loam	CL	A-6	0-55	0-55	15-80	10-75	5-70	0-55	24-41	7-19
	38-54	Extremely gravelly loam	GC	A-6	0-55	0-55	15-80	10-75	5-70	0-55	24-41	7-19
	54	Bedrock	---	---	---	---	---	---	---	---	---	---
Walkermine very gravelly loam--	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Very gravelly loam	GM	A-2-7	0-55	0-30	30-75	25-70	15-65	10-50	44-67	7-17
	3-12	Very gravelly loam	GM	A-2-7	0-55	0-55	20-65	20-60	15-55	5-45	25-48	7-17
	12	Bedrock	---	---	---	---	---	---	---	---	---	---
808: Bottlehill very gravelly loam--	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	0.5-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-4	Very gravelly loam	GM	A-7-5	0-10	0-10	30-55	25-50	15-50	10-40	42-73	5-12
	4-9	Very gravelly loam	GM	A-2-7	0-10	0-10	30-55	25-50	15-50	10-40	42-73	5-12
	9-13	Very gravelly loam	GC	A-2-6	0-10	0-25	25-55	20-50	10-50	5-40	28-58	9-18
	13-22	Very gravelly loam	GC	A-2-6	0-10	0-25	25-55	20-50	10-50	5-40	28-58	9-18
	22-33	Extremely gravelly clay loam	GC	A-2-7	0-45	0-45	20-35	15-30	10-30	5-25	29-51	12-25
	33	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
808: Walkermine very gravelly loam--	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Very gravelly loam	GM	A-2-7	0-55	0-30	30-75	25-70	15-65	10-50	44-67	7-17
	3-12	Very gravelly loam	GM	A-2-7	0-55	0-55	20-65	20-60	15-55	5-45	25-48	7-17
	12	Bedrock	---	---	---	---	---	---	---	---	---	---
Logtrain gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Gravelly loam	GM	A-7-5	0-10	0-15	30-65	25-60	15-55	10-45	36-70	6-14
	3-9	Very gravelly loam	GM	A-7-6	0-55	0-55	15-80	10-75	5-70	0-55	27-51	7-18
	9-21	Very gravelly loam	GC	A-6	0-55	0-55	15-80	10-75	5-70	0-55	24-41	7-19
	21-38	Very cobbly loam	CL	A-6	0-55	0-55	15-80	10-75	5-70	0-55	24-41	7-19
	38-54	Extremely gravelly loam	GC	A-6	0-55	0-55	15-80	10-75	5-70	0-55	24-41	7-19
	54	Bedrock	---	---	---	---	---	---	---	---	---	---
809: Walkermine very gravelly loam--	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Very gravelly loam	GM	A-2-7	0-55	0-30	30-75	25-70	15-65	10-50	44-67	7-17
	3-12	Very gravelly loam	GM	A-2-7	0-55	0-55	20-65	20-60	15-55	5-45	25-48	7-17
	12	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
809: Bottlehill very gravelly loam--	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	0.5-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-4	Very gravelly loam	GM	A-7-5	0-10	0-10	30-55	25-50	15-50	10-40	42-73	5-12
	4-9	Very gravelly loam	GM	A-2-7	0-10	0-10	30-55	25-50	15-50	10-40	42-73	5-12
	9-13	Very gravelly loam	GC	A-2-6	0-10	0-25	25-55	20-50	10-50	5-40	28-58	9-18
	13-22	Very gravelly loam	GC	A-2-6	0-10	0-25	25-55	20-50	10-50	5-40	28-58	9-18
	22-33	Extremely gravelly clay loam	GC	A-2-7	0-45	0-45	20-35	15-30	10-30	5-25	29-51	12-25
	33	Bedrock	---	---	---	---	---	---	---	---	---	---
Logtrain gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Gravelly loam	GM	A-7-5	0-10	0-15	30-65	25-60	15-55	10-45	36-70	6-14
	3-9	Very gravelly loam	GM	A-7-6	0-55	0-55	15-80	10-75	5-70	0-55	27-51	7-18
	9-21	Very gravelly loam	GC	A-6	0-55	0-55	15-80	10-75	5-70	0-55	24-41	7-19
	21-38	Very cobbly loam	CL	A-6	0-55	0-55	15-80	10-75	5-70	0-55	24-41	7-19
	38-54	Extremely gravelly loam	GC	A-6	0-55	0-55	15-80	10-75	5-70	0-55	24-41	7-19
	54	Bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop, metavolcanic.												

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
810: Dixmine very gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-6	Very gravelly loam	GM	A-7-6	0	0-10	40-80	35-75	30-70	25-55	36-53	11-18
	6-11	Very gravelly loam	GM	A-7-6	0	0-30	55-80	50-75	40-75	30-60	34-50	13-21
	11-17	Gravelly loam	CL	A-6	0	0-30	55-80	50-75	40-75	30-60	34-50	13-21
	17-30	Very cobbly clay loam	CL	A-7-6	0	0-50	30-80	25-75	20-75	15-60	37-49	19-25
	30-41	Very gravelly clay loam	GC	A-7-6	0	0-50	30-80	25-75	20-75	15-60	37-49	19-25
	41-54	Extremely cobbly clay loam	GC	A-6	0	0-50	30-80	25-75	20-75	15-60	37-49	19-25
	54	Bedrock	---	---	---	---	---	---	---	---	---	---
	Mac gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---
1-4		Gravelly loam	MH	A-7-6	0	0-15	45-80	40-75	25-70	10-55	36-61	9-16
4-9		Very gravelly loam	GM	A-7-6	0	0-25	45-90	40-85	25-85	10-80	31-60	11-24
9-15		Gravelly silty clay loam	CL	A-7-6	0	0-25	45-90	40-85	25-85	10-80	29-53	11-25
15-23		Silty clay loam	CL	A-7-6	0	0-25	45-90	40-85	25-85	10-80	28-49	11-25
23-37		Extremely gravelly silt loam	GC	A-2-7	0	0-55	15-60	10-55	5-55	0-50	27-41	10-19
37		Bedrock	---	---	---	---	---	---	---	---	---	---
Spine very gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Very gravelly loam	GM	A-7-6	0	0-10	30-65	25-60	15-55	10-45	31-49	7-14
	3-9	Extremely gravelly loam	GC	A-2-6	0	0-25	25-60	20-55	15-55	5-45	26-49	9-25
	9-16	Extremely gravelly clay loam	GC	A-2-6	0	0-25	25-60	20-55	15-55	5-45	26-49	9-25
	16	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
811: Powellton gravelly loam-----	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	0.5-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-4	Gravelly loam	GM	A-7-5	0	0	45-95	40-90	25-85	15-70	45-64	11-18
	4-9	Gravelly loam	ML	A-7-5	0	0-10	75-100	70-96	60-96	40-76	33-60	15-24
	9-15	Loam	CL	A-7-6	0	0-10	75-100	70-96	60-96	40-76	33-60	15-24
	15-24	Clay loam	CL	A-7-6	0	0-10	75-100	70-96	60-96	40-76	33-60	15-24
	24-30	Clay loam	CL	A-6	0	0-10	75-100	70-96	60-96	40-76	33-60	15-24
	30-41	Silt loam	CL	A-6	0	0	65-100	60-100	50-100	35-90	27-41	11-21
	41-61	Loam	CL	A-6	0	0	65-100	60-100	50-100	35-90	27-41	11-21
	61-83	Loam	CL	A-4, A-6	0	0	65-100	60-100	50-100	35-90	27-41	11-21
Toadtown loam-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	3-5	Loam	OH	A-7-5	0	0	45-95	40-90	35-85	25-70	51-68	13-18
	5-8	Loam	MH	A-7-5	0	0-15	75-95	70-90	60-90	40-70	41-62	17-24
	8-13	Clay loam	ML	A-7-6	0	0-15	75-95	70-90	60-90	40-70	41-62	17-24
	13-18	Clay	CH	A-7-6	0	0-15	60-100	55-100	50-100	40-95	47-62	25-33
	18-27	Clay	CH	A-7-6	0	0-15	60-100	55-100	50-100	40-95	47-62	25-33
	27-51	Clay loam	CL	A-7-6	0	0	80-100	75-100	60-100	45-80	28-46	12-25
	51-65	Loam	CL	A-6	0	0	80-100	75-100	60-100	45-80	28-46	12-25
	65-75	Loam	CL	A-6	0	0	80-100	75-100	60-100	45-80	28-46	12-25
	75-79	Loam	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
812: Powellton gravelly loam-----	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	0.5-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-4	Gravelly loam	GM	A-7-5	0	0	45-95	40-90	25-85	15-70	45-64	11-18
	4-9	Gravelly loam	ML	A-7-5	0	0-10	75-100	70-96	60-96	40-76	33-60	15-24
	9-15	Loam	CL	A-7-6	0	0-10	75-100	70-96	60-96	40-76	33-60	15-24
	15-24	Clay loam	CL	A-7-6	0	0-10	75-100	70-96	60-96	40-76	33-60	15-24
	24-30	Clay loam	CL	A-6	0	0-10	75-100	70-96	60-96	40-76	33-60	15-24
	30-41	Silt loam	CL	A-6	0	0	65-100	60-100	50-100	35-90	27-41	11-21
	41-61	Loam	CL	A-6	0	0	65-100	60-100	50-100	35-90	27-41	11-21
	61-83	Loam	CL	A-4, A-6	0	0	65-100	60-100	50-100	35-90	27-41	11-21
Toadtown loam-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	3-5	Loam	OH	A-7-5	0	0	45-95	40-90	35-85	25-70	51-68	13-18
	5-8	Loam	MH	A-7-5	0	0-15	75-95	70-90	60-90	40-70	41-62	17-24
	8-13	Clay loam	ML	A-7-6	0	0-15	75-95	70-90	60-90	40-70	41-62	17-24
	13-18	Clay	CH	A-7-6	0	0-15	60-100	55-100	50-100	40-95	47-62	25-33
	18-27	Clay	CH	A-7-6	0	0-15	60-100	55-100	50-100	40-95	47-62	25-33
	27-51	Clay loam	CL	A-7-6	0	0	80-100	75-100	60-100	45-80	28-46	12-25
	51-65	Loam	CL	A-6	0	0	80-100	75-100	60-100	45-80	28-46	12-25
	65-75	Loam	CL	A-6	0	0	80-100	75-100	60-100	45-80	28-46	12-25
	75-79	Loam	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
813: Powellton gravelly loam-----	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	0.5-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-4	Gravelly loam	GM	A-7-5	0	0	45-95	40-90	25-85	15-70	45-64	11-18
	4-9	Gravelly loam	ML	A-7-5	0	0-10	75-100	70-96	60-96	40-76	33-60	15-24
	9-15	Loam	CL	A-7-6	0	0-10	75-100	70-96	60-96	40-76	33-60	15-24
	15-24	Clay loam	CL	A-7-6	0	0-10	75-100	70-96	60-96	40-76	33-60	15-24
	24-30	Clay loam	CL	A-6	0	0-10	75-100	70-96	60-96	40-76	33-60	15-24
	30-41	Silt loam	CL	A-6	0	0	65-100	60-100	50-100	35-90	27-41	11-21
	41-61	Loam	CL	A-6	0	0	65-100	60-100	50-100	35-90	27-41	11-21
	61-83	Loam	CL	A-4, A-6	0	0	65-100	60-100	50-100	35-90	27-41	11-21
Toadtown loam-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	3-5	Loam	OH	A-7-5	0	0	45-95	40-90	35-85	25-70	51-68	13-18
	5-8	Loam	MH	A-7-5	0	0-15	75-95	70-90	60-90	40-70	41-62	17-24
	8-13	Clay loam	ML	A-7-6	0	0-15	75-95	70-90	60-90	40-70	41-62	17-24
	13-18	Clay	CH	A-7-6	0	0-15	60-100	55-100	50-100	40-95	47-62	25-33
	18-27	Clay	CH	A-7-6	0	0-15	60-100	55-100	50-100	40-95	47-62	25-33
	27-51	Clay loam	CL	A-7-6	0	0	80-100	75-100	60-100	45-80	28-46	12-25
	51-65	Loam	CL	A-6	0	0	80-100	75-100	60-100	45-80	28-46	12-25
	65-75	Loam	CL	A-6	0	0	80-100	75-100	60-100	45-80	28-46	12-25
	75-79	Loam		---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
814: Mountyana gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-4	Gravelly loam	GM	A-7-5	0	0-10	60-100	55-96	35-91	15-71	38-56	9-16
	4-9	Gravelly loam	ML	A-7-6	0	0-4	75-100	70-96	60-96	40-76	30-55	12-25
	9-13	Gravelly clay loam	CL	A-7-6	0	0-4	75-100	70-96	60-96	40-76	30-55	12-25
	13-19	Gravelly clay loam	CL	A-7-6	0	0-4	75-100	70-96	60-96	40-76	30-55	12-25
	19-26	Gravelly clay loam	CL	A-7-6	0	0-10	65-100	60-96	35-96	15-76	29-47	12-25
	26-37	Gravelly clay loam	GC	A-7-6	0	0-10	65-100	60-96	35-96	15-76	29-47	12-25
	37-52	Extremely gravelly clay loam	GC	A-6	0-30	30-65	40-75	35-70	30-70	25-55	28-42	12-21
	52-65	Extremely gravelly loam		A-6	0-30	30-65	40-75	35-70	30-65	25-50	26-37	10-17
	65	Bedrock	---	---	---	---	---	---	---	---	---	---
815: Mountyana gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-4	Gravelly loam	GM	A-7-5	0	0-10	60-100	55-96	35-91	15-71	38-56	9-16
	4-9	Gravelly loam	ML	A-7-6	0	0-4	75-100	70-96	60-96	40-76	30-55	12-25
	9-13	Gravelly clay loam	CL	A-7-6	0	0-4	75-100	70-96	60-96	40-76	30-55	12-25
	13-19	Gravelly clay loam	CL	A-7-6	0	0-4	75-100	70-96	60-96	40-76	30-55	12-25
	19-26	Gravelly clay loam	CL	A-7-6	0	0-10	65-100	60-96	35-96	15-76	29-47	12-25
	26-37	Gravelly clay loam	GC	A-7-6	0	0-10	65-100	60-96	35-96	15-76	29-47	12-25
	37-52	Extremely gravelly clay loam	GC	A-6	0-30	30-65	40-75	35-70	30-70	25-55	28-42	12-21
	52-65	Extremely gravelly loam		A-6	0-30	30-65	40-75	35-70	30-65	25-50	26-37	10-17
	65	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
817: Lydon very gravelly medial coarse sandy loam-----	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	0.5-1	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Very gravelly medial coarse sandy loam	GM	A-1-b	0-25	0-30	50-75	45-70	25-50	15-30	42-67	5-11
	3-6	Very gravelly medial coarse sandy loam	GM	A-1-b	0-25	10-30	40-90	35-85	20-60	10-35	27-56	5-11
	6-13	Extremely gravelly sandy loam	GM	A-1-a	0-25	10-30	40-90	35-85	20-60	10-35	27-56	6-11
	13-21	Extremely gravelly sandy loam	GM	A-2-4	0-25	25-80	30-75	25-70	15-60	10-40	24-40	7-13
	21-35	Extremely cobbly fine sandy loam	SC	A-4	0-25	25-80	30-75	25-70	15-60	10-40	24-40	7-13
	35	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
818: Lydon very gravelly medial coarse sandy loam-----	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	0.5-1	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Very gravelly medial coarse sandy loam	GM	A-1-b	0-25	0-30	50-75	45-70	25-50	15-30	42-67	5-11
	3-6	Very gravelly medial coarse sandy loam	GM	A-1-b	0-25	10-30	40-90	35-85	20-60	10-35	27-56	5-11
	6-13	Extremely gravelly sandy loam	GM	A-1-a	0-25	10-30	40-90	35-85	20-60	10-35	27-56	6-11
	13-21	Extremely gravelly sandy loam	GM	A-2-4	0-25	25-80	30-75	25-70	15-60	10-40	24-40	7-13
	21-35	Extremely cobble fine sandy loam	SC	A-4	0-25	25-80	30-75	25-70	15-60	10-40	24-40	7-13
	35	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
819: Lydon very gravelly medial coarse sandy loam-----	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	0.5-1	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Very gravelly medial coarse sandy loam	GM	A-1-b	0-25	0-30	50-75	45-70	25-50	15-30	42-67	5-11
	3-6	Very gravelly medial coarse sandy loam	GM	A-1-b	0-25	10-30	40-90	35-85	20-60	10-35	27-56	5-11
	6-13	Extremely gravelly sandy loam	GM	A-1-a	0-25	10-30	40-90	35-85	20-60	10-35	27-56	6-11
	13-21	Extremely gravelly sandy loam	GM	A-2-4	0-25	25-80	30-75	25-70	15-60	10-40	24-40	7-13
	21-35	Extremely cobbly fine sandy loam	SC	A-4	0-25	25-80	30-75	25-70	15-60	10-40	24-40	7-13
	35	Bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop, mudflow breccia.												

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
820: Lydon very gravelly medial coarse sandy loam-----	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	0.5-1	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Very gravelly medial coarse sandy loam	GM	A-1-b	0-25	0-30	50-75	45-70	25-50	15-30	42-67	5-11
	3-6	Very gravelly medial coarse sandy loam	GM	A-1-b	0-25	10-30	40-90	35-85	20-60	10-35	27-56	5-11
	6-13	Extremely gravelly sandy loam	GM	A-1-a	0-25	10-30	40-90	35-85	20-60	10-35	27-56	6-11
	13-21	Extremely gravelly sandy loam	GM	A-2-4	0-25	25-80	30-75	25-70	15-60	10-40	24-40	7-13
	21-35	Extremely cobble fine sandy loam	SC	A-4	0-25	25-80	30-75	25-70	15-60	10-40	24-40	7-13
	35	Bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop, mudflow breccia.												

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
821: Lydon very gravelly medial coarse sandy loam-----	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	0.5-1	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Very gravelly medial coarse sandy loam	GM	A-1-b	0-25	0-30	50-75	45-70	25-50	15-30	42-67	5-11
	3-6	Very gravelly medial coarse sandy loam	GM	A-1-b	0-25	10-30	40-90	35-85	20-60	10-35	27-56	5-11
	6-13	Extremely gravelly sandy loam	GM	A-1-a	0-25	10-30	40-90	35-85	20-60	10-35	27-56	6-11
	13-21	Extremely gravelly sandy loam	GM	A-2-4	0-25	25-80	30-75	25-70	15-60	10-40	24-40	7-13
	21-35	Extremely cobbly fine sandy loam	SC	A-4	0-25	25-80	30-75	25-70	15-60	10-40	24-40	7-13
	35	Bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop, mudflow breccia.												
822: Bonepile gravelly medial loam--	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Gravelly medial loam	---	---	0-15	0-25	55-80	50-75	30-70	15-55	---	---
	3-9	Cobbly medial loam	---	---	0-15	0-25	55-80	50-75	30-70	15-55	---	---
	9-18	Gravelly medial loam	---	---	0-15	0-15	55-80	50-75	30-70	15-55	---	---
	18-30	Very gravelly medial loam	---	---	0-15	0-45	40-75	35-70	20-65	10-50	---	---
	30-44	Very gravelly medial loam	GC	A-6	0-30	0-45	25-80	20-75	15-70	5-55	26-41	9-17
	44	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
823: Bonapile gravelly medial loam--	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Gravelly medial loam	---	---	0-15	0-25	55-80	50-75	30-70	15-55	---	---
	3-9	Cobbly medial loam	---	---	0-15	0-25	55-80	50-75	30-70	15-55	---	---
	9-18	Gravelly medial loam	---	---	0-15	0-15	55-80	50-75	30-70	15-55	---	---
	18-30	Very gravelly medial loam	---	---	0-15	0-45	40-75	35-70	20-65	10-50	---	---
	30-44	Very gravelly medial loam	GC	A-6	0-30	0-45	25-80	20-75	15-70	5-55	26-41	9-17
	44	Bedrock	---	---	---	---	---	---	---	---	---	---
824: Beecee very gravelly medial loam-----	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	0.5-1	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-4	Very gravelly medial loam	---	---	0-10	0-25	50-65	45-60	25-55	15-45	---	---
	4-8	Very gravelly medial loam	---	---	0-30	0-30	25-75	20-70	15-65	5-50	---	---
	8-15	Very gravelly medial loam	---	---	0-30	0-30	25-75	20-70	15-65	5-50	---	---
	15-22	Extremely gravelly medial loam	---	---	0-30	0-30	25-75	20-70	15-65	5-50	---	---
	22-31	Extremely gravelly loam	GC	A-2-6	0-30	0-45	20-75	15-70	10-65	5-50	24-38	7-15
	31-44	Very gravelly loam	GC	A-2-6	0-30	0-45	20-75	15-70	10-65	5-50	24-38	7-15
	44-59	Very gravelly loam	GC	A-2-6	0-45	0-45	30-75	25-70	15-65	10-50	28-39	12-19
	59-68	Very gravelly loam	GC	A-6	0-45	0-45	30-75	25-70	15-65	10-50	28-39	12-19
	68-86	Very stony loam	CL	A-6	0-45	0-45	30-75	25-70	15-65	10-50	28-39	12-19

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
825: Beecee very gravelly medial loam-----	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	0.5-1	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-4	Very gravelly medial loam	---	---	0-10	0-25	50-65	45-60	25-55	15-45	---	---
	4-8	Very gravelly medial loam	---	---	0-30	0-30	25-75	20-70	15-65	5-50	---	---
	8-15	Very gravelly medial loam	---	---	0-30	0-30	25-75	20-70	15-65	5-50	---	---
	15-22	Extremely gravelly medial loam	---	---	0-30	0-30	25-75	20-70	15-65	5-50	---	---
	22-31	Extremely gravelly loam	GC	A-2-6	0-30	0-45	20-75	15-70	10-65	5-50	24-38	7-15
	31-44	Very gravelly loam	GC	A-2-6	0-30	0-45	20-75	15-70	10-65	5-50	24-38	7-15
	44-59	Very gravelly loam	GC	A-2-6	0-45	0-45	30-75	25-70	15-65	10-50	28-39	12-19
	59-68	Very gravelly loam	GC	A-6	0-45	0-45	30-75	25-70	15-65	10-50	28-39	12-19
	68-86	Very stony loam	CL	A-6	0-45	0-45	30-75	25-70	15-65	10-50	28-39	12-19

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
825: Lydon very gravelly medial coarse sandy loam-----	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	0.5-1	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Very gravelly medial coarse sandy loam	GM	A-1-b	0-25	0-30	50-75	45-70	25-50	15-30	42-67	5-11
	3-6	Very gravelly medial coarse sandy loam	GM	A-1-b	0-25	10-30	40-90	35-85	20-60	10-35	27-56	5-11
	6-13	Extremely gravelly sandy loam	GM	A-1-a	0-25	10-30	40-90	35-85	20-60	10-35	27-56	6-11
	13-21	Extremely gravelly sandy loam	GM	A-2-4	0-25	25-80	30-75	25-70	15-60	10-40	24-40	7-13
	21-35	Extremely cobble fine sandy loam	SC	A-4	0-25	25-80	30-75	25-70	15-60	10-40	24-40	7-13
	35	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
826: Redbone gravelly medial sandy loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-4	Gravelly medial sandy loam	---	---	0-10	0-10	60-80	55-75	35-65	15-45	---	---
	4-7	Gravelly medial sandy loam	---	---	0-10	0-10	55-80	50-75	30-70	15-55	---	---
	7-17	Gravelly medial fine sandy loam	---	---	0-10	0-10	55-80	50-75	30-70	15-55	---	---
	17-28	Very gravelly fine sandy loam	GC	A-2-6	0-15	0-15	20-55	15-50	10-45	5-30	26-36	9-15
	28-41	Very gravelly coarse sandy loam	GC	A-2-6	0-15	0-15	20-55	15-50	10-45	5-30	26-36	9-15
	41-54	Very gravelly coarse sandy loam	GC	A-2-4	0-15	0-15	20-55	15-50	10-45	5-30	26-36	9-15
	54	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
827: Redbone gravelly medial sandy loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-4	Gravelly medial sandy loam	---	---	0-10	0-10	60-80	55-75	35-65	15-45	---	---
	4-7	Gravelly medial sandy loam	---	---	0-10	0-10	55-80	50-75	30-70	15-55	---	---
	7-17	Gravelly medial fine sandy loam	---	---	0-10	0-10	55-80	50-75	30-70	15-55	---	---
	17-28	Very gravelly fine sandy loam	GC	A-2-6	0-15	0-15	20-55	15-50	10-45	5-30	26-36	9-15
	28-41	Very gravelly coarse sandy loam	GC	A-2-6	0-15	0-15	20-55	15-50	10-45	5-30	26-36	9-15
	41-54	Very gravelly coarse sandy loam	GC	A-2-4	0-15	0-15	20-55	15-50	10-45	5-30	26-36	9-15
	54	Bedrock	---	---	---	---	---	---	---	---	---	---
829: Paradiso loam-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-4	Loam	CH	A-7-5	0	0	80-100	75-100	60-95	45-75	38-68	11-18
	4-9	Clay loam	MH	A-7-5	0	0	95-100	90-100	85-100	55-80	38-62	16-24
	9-16	Clay loam	CH	A-7-6	0	0	95-100	90-100	75-100	55-95	37-60	17-28
	16-25	Clay loam	CH	A-7-6	0	0	95-100	90-100	75-100	65-95	46-70	25-40
	25-45	Clay	CH	A-7-6	0	0	95-100	90-100	75-100	65-95	46-70	25-40
	45-58	Clay loam	CL	A-7-6	0	0-15	65-100	60-100	50-100	35-80	27-46	11-25
	58-74	Clay loam	CL	A-6	0	0-15	65-100	60-100	50-100	35-80	27-46	11-25
	74-84	Loam	CL	A-6	0	0-25	55-100	50-100	40-95	30-75	27-38	11-19

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
830: Paradiso loam-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-4	Loam	CH	A-7-5	0	0	80-100	75-100	60-95	45-75	38-68	11-18
	4-9	Clay loam	MH	A-7-5	0	0	95-100	90-100	85-100	55-80	38-62	16-24
	9-16	Clay loam	CH	A-7-6	0	0	95-100	90-100	75-100	55-95	37-60	17-28
	16-25	Clay loam	CH	A-7-6	0	0	95-100	90-100	75-100	65-95	46-70	25-40
	25-45	Clay	CH	A-7-6	0	0	95-100	90-100	75-100	65-95	46-70	25-40
	45-58	Clay loam	CL	A-7-6	0	0-15	65-100	60-100	50-100	35-80	27-46	11-25
	58-74	Clay loam	CL	A-6	0	0-15	65-100	60-100	50-100	35-80	27-46	11-25
	74-84	Loam	CL	A-6	0	0-25	55-100	50-100	40-95	30-75	27-38	11-19
831: Surnuf gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-4	Gravelly loam	GM	A-7-5	0	0-10	60-95	55-90	40-90	35-70	44-59	14-20
	4-9	Gravelly clay loam	MH	A-7-5	0	0-15	65-100	60-100	55-100	40-80	41-63	19-28
	9-16	Gravelly clay loam	CH	A-7-6	0	0-15	65-100	60-100	55-100	40-80	41-63	19-28
	16-27	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-100	40-95	46-68	25-40
	27-29	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-100	40-95	46-68	25-40
	29-56	Gravelly silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85	25-80	46-66	25-40
	56-72	Silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85	25-80	46-66	25-40
Bigridge loam-----	0-1	Moderately decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-5	Loam	ML	A-4	0	0	65-95	60-90	50-85	35-70	27-43	9-17
	5-9	Gravelly loam	GC	A-6	0	0	65-90	60-85	50-80	35-70	31-48	12-21
	9-15	Gravelly loam	CL	A-6	0	0-15	65-95	60-90	50-85	35-80	30-53	12-25
	15-20	Gravelly loam	GC	A-6	0	0-15	65-95	60-90	50-85	35-80	29-47	12-25
	20-27	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40	0-35	26-47	9-25
	27-36	Extremely gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40	0-35	25-47	9-25
	36-51	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40	0-35	25-47	9-25
	51-62	Bedrock	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
831: Spine very gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Very gravelly loam	GM	A-7-6	0	0-10	30-65	25-60	15-55	10-45	31-49	7-14
	3-9	Extremely gravelly loam	GC	A-2-6	0	0-25	25-60	20-55	15-55	5-45	26-49	9-25
	9-16	Extremely gravelly clay loam	GC	A-2-6	0	0-25	25-60	20-55	15-55	5-45	26-49	9-25
	16	Bedrock	---	---	---	---	---	---	---	---	---	---
832: Surnuf gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-4	Gravelly loam	GM	A-7-5	0	0-10	60-95	55-90	40-90	35-70	44-59	14-20
	4-9	Gravelly clay loam	MH	A-7-5	0	0-15	65-100	60-100	55-100	40-80	41-63	19-28
	9-16	Gravelly clay loam	CH	A-7-6	0	0-15	65-100	60-100	55-100	40-80	41-63	19-28
	16-27	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-100	40-95	46-68	25-40
	27-29	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-100	40-95	46-68	25-40
	29-56	Gravelly silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85	25-80	46-66	25-40
	56-72	Silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85	25-80	46-66	25-40
Bigridge loam-----	0-1	Moderately decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-5	Loam	ML	A-4	0	0	65-95	60-90	50-85	35-70	27-43	9-17
	5-9	Gravelly loam	GC	A-6	0	0	65-90	60-85	50-80	35-70	31-48	12-21
	9-15	Gravelly loam	CL	A-6	0	0-15	65-95	60-90	50-85	35-80	30-53	12-25
	15-20	Gravelly loam	GC	A-6	0	0-15	65-95	60-90	50-85	35-80	29-47	12-25
	20-27	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40	0-35	26-47	9-25
	27-36	Extremely gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40	0-35	25-47	9-25
	36-51	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40	0-35	25-47	9-25
	51-62	Bedrock	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
832: Spine very gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Very gravelly loam	GM	A-7-6	0	0-10	30-65	25-60	15-55	10-45	31-49	7-14
	3-9	Extremely gravelly loam	GC	A-2-6	0	0-25	25-60	20-55	15-55	5-45	26-49	9-25
	9-16	Extremely gravelly clay loam	GC	A-2-6	0	0-25	25-60	20-55	15-55	5-45	26-49	9-25
	16	Bedrock	---	---	---	---	---	---	---	---	---	---
833: Surnuf gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-4	Gravelly loam	GM	A-7-5	0	0-10	60-95	55-90	40-90	35-70	44-59	14-20
	4-9	Gravelly clay loam	MH	A-7-5	0	0-15	65-100	60-100	55-100	40-80	41-63	19-28
	9-16	Gravelly clay loam	CH	A-7-6	0	0-15	65-100	60-100	55-100	40-80	41-63	19-28
	16-27	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-100	40-95	46-68	25-40
	27-29	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-100	40-95	46-68	25-40
	29-56	Gravelly silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85	25-80	46-66	25-40
	56-72	Silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85	25-80	46-66	25-40
Bigridge loam-----	0-1	Moderately decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-5	Loam	ML	A-4	0	0	65-95	60-90	50-85	35-70	27-43	9-17
	5-9	Gravelly loam	GC	A-6	0	0	65-90	60-85	50-80	35-70	31-48	12-21
	9-15	Gravelly loam	CL	A-6	0	0-15	65-95	60-90	50-85	35-80	30-53	12-25
	15-20	Gravelly loam	GC	A-6	0	0-15	65-95	60-90	50-85	35-80	29-47	12-25
	20-27	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40	0-35	26-47	9-25
	27-36	Extremely gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40	0-35	25-47	9-25
	36-51	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40	0-35	25-47	9-25
	51-62	Bedrock	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
833: Spine very gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Very gravelly loam	GM	A-7-6	0	0-10	30-65	25-60	15-55	10-45	31-49	7-14
	3-9	Extremely gravelly loam	GC	A-2-6	0	0-25	25-60	20-55	15-55	5-45	26-49	9-25
	9-16	Extremely gravelly clay loam	GC	A-2-6	0	0-25	25-60	20-55	15-55	5-45	26-49	9-25
	16	Bedrock	---	---	---	---	---	---	---	---	---	---
834: Hietanen gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Gravelly loam	GM	A-7-5	0	0	50-95	45-90	40-90	30-80	39-62	12-18
	3-8	Gravelly loam	ML	A-7-6	0	0-15	60-100	55-95	40-95	35-90	36-60	15-24
	8-19	Silt loam	CL	A-7-6	0	0-15	60-100	55-95	40-95	35-90	34-53	15-25
	19-30	Silt loam	CL	A-6	0	0-15	60-100	55-95	40-95	35-90	33-49	15-25
	30-53	Silt loam	CL	A-6	0	0-15	60-100	55-95	40-95	35-90	33-49	15-25
	53	Bedrock	---	---	---	---	---	---	---	---	---	---
Mac gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-4	Gravelly loam	MH	A-7-6	0	0-15	45-80	40-75	25-70	10-55	36-61	9-16
	4-9	Very gravelly loam	GM	A-7-6	0	0-25	45-90	40-85	25-85	10-80	31-60	11-24
	9-15	Gravelly silty clay loam	CL	A-7-6	0	0-25	45-90	40-85	25-85	10-80	29-53	11-25
	15-23	Silty clay loam	CL	A-7-6	0	0-25	45-90	40-85	25-85	10-80	28-49	11-25
	23-37	Extremely gravelly silt loam	GC	A-2-7	0	0-55	15-60	10-55	5-55	0-50	27-41	10-19
	37	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
835: Hietanen gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Gravelly loam	GM	A-7-5	0	0	50-95	45-90	40-90	30-80	39-62	12-18
	3-8	Gravelly loam	ML	A-7-6	0	0-15	60-100	55-95	40-95	35-90	36-60	15-24
	8-19	Silt loam	CL	A-7-6	0	0-15	60-100	55-95	40-95	35-90	34-53	15-25
	19-30	Silt loam	CL	A-6	0	0-15	60-100	55-95	40-95	35-90	33-49	15-25
	30-53	Silt loam	CL	A-6	0	0-15	60-100	55-95	40-95	35-90	33-49	15-25
	53	Bedrock	---	---	---	---	---	---	---	---	---	---
Mac gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-4	Gravelly loam	MH	A-7-6	0	0-15	45-80	40-75	25-70	10-55	36-61	9-16
	4-9	Very gravelly loam	GM	A-7-6	0	0-25	45-90	40-85	25-85	10-80	31-60	11-24
	9-15	Gravelly silty clay loam	CL	A-7-6	0	0-25	45-90	40-85	25-85	10-80	29-53	11-25
	15-23	Silty clay loam	CL	A-7-6	0	0-25	45-90	40-85	25-85	10-80	28-49	11-25
	23-37	Extremely gravelly silt loam	GC	A-2-7	0	0-55	15-60	10-55	5-55	0-50	27-41	10-19
	37	Bedrock	---	---	---	---	---	---	---	---	---	---
836: Hietanen gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Gravelly loam	GM	A-7-5	0	0	50-95	45-90	40-90	30-80	39-62	12-18
	3-8	Gravelly loam	ML	A-7-6	0	0-15	60-100	55-95	40-95	35-90	36-60	15-24
	8-19	Silt loam	CL	A-7-6	0	0-15	60-100	55-95	40-95	35-90	34-53	15-25
	19-30	Silt loam	CL	A-6	0	0-15	60-100	55-95	40-95	35-90	33-49	15-25
	30-53	Silt loam	CL	A-6	0	0-15	60-100	55-95	40-95	35-90	33-49	15-25
	53	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
836: Mac gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-4	Gravelly loam	MH	A-7-6	0	0-15	45-80	40-75	25-70	10-55	36-61	9-16
	4-9	Very gravelly loam	GM	A-7-6	0	0-25	45-90	40-85	25-85	10-80	31-60	11-24
	9-15	Gravelly silty clay loam	CL	A-7-6	0	0-25	45-90	40-85	25-85	10-80	29-53	11-25
	15-23	Silty clay loam	CL	A-7-6	0	0-25	45-90	40-85	25-85	10-80	28-49	11-25
	23-37	Extremely gravelly silt loam	GC	A-2-7	0	0-55	15-60	10-55	5-55	0-50	27-41	10-19
	37	Bedrock	---	---	---	---	---	---	---	---	---	---
Spine very gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Very gravelly loam	GM	A-7-6	0	0-10	30-65	25-60	15-55	10-45	31-49	7-14
	3-9	Extremely gravelly loam	GC	A-2-6	0	0-25	25-60	20-55	15-55	5-45	26-49	9-25
	9-16	Extremely gravelly clay loam	GC	A-2-6	0	0-25	25-60	20-55	15-55	5-45	26-49	9-25
	16	Bedrock	---	---	---	---	---	---	---	---	---	---
837: Hietanen gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Gravelly loam	GM	A-7-5	0	0	50-95	45-90	40-90	30-80	39-62	12-18
	3-8	Gravelly loam	ML	A-7-6	0	0-15	60-100	55-95	40-95	35-90	36-60	15-24
	8-19	Silt loam	CL	A-7-6	0	0-15	60-100	55-95	40-95	35-90	34-53	15-25
	19-30	Silt loam	CL	A-6	0	0-15	60-100	55-95	40-95	35-90	33-49	15-25
	30-53	Silt loam	CL	A-6	0	0-15	60-100	55-95	40-95	35-90	33-49	15-25
	53	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
837: Spine very gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Very gravelly loam	GM	A-7-6	0	0-10	30-65	25-60	15-55	10-45	31-49	7-14
	3-9	Extremely gravelly loam	GC	A-2-6	0	0-25	25-60	20-55	15-55	5-45	26-49	9-25
	9-16	Extremely gravelly clay loam	GC	A-2-6	0	0-25	25-60	20-55	15-55	5-45	26-49	9-25
	16	Bedrock	---	---	---	---	---	---	---	---	---	---
Mac gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-4	Gravelly loam	MH	A-7-6	0	0-15	45-80	40-75	25-70	10-55	36-61	9-16
	4-9	Very gravelly loam	GM	A-7-6	0	0-25	45-90	40-85	25-85	10-80	31-60	11-24
	9-15	Gravelly silty clay loam	CL	A-7-6	0	0-25	45-90	40-85	25-85	10-80	29-53	11-25
	15-23	Silty clay loam	CL	A-7-6	0	0-25	45-90	40-85	25-85	10-80	28-49	11-25
	23-37	Extremely gravelly silt loam	GC	A-2-7	0	0-55	15-60	10-55	5-55	0-50	27-41	10-19
	37	Bedrock	---	---	---	---	---	---	---	---	---	---
838: Dixmine very gravelly loam----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-6	Very gravelly loam	GM	A-7-6	0	0-10	40-80	35-75	30-70	25-55	36-53	11-18
	6-11	Very gravelly loam	GM	A-7-6	0	0-30	55-80	50-75	40-75	30-60	34-50	13-21
	11-17	Gravelly loam	CL	A-6	0	0-30	55-80	50-75	40-75	30-60	34-50	13-21
	17-30	Very cobbly clay loam	CL	A-7-6	0	0-50	30-80	25-75	20-75	15-60	37-49	19-25
	30-41	Very gravelly clay loam	GC	A-7-6	0	0-50	30-80	25-75	20-75	15-60	37-49	19-25
	41-54	Extremely cobbly clay loam	GC	A-6	0	0-50	30-80	25-75	20-75	15-60	37-49	19-25
	54	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
838: Spine very gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Very gravelly loam	GM	A-7-6	0	0-10	30-65	25-60	15-55	10-45	31-49	7-14
	3-9	Extremely gravelly loam	GC	A-2-6	0	0-25	25-60	20-55	15-55	5-45	26-49	9-25
	9-16	Extremely gravelly clay loam	GC	A-2-6	0	0-25	25-60	20-55	15-55	5-45	26-49	9-25
	16	Bedrock	---	---	---	---	---	---	---	---	---	---
Mac gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-4	Gravelly loam	MH	A-7-6	0	0-15	45-80	40-75	25-70	10-55	36-61	9-16
	4-9	Very gravelly loam	GM	A-7-6	0	0-25	45-90	40-85	25-85	10-80	31-60	11-24
	9-15	Gravelly silty clay loam	CL	A-7-6	0	0-25	45-90	40-85	25-85	10-80	29-53	11-25
	15-23	Silty clay loam	CL	A-7-6	0	0-25	45-90	40-85	25-85	10-80	28-49	11-25
	23-37	Extremely gravelly silt loam	GC	A-2-7	0	0-55	15-60	10-55	5-55	0-50	27-41	10-19
	37	Bedrock	---	---	---	---	---	---	---	---	---	---
839: Chawanakee gravelly sandy loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-5	Gravelly sandy loam	SM	A-2-4	0	0	60-90	55-85	30-60	10-35	0-28	NP-3
	5-11	Gravelly sandy loam	SM	A-2-4	0	0	55-90	50-85	25-60	15-35	0-20	NP-3
	11-19	Gravelly sandy loam	GM	A-1-b	0	0	55-90	50-85	25-60	15-35	0-20	NP-3
	19	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
839: Billscabin gravelly sandy loam	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	2-5	Gravelly sandy loam	SM	A-1-b	0-65	0-30	50-95	45-90	25-65	15-35	20-35	2-10
	5-14	Very gravelly sandy loam	GC-GM	A-1-b	0-65	0-30	50-95	45-90	25-65	15-35	18-31	2-10
	14-27	Very gravelly sandy loam	GC	A-2-4	0-30	0-65	50-90	45-85	25-60	15-35	17-28	2-10
	27-37	Very gravelly loamy sand	GM	A-1-a	0-65	0-65	50-90	45-85	25-65	10-35	0-26	NP-7
	37-57	Very gravelly loamy sand	GP-GM	A-1-a	0-65	0-65	50-90	45-85	25-65	10-35	0-26	NP-7
	57-82	Very gravelly loamy sand	GM	A-1-a	0-65	0-65	50-90	45-85	25-65	10-35	0-26	NP-7
841: Billscabin gravelly sandy loam	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	2-5	Gravelly sandy loam	SM	A-1-b	0-65	0-30	50-95	45-90	25-65	15-35	20-35	2-10
	5-14	Very gravelly sandy loam	GC-GM	A-1-b	0-65	0-30	50-95	45-90	25-65	15-35	18-31	2-10
	14-27	Very gravelly sandy loam	GC	A-2-4	0-30	0-65	50-90	45-85	25-60	15-35	17-28	2-10
	27-37	Very gravelly loamy sand	GM	A-1-a	0-65	0-65	50-90	45-85	25-65	10-35	0-26	NP-7
	37-57	Very gravelly loamy sand	GP-GM	A-1-a	0-65	0-65	50-90	45-85	25-65	10-35	0-26	NP-7
	57-82	Very gravelly loamy sand	GM	A-1-a	0-65	0-65	50-90	45-85	25-65	10-35	0-26	NP-7

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
841: Bonneyridge sandy loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-3	Sandy loam	SM	A-2-4	0	0	65-100	60-100	40-65	15-35	20-44	2-9
	3-6	Sandy loam	SM	A-2-4	0	0-10	65-100	60-100	40-60	15-35	20-44	2-9
	6-16	Coarse sandy loam	SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-35	17-42	2-12
	16-22	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-35	17-42	2-12
	22-31	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-60	15-35	17-42	2-12
	31-39	Sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-40	17-42	2-12
	39-56	Loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-75	15-30	16-23	2-6
	56-76	Gravelly loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-60	15-30	16-23	2-6
842: Billscabin gravelly sandy loam	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	2-5	Gravelly sandy loam	SM	A-1-b	0-65	0-30	50-95	45-90	25-65	15-35	20-35	2-10
	5-14	Very gravelly sandy loam	GC-GM	A-1-b	0-65	0-30	50-95	45-90	25-65	15-35	18-31	2-10
	14-27	Very gravelly sandy loam	GC	A-2-4	0-30	0-65	50-90	45-85	25-60	15-35	17-28	2-10
	27-37	Very gravelly loamy sand	GM	A-1-a	0-65	0-65	50-90	45-85	25-65	10-35	0-26	NP-7
	37-57	Very gravelly loamy sand	GP-GM	A-1-a	0-65	0-65	50-90	45-85	25-65	10-35	0-26	NP-7
	57-82	Very gravelly loamy sand	GM	A-1-a	0-65	0-65	50-90	45-85	25-65	10-35	0-26	NP-7

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
842: Bonneyridge sandy loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-3	Sandy loam	SM	A-2-4	0	0	65-100	60-100	40-65	15-35	20-44	2-9
	3-6	Sandy loam	SM	A-2-4	0	0-10	65-100	60-100	40-60	15-35	20-44	2-9
	6-16	Coarse sandy loam	SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-35	17-42	2-12
	16-22	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-35	17-42	2-12
	22-31	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-60	15-35	17-42	2-12
	31-39	Sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-40	17-42	2-12
	39-56	Loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-75	15-30	16-23	2-6
	56-76	Gravelly loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-60	15-30	16-23	2-6
846: Bonneyridge sandy loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-3	Sandy loam	SM	A-2-4	0	0	65-100	60-100	40-65	15-35	20-44	2-9
	3-6	Sandy loam	SM	A-2-4	0	0-10	65-100	60-100	40-60	15-35	20-44	2-9
	6-16	Coarse sandy loam	SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-35	17-42	2-12
	16-22	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-35	17-42	2-12
	22-31	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-60	15-35	17-42	2-12
	31-39	Sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-40	17-42	2-12
	39-56	Loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-75	15-30	16-23	2-6
	56-76	Gravelly loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-60	15-30	16-23	2-6
Lewisflat loam-----	0-3	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	3-5	Loam	OL	A-5	0	0	90-95	85-90	70-85	50-70	34-50	2-11
	5-9	Loam	CL	A-6	0	0	90-95	85-90	70-85	55-70	18-33	2-12
	9-18	Loam	CL	A-6	0	0	75-100	70-100	60-95	40-75	30-41	12-19
	18-33	Loam	CL	A-6	0	0	75-100	70-100	60-95	40-75	28-38	12-19
	33-49	Loam	CL	A-6	0	0	75-100	70-100	60-95	40-75	28-38	12-19
	49-65	Loam	CL-ML	A-4	0	0	75-100	70-100	60-95	40-75	19-38	4-19
	65-75	Loam	CL-ML	A-4	0	0	75-100	70-100	60-95	40-75	19-38	4-19

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
847: Bonneyridge sandy loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-3	Sandy loam	SM	A-2-4	0	0	65-100	60-100	40-65	15-35	20-44	2-9
	3-6	Sandy loam	SM	A-2-4	0	0-10	65-100	60-100	40-60	15-35	20-44	2-9
	6-16	Coarse sandy loam	SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-35	17-42	2-12
	16-22	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-35	17-42	2-12
	22-31	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-60	15-35	17-42	2-12
	31-39	Sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-40	17-42	2-12
	39-56	Loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-75	15-30	16-23	2-6
	56-76	Gravelly loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-60	15-30	16-23	2-6
Lewisflat loam-----	0-3	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	3-5	Loam	OL	A-5	0	0	90-95	85-90	70-85	50-70	34-50	2-11
	5-9	Loam	CL	A-6	0	0	90-95	85-90	70-85	55-70	18-33	2-12
	9-18	Loam	CL	A-6	0	0	75-100	70-100	60-95	40-75	30-41	12-19
	18-33	Loam	CL	A-6	0	0	75-100	70-100	60-95	40-75	28-38	12-19
	33-49	Loam	CL	A-6	0	0	75-100	70-100	60-95	40-75	28-38	12-19
	49-65	Loam	CL-ML	A-4	0	0	75-100	70-100	60-95	40-75	19-38	4-19
	65-75	Loam	CL-ML	A-4	0	0	75-100	70-100	60-95	40-75	19-38	4-19
848: Bonneyridge sandy loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-3	Sandy loam	SM	A-2-4	0	0	65-100	60-100	40-65	15-35	20-44	2-9
	3-6	Sandy loam	SM	A-2-4	0	0-10	65-100	60-100	40-60	15-35	20-44	2-9
	6-16	Coarse sandy loam	SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-35	17-42	2-12
	16-22	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-35	17-42	2-12
	22-31	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-60	15-35	17-42	2-12
	31-39	Sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65	15-40	17-42	2-12
	39-56	Loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-75	15-30	16-23	2-6
	56-76	Gravelly loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-60	15-30	16-23	2-6

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
848: Lewisflat loam-----	0-3	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	3-5	Loam	OL	A-5	0	0	90-95	85-90	70-85	50-70	34-50	2-11
	5-9	Loam	CL	A-6	0	0	90-95	85-90	70-85	55-70	18-33	2-12
	9-18	Loam	CL	A-6	0	0	75-100	70-100	60-95	40-75	30-41	12-19
	18-33	Loam	CL	A-6	0	0	75-100	70-100	60-95	40-75	28-38	12-19
	33-49	Loam	CL	A-6	0	0	75-100	70-100	60-95	40-75	28-38	12-19
	49-65	Loam	CL-ML	A-4	0	0	75-100	70-100	60-95	40-75	19-38	4-19
	65-75	Loam	CL-ML	A-4	0	0	75-100	70-100	60-95	40-75	19-38	4-19
850: Lewisflat loam-----	0-3	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	3-5	Loam	OL	A-5	0	0	90-95	85-90	70-85	50-70	34-50	2-11
	5-9	Loam	CL	A-6	0	0	90-95	85-90	70-85	55-70	18-33	2-12
	9-18	Loam	CL	A-6	0	0	75-100	70-100	60-95	40-75	30-41	12-19
	18-33	Loam	CL	A-6	0	0	75-100	70-100	60-95	40-75	28-38	12-19
	33-49	Loam	CL	A-6	0	0	75-100	70-100	60-95	40-75	28-38	12-19
	49-65	Loam	CL-ML	A-4	0	0	75-100	70-100	60-95	40-75	19-38	4-19
	65-75	Loam	CL-ML	A-4	0	0	75-100	70-100	60-95	40-75	19-38	4-19
851: Lewisflat loam-----	0-3	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	3-5	Loam	OL	A-5	0	0	90-95	85-90	70-85	50-70	34-50	2-11
	5-9	Loam	CL	A-6	0	0	90-95	85-90	70-85	55-70	18-33	2-12
	9-18	Loam	CL	A-6	0	0	75-100	70-100	60-95	40-75	30-41	12-19
	18-33	Loam	CL	A-6	0	0	75-100	70-100	60-95	40-75	28-38	12-19
	33-49	Loam	CL	A-6	0	0	75-100	70-100	60-95	40-75	28-38	12-19
	49-65	Loam	CL-ML	A-4	0	0	75-100	70-100	60-95	40-75	19-38	4-19
	65-75	Loam	CL-ML	A-4	0	0	75-100	70-100	60-95	40-75	19-38	4-19
852: Lewisflat loam-----	0-3	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	3-5	Loam	OL	A-5	0	0	90-95	85-90	70-85	50-70	34-50	2-11
	5-9	Loam	CL	A-6	0	0	90-95	85-90	70-85	55-70	18-33	2-12
	9-18	Loam	CL	A-6	0	0	75-100	70-100	60-95	40-75	30-41	12-19
	18-33	Loam	CL	A-6	0	0	75-100	70-100	60-95	40-75	28-38	12-19
	33-49	Loam	CL	A-6	0	0	75-100	70-100	60-95	40-75	28-38	12-19
	49-65	Loam	CL-ML	A-4	0	0	75-100	70-100	60-95	40-75	19-38	4-19
	65-75	Loam	CL-ML	A-4	0	0	75-100	70-100	60-95	40-75	19-38	4-19

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
860: Toadtown gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-6	Gravelly loam	OH	A-7-5	0	0-10	65-100	60-100	40-95	25-75	47-67	9-16
	6-15	Silty clay loam	CL	A-7-6	0	0-2	75-100	70-100	65-95	30-90	38-64	15-26
	15-32	Silty clay	CH	A-7-6	0	0-2	75-100	70-100	65-100	55-95	52-74	29-44
	32-43	Silty clay	CH	A-7-5	0	0-2	75-100	70-100	65-100	55-95	52-74	29-44
	43-55	Cobbly silty clay loam	CL	A-7-6	0	0-30	55-100	50-100	45-100	35-95	28-48	12-27
	55-80	Silty clay loam	CL	A-7-6	0	0-30	55-100	50-100	45-100	35-95	28-48	12-27
Powellton silt loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Silt loam	OH	A-7-5	0	0	75-100	70-100	65-95	55-90	45-62	11-16
	3-9	Silt loam	ML	A-7-6	0	0	75-100	70-100	65-95	55-90	38-62	11-16
	9-19	Silty clay loam	CL	A-7-6	0	0-25	60-100	55-100	45-95	40-95	33-60	15-24
	19-28	Silty clay loam	CL	A-7-6	0	0-25	60-100	55-100	45-95	40-95	33-60	15-24
	28-33	Silty clay loam	CL	A-7-6	0	0-25	60-100	55-100	45-95	40-95	33-60	15-24
	33-48	Silt loam	CL	A-6	0	0-15	80-100	75-100	65-95	60-90	28-47	12-25
	48-66	Silt loam	CL	A-6	0	0-15	80-100	75-100	65-95	60-90	28-47	12-25
	66-73	Loam	CL	A-4	0	0-40	80-100	75-100	65-90	50-75	26-46	10-25
	73-83	Loam	CL-ML	A-4	0	0	100	100	65-90	70-75	21-38	6-19
	83-109	Loam	CL-ML	A-4	0	0	100	100	65-90	70-75	21-38	6-19
861: Toadtown gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-6	Gravelly loam	OH	A-7-5	0	0-10	65-100	60-100	40-95	25-75	47-67	9-16
	6-15	Silty clay loam	CL	A-7-6	0	0-2	75-100	70-100	65-95	30-90	38-64	15-26
	15-32	Silty clay	CH	A-7-6	0	0-2	75-100	70-100	65-100	55-95	52-74	29-44
	32-43	Silty clay	CH	A-7-5	0	0-2	75-100	70-100	65-100	55-95	52-74	29-44
	43-55	Cobbly silty clay loam	CL	A-7-6	0	0-30	55-100	50-100	45-100	35-95	28-48	12-27
	55-80	Silty clay loam	CL	A-7-6	0	0-30	55-100	50-100	45-100	35-95	28-48	12-27

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
861: Powellton silt loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Silt loam	OH	A-7-5	0	0	75-100	70-100	65-95	55-90	45-62	11-16
	3-9	Silt loam	ML	A-7-6	0	0	75-100	70-100	65-95	55-90	38-62	11-16
	9-19	Silty clay loam	CL	A-7-6	0	0-25	60-100	55-100	45-95	40-95	33-60	15-24
	19-28	Silty clay loam	CL	A-7-6	0	0-25	60-100	55-100	45-95	40-95	33-60	15-24
	28-33	Silty clay loam	CL	A-7-6	0	0-25	60-100	55-100	45-95	40-95	33-60	15-24
	33-48	Silt loam	CL	A-6	0	0-15	80-100	75-100	65-95	60-90	28-47	12-25
	48-66	Silt loam	CL	A-6	0	0-15	80-100	75-100	65-95	60-90	28-47	12-25
	66-73	Loam	CL	A-4	0	0-40	80-100	75-100	65-90	50-75	26-46	10-25
	73-83	Loam	CL-ML	A-4	0	0	100	100	65-90	70-75	21-38	6-19
	83-109	Loam	CL-ML	A-4	0	0	100	100	65-90	70-75	21-38	6-19
862: Toadtown gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-6	Gravelly loam	OH	A-7-5	0	0-10	65-100	60-100	40-95	25-75	47-67	9-16
	6-15	Silty clay loam	CL	A-7-6	0	0-2	75-100	70-100	65-95	30-90	38-64	15-26
	15-32	Silty clay	CH	A-7-6	0	0-2	75-100	70-100	65-100	55-95	52-74	29-44
	32-43	Silty clay	CH	A-7-5	0	0-2	75-100	70-100	65-100	55-95	52-74	29-44
	43-55	Cobbly silty clay loam	CL	A-7-6	0	0-30	55-100	50-100	45-100	35-95	28-48	12-27
	55-80	Silty clay loam	CL	A-7-6	0	0-30	55-100	50-100	45-100	35-95	28-48	12-27
Powellton silt loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Silt loam	OH	A-7-5	0	0	75-100	70-100	65-95	55-90	45-62	11-16
	3-9	Silt loam	ML	A-7-6	0	0	75-100	70-100	65-95	55-90	38-62	11-16
	9-19	Silty clay loam	CL	A-7-6	0	0-25	60-100	55-100	45-95	40-95	33-60	15-24
	19-28	Silty clay loam	CL	A-7-6	0	0-25	60-100	55-100	45-95	40-95	33-60	15-24
	28-33	Silty clay loam	CL	A-7-6	0	0-25	60-100	55-100	45-95	40-95	33-60	15-24
	33-48	Silt loam	CL	A-6	0	0-15	80-100	75-100	65-95	60-90	28-47	12-25
	48-66	Silt loam	CL	A-6	0	0-15	80-100	75-100	65-95	60-90	28-47	12-25
	66-73	Loam	CL	A-4	0	0-40	80-100	75-100	65-90	50-75	26-46	10-25
	73-83	Loam	CL-ML	A-4	0	0	100	100	65-90	70-75	21-38	6-19
	83-109	Loam	CL-ML	A-4	0	0	100	100	65-90	70-75	21-38	6-19

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
863: Toadtown gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-6	Gravelly loam	OH	A-7-5	0	0-10	65-100	60-100	40-95	25-75	47-67	9-16
	6-15	Silty clay loam	CL	A-7-6	0	0-2	75-100	70-100	65-95	30-90	38-64	15-26
	15-32	Silty clay	CH	A-7-6	0	0-2	75-100	70-100	65-100	55-95	52-74	29-44
	32-43	Silty clay	CH	A-7-5	0	0-2	75-100	70-100	65-100	55-95	52-74	29-44
	43-55	Cobbly silty clay loam	CL	A-7-6	0	0-30	55-100	50-100	45-100	35-95	28-48	12-27
	55-80	Silty clay loam	CL	A-7-6	0	0-30	55-100	50-100	45-100	35-95	28-48	12-27
Powellton silt loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Silt loam	OH	A-7-5	0	0	75-100	70-100	65-95	55-90	45-62	11-16
	3-9	Silt loam	ML	A-7-6	0	0	75-100	70-100	65-95	55-90	38-62	11-16
	9-19	Silty clay loam	CL	A-7-6	0	0-25	60-100	55-100	45-95	40-95	33-60	15-24
	19-28	Silty clay loam	CL	A-7-6	0	0-25	60-100	55-100	45-95	40-95	33-60	15-24
	28-33	Silty clay loam	CL	A-7-6	0	0-25	60-100	55-100	45-95	40-95	33-60	15-24
	33-48	Silt loam	CL	A-6	0	0-15	80-100	75-100	65-95	60-90	28-47	12-25
	48-66	Silt loam	CL	A-6	0	0-15	80-100	75-100	65-95	60-90	28-47	12-25
	66-73	Loam	CL	A-4	0	0-40	80-100	75-100	65-90	50-75	26-46	10-25
	73-83	Loam	CL-ML	A-4	0	0	100	100	65-90	70-75	21-38	6-19
	83-109	Loam	CL-ML	A-4	0	0	100	100	65-90	70-75	21-38	6-19
880: Sites taxadjunct gravelly loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Gravelly loam	OH	A-7-5	0	0	65-100	60-100	35-95	15-75	48-64	10-16
	3-10	Very gravelly loam	GM	A-2-7	0	0	45-100	40-100	35-100	25-80	37-57	12-20
	10-21	Gravelly silty clay	CH	A-7-6	0	0	65-100	60-100	55-100	40-95	48-66	27-36
	21-34	Gravelly silty clay	CH	A-7-6	0	0	65-100	60-100	55-100	40-95	48-66	27-36
	34-59	Silty clay	CH	A-7-6	0	0	65-100	60-100	55-100	40-95	55-66	33-40
	59-72	Silty clay	CH	A-7-6	0	0	65-100	60-100	55-100	40-95	55-66	33-40

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
880: Jocal taxadjunct gravelly loam	0-3	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	3-4	Gravelly loam	OL	A-5	0	0	75-95	70-90	50-85	30-55	41-57	5-10
	4-9	Gravelly loam	GM	A-4	0	0-10	60-100	55-100	40-95	25-75	29-49	5-14
	9-19	Gravelly loam	GC	A-2-6	0	0-25	60-100	55-100	40-100	25-80	27-46	9-21
	19-33	Gravelly loam	GC	A-2-6	0	0-25	60-100	55-100	40-100	25-80	27-46	9-21
	33-46	Very gravelly clay loam	GC	A-2-7	0	0-25	40-60	35-55	30-55	25-50	26-46	9-21
	46-52	Extremely gravelly clay loam	GP-GC	A-2-6	0	0-25	20-100	15-100	10-100	10-95	25-41	9-21
	52-68	Bedrock	---	---	0	0	---	---	---	---	---	---
881: Sites taxadjunct gravelly loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Gravelly loam	OH	A-7-5	0	0	65-100	60-100	35-95	15-75	48-64	10-16
	3-10	Very gravelly loam	GM	A-2-7	0	0	45-100	40-100	35-100	25-80	37-57	12-20
	10-21	Gravelly silty clay	CH	A-7-6	0	0	65-100	60-100	55-100	40-95	48-66	27-36
	21-34	Gravelly silty clay	CH	A-7-6	0	0	65-100	60-100	55-100	40-95	48-66	27-36
	34-59	Silty clay	CH	A-7-6	0	0	65-100	60-100	55-100	40-95	55-66	33-40
	59-72	Silty clay	CH	A-7-6	0	0	65-100	60-100	55-100	40-95	55-66	33-40
Jocal taxadjunct gravelly loam	0-3	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	3-4	Gravelly loam	OL	A-5	0	0	75-95	70-90	50-85	30-55	41-57	5-10
	4-9	Gravelly loam	GM	A-4	0	0-10	60-100	55-100	40-95	25-75	29-49	5-14
	9-19	Gravelly loam	GC	A-2-6	0	0-25	60-100	55-100	40-100	25-80	27-46	9-21
	19-33	Gravelly loam	GC	A-2-6	0	0-25	60-100	55-100	40-100	25-80	27-46	9-21
	33-46	Very gravelly clay loam	GC	A-2-7	0	0-25	40-60	35-55	30-55	25-50	26-46	9-21
	46-52	Extremely gravelly clay loam	GP-GC	A-2-6	0	0-25	20-100	15-100	10-100	10-95	25-41	9-21
	52-68	Bedrock	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
882: Sites taxadjunct gravelly loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Gravelly loam	OH	A-7-5	0	0	65-100	60-100	35-95	15-75	48-64	10-16
	3-10	Very gravelly loam	GM	A-2-7	0	0	45-100	40-100	35-100	25-80	37-57	12-20
	10-21	Gravelly silty clay	CH	A-7-6	0	0	65-100	60-100	55-100	40-95	48-66	27-36
	21-34	Gravelly silty clay	CH	A-7-6	0	0	65-100	60-100	55-100	40-95	48-66	27-36
	34-59	Silty clay	CH	A-7-6	0	0	65-100	60-100	55-100	40-95	55-66	33-40
	59-72	Silty clay	CH	A-7-6	0	0	65-100	60-100	55-100	40-95	55-66	33-40
Jocal taxadjunct gravelly loam	0-3	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	3-4	Gravelly loam	OL	A-5	0	0	75-95	70-90	50-85	30-55	41-57	5-10
	4-9	Gravelly loam	GM	A-4	0	0-10	60-100	55-100	40-95	25-75	29-49	5-14
	9-19	Gravelly loam	GC	A-2-6	0	0-25	60-100	55-100	40-100	25-80	27-46	9-21
	19-33	Gravelly loam	GC	A-2-6	0	0-25	60-100	55-100	40-100	25-80	27-46	9-21
	33-46	Very gravelly clay loam	GC	A-2-7	0	0-25	40-60	35-55	30-55	25-50	26-46	9-21
	46-52	Extremely gravelly clay loam	GP-GC	A-2-6	0	0-25	20-100	15-100	10-100	10-95	25-41	9-21
	52-68	Bedrock	---	---	0	0	---	---	---	---	---	---
883: Sites taxadjunct gravelly loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	1-3	Gravelly loam	OH	A-7-5	0	0	65-100	60-100	35-95	15-75	48-64	10-16
	3-10	Very gravelly loam	GM	A-2-7	0	0	45-100	40-100	35-100	25-80	37-57	12-20
	10-21	Gravelly silty clay	CH	A-7-6	0	0	65-100	60-100	55-100	40-95	48-66	27-36
	21-34	Gravelly silty clay	CH	A-7-6	0	0	65-100	60-100	55-100	40-95	48-66	27-36
	34-59	Silty clay	CH	A-7-6	0	0	65-100	60-100	55-100	40-95	55-66	33-40
	59-72	Silty clay	CH	A-7-6	0	0	65-100	60-100	55-100	40-95	55-66	33-40

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
883: Jocal taxadjunct gravelly loam	0-3	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	3-4	Gravelly loam	OL	A-5	0	0	75-95	70-90	50-85	30-55	41-57	5-10
	4-9	Gravelly loam	GM	A-4	0	0-10	60-100	55-100	40-95	25-75	29-49	5-14
	9-19	Gravelly loam	GC	A-2-6	0	0-25	60-100	55-100	40-100	25-80	27-46	9-21
	19-33	Gravelly loam	GC	A-2-6	0	0-25	60-100	55-100	40-100	25-80	27-46	9-21
	33-46	Very gravelly clay loam	GC	A-2-7	0	0-25	40-60	35-55	30-55	25-50	26-46	9-21
	46-52	Extremely gravelly clay loam	GP-GC	A-2-6	0	0-25	20-100	15-100	10-100	10-95	25-41	9-21
	52-68	Bedrock	---	---	0	0	---	---	---	---	---	---
885: Rogerville silt loam-----	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	2-7	Silt loam	MH	A-7-5	0	0	85-95	75-90	65-90	55-80	28-58	6-18
	7-13	Silty clay loam	MH	A-7-5	0	0	40-90	35-85	30-80	25-75	46-69	21-26
	13-24	Silty clay	CH	A-7-6	0	0-15	55-100	50-100	45-95	35-90	46-75	25-48
	24-34	Gravelly silty clay loam	CL	A-7-6	0	0-15	55-100	50-100	45-95	35-90	46-75	25-48
	34-42	Gravelly clay loam	CL	A-7-6	0	0-15	55-100	50-100	45-95	35-90	46-75	25-48
	42-51	Extremely gravelly clay loam	SC	A-2-6	0	0-30	20-100	10-90	5-85	5-80	38-64	20-40
	51-55	Bedrock	---	---	0	0	---	---	---	---	---	---
886: Rogerville silt loam-----	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	2-7	Silt loam	MH	A-7-5	0	0	85-95	75-90	65-90	55-80	28-58	6-18
	7-13	Silty clay loam	MH	A-7-5	0	0	40-90	35-85	30-80	25-75	46-69	21-26
	13-24	Silty clay	CH	A-7-6	0	0-15	55-100	50-100	45-95	35-90	46-75	25-48
	24-34	Gravelly silty clay loam	CL	A-7-6	0	0-15	55-100	50-100	45-95	35-90	46-75	25-48
	34-42	Gravelly clay loam	CL	A-7-6	0	0-15	55-100	50-100	45-95	35-90	46-75	25-48
	42-51	Extremely gravelly clay loam	SC	A-2-6	0	0-30	20-100	10-90	5-85	5-80	38-64	20-40
	51-55	Bedrock	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
892: Rogerville silt loam-----	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	2-7	Silt loam	MH	A-7-5	0	0	85-95	75-90	65-90	55-80	28-58	6-18
	7-13	Silty clay loam	MH	A-7-5	0	0	40-90	35-85	30-80	25-75	46-69	21-26
	13-24	Silty clay	CH	A-7-6	0	0-15	55-100	50-100	45-95	35-90	46-75	25-48
	24-34	Gravelly silty clay loam	CL	A-7-6	0	0-15	55-100	50-100	45-95	35-90	46-75	25-48
	34-42	Gravelly clay loam	CL	A-7-6	0	0-15	55-100	50-100	45-95	35-90	46-75	25-48
	42-51	Extremely gravelly clay loam	SC	A-2-6	0	0-30	20-100	10-90	5-85	5-80	38-64	20-40
	51-55	Bedrock	---	---	0	0	---	---	---	---	---	---
893: Rogerville silt loam-----	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	2-7	Silt loam	MH	A-7-5	0	0	85-95	75-90	65-90	55-80	28-58	6-18
	7-13	Silty clay loam	MH	A-7-5	0	0	40-90	35-85	30-80	25-75	46-69	21-26
	13-24	Silty clay	CH	A-7-6	0	0-15	55-100	50-100	45-95	35-90	46-75	25-48
	24-34	Gravelly silty clay loam	CL	A-7-6	0	0-15	55-100	50-100	45-95	35-90	46-75	25-48
	34-42	Gravelly clay loam	CL	A-7-6	0	0-15	55-100	50-100	45-95	35-90	46-75	25-48
	42-51	Extremely gravelly clay loam	SC	A-2-6	0	0-30	20-100	10-90	5-85	5-80	38-64	20-40
	51-55	Bedrock	---	---	0	0	---	---	---	---	---	---
902: Lava flows, Lovejoy basalt. Lumpkin gravelly medial sandy loam-----	0-3	Gravelly medial sandy loam	---	---	0	0	30-75	25-70	15-50	10-30	---	---
	3-8	Extremely gravelly medial fine sandy loam	---	---	0	10-100	30-95	25-90	15-65	10-35	---	---
	8-14	Extremely cobbly medial sandy loam	---	---	0	10-100	30-95	25-90	15-65	10-35	---	---
	14	Bedrock	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
903: Mudwash gravelly medial sandy loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-4	Moderately decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	4-8	Gravelly medial sandy loam	---	---	0	10-15	75-95	70-90	40-85	20-70	---	---
	8-13	Gravelly medial sandy loam	---	---	0	10-15	75-95	70-90	40-85	20-70	---	---
	13-26	Gravelly medial sandy loam	---	---	0	0-10	65-95	60-90	35-85	10-65	---	---
	26-35	Gravelly loam	SC	A-6	0	0-30	75-100	70-100	40-95	20-90	29-58	12-27
	35-52	Gravelly loam	SC	A-6	0	0-30	75-100	70-100	40-95	20-90	29-58	12-27
	52-72	Extremely gravelly loam	GP-GC	A-2-6	0	0	15-95	10-90	5-85	0-85	27-40	9-19
	72-89	Bedrock	---	---	0	0	---	---	---	---	---	---
Timberisland very gravelly medial sandy loam-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	3-6	Very gravelly medial sandy loam	---	---	0-15	0-15	50-95	45-90	25-65	15-35	---	---
	6-14	Very gravelly medial sandy loam	---	---	0-15	0-15	50-95	45-90	25-65	15-35	---	---
	14-25	Very gravelly medial sandy loam	---	---	0-25	0-30	50-60	45-55	25-40	15-25	---	---
	25-35	Extremely cobblely medial sandy loam	---	---	0-15	40-90	30-90	25-85	15-60	10-35	---	---
	35-48	Extremely cobblely medial sandy loam	---	---	0-15	40-90	30-90	25-85	15-60	10-35	---	---
	48	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index	
			Unified	AASHTO	>10	3-10	4	10	40	200			
					inches	inches							
	In				Pct	Pct					Pct		
903: Lavatop gravelly medial fine sandy loam-----	0-0.5	Slightly decomposed plant material	PT	---	---	0	0	---	---	---	---	---	---
	0.5-4	Gravelly medial fine sandy loam	---	---	---	0	0-55	50-90	45-85	25-60	15-35	---	---
	4-15	Very gravelly medial sandy loam	---	---	---	0-75	0-65	50-90	45-55	25-40	15-25	---	---
	15-26	Extremely gravelly medial sandy loam	---	---	---	0-75	0-65	50-90	45-55	25-50	15-25	---	---
	26	Bedrock	---	---	---	0	0	---	---	---	---	---	---
904: Lava flows, Lovejoy basalt. Lavatop gravelly medial fine sandy loam-----	0-0.5	Slightly decomposed plant material	PT	---	---	0	0	---	---	---	---	---	---
	0.5-4	Gravelly medial fine sandy loam	---	---	---	0	0-55	50-90	45-85	25-60	15-35	---	---
	4-15	Very gravelly medial sandy loam	---	---	---	0-75	0-65	50-90	45-55	25-40	15-25	---	---
	15-26	Extremely gravelly medial sandy loam	---	---	---	0-75	0-65	50-90	45-55	25-50	15-25	---	---
	26	Bedrock	---	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
905: Lava flows, Lovejoy basalt.												
Lumpkin gravelly medial sandy loam-----	0-3	Gravelly medial sandy loam	---	---	0	0	30-75	25-70	15-50	10-30	---	---
	3-8	Extremely gravelly medial fine sandy loam	---	---	0	10-100	30-95	25-90	15-65	10-35	---	---
	8-14	Extremely cobbly medial sandy loam	---	---	0	10-100	30-95	25-90	15-65	10-35	---	---
	14	Bedrock	---	---	0	0	---	---	---	---	---	---
906: Lava flows, Lovejoy basalt.												
Lumpkin gravelly medial sandy loam-----	0-3	Gravelly medial sandy loam	---	---	0	0	30-75	25-70	15-50	10-30	---	---
	3-8	Extremely gravelly medial fine sandy loam	---	---	0	10-100	30-95	25-90	15-65	10-35	---	---
	8-14	Extremely cobbly medial sandy loam	---	---	0	10-100	30-95	25-90	15-65	10-35	---	---
	14	Bedrock	---	---	0	0	---	---	---	---	---	---
911: Endoaquolls loam-----	0-3	Loam	CL	A-6	0	0	95-100	90-100	70-100	35-90	26-39	8-18
	3-8	Loam	CL	A-6	0	0	95-100	90-100	70-100	35-90	26-39	8-18
	8-17	Clay loam	CL	A-6	0	0	95-100	90-100	70-100	35-90	26-39	8-18
	17-28	Silty clay	CL	A-7-6	0	0	95-100	90-100	80-100	65-95	44-57	22-32
	28-43	Silty clay	CH	A-7-6	0	0	95-100	90-100	80-100	65-95	44-57	22-32
	43-58	Loam	CL	A-6	0	0-15	90-100	85-100	75-100	30-95	30-57	11-32
	58-73	Sandy clay loam	CL	A-6	0	0-15	90-100	85-100	75-100	30-95	30-57	11-32

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
923: Powderhouse medial sandy loam--	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	2-4	Medial sandy loam	---	---	0-15	0-10	75-95	70-90	40-65	20-35	---	---
	4-11	Medial sandy loam	---	---	0-15	0-10	75-95	70-90	40-65	20-35	---	---
	11-27	Very cobbly medial sandy loam	---	---	0-30	0-50	50-75	45-70	25-50	20-30	---	---
	27-36	Very gravelly medial coarse sandy loam	---	---	0-30	0-50	30-40	25-35	15-25	10-15	---	---
	36-82	Bedrock	---	---	0-15	15-65	---	---	---	---	---	---
McNair medial coarse sandy loam	0-3	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	3-6	Medial coarse sandy loam	---	---	0	0	90-95	85-90	50-65	25-35	---	---
	6-16	Gravelly medial coarse sandy loam	---	---	0-10	0-10	90-95	85-90	50-65	25-35	---	---
	16-25	Very gravelly medial sandy loam	---	---	0-15	0-45	40-60	35-55	20-35	10-20	---	---
	25-33	Very gravelly medial sandy loam	---	---	0-15	0-45	40-55	35-50	20-35	10-20	---	---
	33-48	Very gravelly medial sandy loam	---	---	0-15	0-45	40-55	35-50	20-35	10-20	---	---
	48-57	Extremely gravelly coarse sandy loam	GP-GM	A-1-a	0-40	0-15	15-30	10-25	5-20	0-15	27-48	4-17
	57-88	Bedrock	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
923: Greenwell medial sandy loam----	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	3-5	Medial sandy loam	---	---	0	0	65-100	60-100	40-70	25-40	---	---
	5-10	Medial sandy loam	---	---	0	0	65-100	60-100	40-70	25-40	---	---
	10-18	Gravelly medial sandy loam	---	---	0	0-10	65-100	60-100	40-70	25-40	---	---
	18-23	Medial sandy loam	---	---	0	0-15	60-100	50-100	35-70	20-40	---	---
	23-32	Very gravelly medial sandy loam	---	---	0	0-15	30-55	25-50	20-35	10-20	---	---
	32	Bedrock	---	---	0	0	---	---	---	---	---	---
924: Powderhouse medial sandy loam--	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	2-4	Medial sandy loam	---	---	0-15	0-10	75-95	70-90	40-65	20-35	---	---
	4-11	Medial sandy loam	---	---	0-15	0-10	75-95	70-90	40-65	20-35	---	---
	11-27	Very cobbly medial sandy loam	---	---	0-30	0-50	50-75	45-70	25-50	20-30	---	---
	27-36	Very gravelly medial coarse sandy loam	---	---	0-30	0-50	30-40	25-35	15-25	10-15	---	---
	36-82	Bedrock	---	---	0-15	15-65	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
924: McNair medial coarse sandy loam	0-3	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	3-6	Medial coarse sandy loam	---	---	0	0	90-95	85-90	50-65	25-35	---	---
	6-16	Gravelly medial coarse sandy loam	---	---	0-10	0-10	90-95	85-90	50-65	25-35	---	---
	16-25	Very gravelly medial sandy loam	---	---	0-15	0-45	40-60	35-55	20-35	10-20	---	---
	25-33	Very gravelly medial sandy loam	---	---	0-15	0-45	40-55	35-50	20-35	10-20	---	---
	33-48	Very gravelly medial sandy loam	---	---	0-15	0-45	40-55	35-50	20-35	10-20	---	---
	48-57	Extremely gravelly coarse sandy loam	GP-GM	A-1-a	0-40	0-15	15-30	10-25	5-20	0-15	27-48	4-17
	57-88	Bedrock	---	---	0	0	---	---	---	---	---	---
Greenwell medial sandy loam----	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	3-5	Medial sandy loam	---	---	0	0	65-100	60-100	40-70	25-40	---	---
	5-10	Medial sandy loam	---	---	0	0	65-100	60-100	40-70	25-40	---	---
	10-18	Gravelly medial sandy loam	---	---	0	0-10	65-100	60-100	40-70	25-40	---	---
	18-23	Medial sandy loam	---	---	0	0-15	60-100	50-100	35-70	20-40	---	---
	23-32	Very gravelly medial sandy loam	---	---	0	0-15	30-55	25-50	20-35	10-20	---	---
	32	Bedrock	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
925: Powderhouse medial sandy loam--	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	2-4	Medial sandy loam	---	---	0-15	0-10	75-95	70-90	40-65	20-35	---	---
	4-11	Medial sandy loam	---	---	0-15	0-10	75-95	70-90	40-65	20-35	---	---
	11-27	Very cobbly medial sandy loam	---	---	0-30	0-50	50-75	45-70	25-50	20-30	---	---
	27-36	Very gravelly medial coarse sandy loam	---	---	0-30	0-50	30-40	25-35	15-25	10-15	---	---
	36-82	Bedrock	---	---	0-15	15-65	---	---	---	---	---	---
McNair medial coarse sandy loam	0-3	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	3-6	Medial coarse sandy loam	---	---	0	0	90-95	85-90	50-65	25-35	---	---
	6-16	Gravelly medial coarse sandy loam	---	---	0-10	0-10	90-95	85-90	50-65	25-35	---	---
	16-25	Very gravelly medial sandy loam	---	---	0-15	0-45	40-60	35-55	20-35	10-20	---	---
	25-33	Very gravelly medial sandy loam	---	---	0-15	0-45	40-55	35-50	20-35	10-20	---	---
	33-48	Very gravelly medial sandy loam	---	---	0-15	0-45	40-55	35-50	20-35	10-20	---	---
	48-57	Extremely gravelly coarse sandy loam	GP-GM	A-1-a	0-40	0-15	15-30	10-25	5-20	0-15	27-48	4-17
	57-88	Bedrock	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
925: Greenwell medial sandy loam----	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	3-5	Medial sandy loam	---	---	0	0	65-100	60-100	40-70	25-40	---	---
	5-10	Medial sandy loam	---	---	0	0	65-100	60-100	40-70	25-40	---	---
	10-18	Gravelly medial sandy loam	---	---	0	0-10	65-100	60-100	40-70	25-40	---	---
	18-23	Medial sandy loam	---	---	0	0-15	60-100	50-100	35-70	20-40	---	---
	23-32	Very gravelly medial sandy loam	---	---	0	0-15	30-55	25-50	20-35	10-20	---	---
	32	Bedrock	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
930: Shakeridge gravelly medial coarse sandy loam-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-4	Gravelly medial coarse sandy loam	---	---	0	0-30	30-75	25-70	15-50	10-30	---	---
	4-7	Gravelly medial coarse sandy loam	---	---	0	0-30	30-75	25-70	15-50	10-30	---	---
	7-19	Extremely gravelly medial coarse sandy loam	---	---	0-80	0-65	25-90	20-85	10-60	5-35	---	---
	19-25	Extremely gravelly medial coarse sandy loam	---	---	0-80	10-65	25-90	20-85	10-60	5-35	---	---
	25-36	Very gravelly medial coarse sandy loam	---	---	0-80	10-65	25-90	20-85	10-60	5-35	---	---
	36-55	Extremely gravelly medial coarse sandy loam	---	---	0-80	10-65	25-90	20-85	10-60	5-35	---	---
	55-71	Extremely gravelly medial coarse sandy loam	---	---	0-80	10-65	25-90	20-85	10-60	5-35	---	---
	71-87	Extremely gravelly coarse sandy loam	GP-GC	A-2-6	0-80	10-65	25-90	20-85	10-60	5-35	18-34	2-12

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
930: Timberisland very gravelly medial sandy loam-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	3-6	Very gravelly medial sandy loam	---	---	0-15	0-15	50-95	45-90	25-65	15-35	---	---
	6-14	Very gravelly medial sandy loam	---	---	0-15	0-15	50-95	45-90	25-65	15-35	---	---
	14-25	Very gravelly medial sandy loam	---	---	0-25	0-30	50-60	45-55	25-40	15-25	---	---
	25-35	Extremely cobble medial sandy loam	---	---	0-15	40-90	30-90	25-85	15-60	10-35	---	---
	35-48	Extremely cobble medial sandy loam	---	---	0-15	40-90	30-90	25-85	15-60	10-35	---	---
	48	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
931: Shakeridge gravelly medial coarse sandy loam-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-4	Gravelly medial coarse sandy loam	---	---	0	0-30	30-75	25-70	15-50	10-30	---	---
	4-7	Gravelly medial coarse sandy loam	---	---	0	0-30	30-75	25-70	15-50	10-30	---	---
	7-19	Extremely gravelly medial coarse sandy loam	---	---	0-80	0-65	25-90	20-85	10-60	5-35	---	---
	19-25	Extremely gravelly medial coarse sandy loam	---	---	0-80	10-65	25-90	20-85	10-60	5-35	---	---
	25-36	Very gravelly medial coarse sandy loam	---	---	0-80	10-65	25-90	20-85	10-60	5-35	---	---
	36-55	Extremely gravelly medial coarse sandy loam	---	---	0-80	10-65	25-90	20-85	10-60	5-35	---	---
	55-71	Extremely gravelly medial coarse sandy loam	---	---	0-80	10-65	25-90	20-85	10-60	5-35	---	---
	71-87	Extremely gravelly coarse sandy loam	GP-GC	A-2-6	0-80	10-65	25-90	20-85	10-60	5-35	18-34	2-12

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
931: Mudwash gravelly medial sandy loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-4	Moderately decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	4-8	Gravelly medial sandy loam	---	---	0	10-15	75-95	70-90	40-85	20-70	---	---
	8-13	Gravelly medial sandy loam	---	---	0	10-15	75-95	70-90	40-85	20-70	---	---
	13-26	Gravelly medial sandy loam	---	---	0	0-10	65-95	60-90	35-85	10-65	---	---
	26-35	Gravelly loam	SC	A-6	0	0-30	75-100	70-100	40-95	20-90	29-58	12-27
	35-52	Gravelly loam	SC	A-6	0	0-30	75-100	70-100	40-95	20-90	29-58	12-27
	52-72	Extremely gravelly loam	GP-GC	A-2-6	0	0	15-95	10-90	5-85	0-85	27-40	9-19
	72-89	Bedrock	---	---	0	0	---	---	---	---	---	---
Timberisland very gravelly medial sandy loam-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	3-6	Very gravelly medial sandy loam	---	---	0-15	0-15	50-95	45-90	25-65	15-35	---	---
	6-14	Very gravelly medial sandy loam	---	---	0-15	0-15	50-95	45-90	25-65	15-35	---	---
	14-25	Very gravelly medial sandy loam	---	---	0-25	0-30	50-60	45-55	25-40	15-25	---	---
	25-35	Extremely cobblely medial sandy loam	---	---	0-15	40-90	30-90	25-85	15-60	10-35	---	---
	35-48	Extremely cobblely medial sandy loam	---	---	0-15	40-90	30-90	25-85	15-60	10-35	---	---
	48	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches					Pct	Pct
	In											
932: Shakeridge gravelly medial coarse sandy loam-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-4	Gravelly medial coarse sandy loam	---	---	0	0-30	30-75	25-70	15-50	10-30	---	---
	4-7	Gravelly medial coarse sandy loam	---	---	0	0-30	30-75	25-70	15-50	10-30	---	---
	7-19	Extremely gravelly medial coarse sandy loam	---	---	0-80	0-65	25-90	20-85	10-60	5-35	---	---
	19-25	Extremely gravelly medial coarse sandy loam	---	---	0-80	10-65	25-90	20-85	10-60	5-35	---	---
	25-36	Very gravelly medial coarse sandy loam	---	---	0-80	10-65	25-90	20-85	10-60	5-35	---	---
	36-55	Extremely gravelly medial coarse sandy loam	---	---	0-80	10-65	25-90	20-85	10-60	5-35	---	---
	55-71	Extremely gravelly medial coarse sandy loam	---	---	0-80	10-65	25-90	20-85	10-60	5-35	---	---
	71-87	Extremely gravelly coarse sandy loam	GP-GC	A-2-6	0-80	10-65	25-90	20-85	10-60	5-35	18-34	2-12

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
932: Mudwash gravelly medial sandy loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-4	Moderately decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	4-8	Gravelly medial sandy loam	---	---	0	10-15	75-95	70-90	40-85	20-70	---	---
	8-13	Gravelly medial sandy loam	---	---	0	10-15	75-95	70-90	40-85	20-70	---	---
	13-26	Gravelly medial sandy loam	---	---	0	0-10	65-95	60-90	35-85	10-65	---	---
	26-35	Gravelly loam	SC	A-6	0	0-30	75-100	70-100	40-95	20-90	29-58	12-27
	35-52	Gravelly loam	SC	A-6	0	0-30	75-100	70-100	40-95	20-90	29-58	12-27
	52-72	Extremely gravelly loam	GP-GC	A-2-6	0	0	15-95	10-90	5-85	0-85	27-40	9-19
	72-89	Bedrock	---	---	0	0	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
933: Shakeridge gravelly medial coarse sandy loam-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-4	Gravelly medial coarse sandy loam	---	---	0	0-30	30-75	25-70	15-50	10-30	---	---
	4-7	Gravelly medial coarse sandy loam	---	---	0	0-30	30-75	25-70	15-50	10-30	---	---
	7-19	Extremely gravelly medial coarse sandy loam	---	---	0-80	0-65	25-90	20-85	10-60	5-35	---	---
	19-25	Extremely gravelly medial coarse sandy loam	---	---	0-80	10-65	25-90	20-85	10-60	5-35	---	---
	25-36	Very gravelly medial coarse sandy loam	---	---	0-80	10-65	25-90	20-85	10-60	5-35	---	---
	36-55	Extremely gravelly medial coarse sandy loam	---	---	0-80	10-65	25-90	20-85	10-60	5-35	---	---
	55-71	Extremely gravelly medial coarse sandy loam	---	---	0-80	10-65	25-90	20-85	10-60	5-35	---	---
	71-87	Extremely gravelly coarse sandy loam	GP-GC	A-2-6	0-80	10-65	25-90	20-85	10-60	5-35	18-34	2-12

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
934: Mudwash gravelly medial sandy loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-4	Moderately decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	4-8	Gravelly medial sandy loam	---	---	0	10-15	75-95	70-90	40-85	20-70	---	---
	8-13	Gravelly medial sandy loam	---	---	0	10-15	75-95	70-90	40-85	20-70	---	---
	13-26	Gravelly medial sandy loam	---	---	0	0-10	65-95	60-90	35-85	10-65	---	---
	26-35	Gravelly loam	SC	A-6	0	0-30	75-100	70-100	40-95	20-90	29-58	12-27
	35-52	Gravelly loam	SC	A-6	0	0-30	75-100	70-100	40-95	20-90	29-58	12-27
	52-72	Extremely gravelly loam	GP-GC	A-2-6	0	0	15-95	10-90	5-85	0-85	27-40	9-19
	72-89	Bedrock	---	---	0	0	---	---	---	---	---	---
939: Fluvaquentic Humaquepts very fine sandy loam-----	0-7	Very fine sandy loam	ML	A-4	0	0	90-100	85-100	70-95	35-65	33-47	7-9
	7-15	Very fine sandy loam	ML	A-4	0	0	90-100	85-100	70-95	35-65	33-47	7-9
	15-22	Loam	CL	A-6	0	0	95-100	90-100	75-95	55-75	31-45	13-17
	22-29	Loam	CL	A-6	0	0	95-100	90-100	75-95	55-75	31-39	13-17
	29-36	Loam	CL	A-6	0	0	95-100	90-100	75-95	55-75	30-37	13-17
	36-45	Gravelly clay loam	CL	A-6	0	0	60-75	55-70	50-65	40-55	38-42	19-21
	45-60	Gravelly loam	GC	A-2-6	0	0	45-60	40-55	35-50	25-40	30-38	13-19
940: Dejonah gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-4	Gravelly loam	SM	A-5	0	0-10	50-95	45-90	25-85	15-70	31-64	5-11
	4-10	Loam	ML	A-7-5	0	0-10	75-95	70-90	40-85	20-70	32-56	11-16
	10-16	Loam	ML	A-7-6	0	0-25	60-100	55-100	40-95	25-75	29-47	9-18
	16-28	Loam	CL	A-6	0	0-25	60-100	55-100	40-95	25-75	27-41	9-19
	28-37	Loam	CL	A-4	0	0-25	60-100	55-100	40-95	25-75	27-41	9-19
	37-53	Sandy loam	SC-SM	A-2-4	0	0-30	20-100	10-100	5-95	0-75	21-34	4-13
	53-60	Loam	CL	A-4	0	0-30	20-100	10-100	5-95	0-75	20-31	4-13

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
940: Stagpoint loam-----	0-0.5	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	0.5-4	Loam	SM	A-2-5	0	0	55-95	50-90	30-85	15-70	36-64	4-11
	4-10	Gravelly loam	SM	A-5	0	0-25	50-90	45-85	25-80	15-65	38-71	5-16
	10-17	Very gravelly loam	GM	A-2-6	0	0-25	50-90	45-85	25-80	15-65	25-47	6-17
	17-23	Very gravelly loam	GC	A-2-6	0-45	10-65	25-90	20-85	10-80	5-70	29-52	9-22
	23-34	Extremely cobbly loam	GC	A-2-6	0-45	10-65	25-90	20-85	10-80	5-70	27-46	9-22
	34-49	Extremely cobbly loam	CL	A-4	10-65	10-65	15-100	10-100	5-70	0-75	24-32	7-12
	49-64	Extremely stony loam	CL	A-4	10-65	10-65	15-100	10-100	5-95	0-75	24-32	7-12
	64-86	Very stony loam	CL-ML	A-4	45-65	10-15	15-100	10-100	5-95	0-75	20-27	5-9
941: Dejonah gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-4	Gravelly loam	SM	A-5	0	0-10	50-95	45-90	25-85	15-70	31-64	5-11
	4-10	Loam	ML	A-7-5	0	0-10	75-95	70-90	40-85	20-70	32-56	11-16
	10-16	Loam	ML	A-7-6	0	0-25	60-100	55-100	40-95	25-75	29-47	9-18
	16-28	Loam	CL	A-6	0	0-25	60-100	55-100	40-95	25-75	27-41	9-19
	28-37	Loam	CL	A-4	0	0-25	60-100	55-100	40-95	25-75	27-41	9-19
	37-53	Sandy loam	SC-SM	A-2-4	0	0-30	20-100	10-100	5-95	0-75	21-34	4-13
	53-60	Loam	CL	A-4	0	0-30	20-100	10-100	5-95	0-75	20-31	4-13
Stagpoint loam-----	0-0.5	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	0.5-4	Loam	SM	A-2-5	0	0	55-95	50-90	30-85	15-70	36-64	4-11
	4-10	Gravelly loam	SM	A-5	0	0-25	50-90	45-85	25-80	15-65	38-71	5-16
	10-17	Very gravelly loam	GM	A-2-6	0	0-25	50-90	45-85	25-80	15-65	25-47	6-17
	17-23	Very gravelly loam	GC	A-2-6	0-45	10-65	25-90	20-85	10-80	5-70	29-52	9-22
	23-34	Extremely cobbly loam	GC	A-2-6	0-45	10-65	25-90	20-85	10-80	5-70	27-46	9-22
	34-49	Extremely cobbly loam	CL	A-4	10-65	10-65	15-100	10-100	5-70	0-75	24-32	7-12
	49-64	Extremely stony loam	CL	A-4	10-65	10-65	15-100	10-100	5-95	0-75	24-32	7-12
	64-86	Very stony loam	CL-ML	A-4	45-65	10-15	15-100	10-100	5-95	0-75	20-27	5-9

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
942: Stagpoint loam-----	0-0.5	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	0.5-4	Loam	SM	A-2-5	0	0	55-95	50-90	30-85	15-70	36-64	4-11
	4-10	Gravelly loam	SM	A-5	0	0-25	50-90	45-85	25-80	15-65	38-71	5-16
	10-17	Very gravelly loam	GM	A-2-6	0	0-25	50-90	45-85	25-80	15-65	25-47	6-17
	17-23	Very gravelly loam	GC	A-2-6	0-45	10-65	25-90	20-85	10-80	5-70	29-52	9-22
	23-34	Extremely cobbly loam	GC	A-2-6	0-45	10-65	25-90	20-85	10-80	5-70	27-46	9-22
	34-49	Extremely cobbly loam	CL	A-4	10-65	10-65	15-100	10-100	5-70	0-75	24-32	7-12
	49-64	Extremely stony loam	CL	A-4	10-65	10-65	15-100	10-100	5-95	0-75	24-32	7-12
	64-86	Very stony loam	CL-ML	A-4	45-65	10-15	15-100	10-100	5-95	0-75	20-27	5-9
Dejonah gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-4	Gravelly loam	SM	A-5	0	0-10	50-95	45-90	25-85	15-70	31-64	5-11
	4-10	Loam	ML	A-7-5	0	0-10	75-95	70-90	40-85	20-70	32-56	11-16
	10-16	Loam	ML	A-7-6	0	0-25	60-100	55-100	40-95	25-75	29-47	9-18
	16-28	Loam	CL	A-6	0	0-25	60-100	55-100	40-95	25-75	27-41	9-19
	28-37	Loam	CL	A-4	0	0-25	60-100	55-100	40-95	25-75	27-41	9-19
	37-53	Sandy loam	SC-SM	A-2-4	0	0-30	20-100	10-100	5-95	0-75	21-34	4-13
	53-60	Loam	CL	A-4	0	0-30	20-100	10-100	5-95	0-75	20-31	4-13
948: Stagpoint loam-----	0-0.5	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	0.5-4	Loam	SM	A-2-5	0	0	55-95	50-90	30-85	15-70	36-64	4-11
	4-10	Gravelly loam	SM	A-5	0	0-25	50-90	45-85	25-80	15-65	38-71	5-16
	10-17	Very gravelly loam	GM	A-2-6	0	0-25	50-90	45-85	25-80	15-65	25-47	6-17
	17-23	Very gravelly loam	GC	A-2-6	0-45	10-65	25-90	20-85	10-80	5-70	29-52	9-22
	23-34	Extremely cobbly loam	GC	A-2-6	0-45	10-65	25-90	20-85	10-80	5-70	27-46	9-22
	34-49	Extremely cobbly loam	CL	A-4	10-65	10-65	15-100	10-100	5-70	0-75	24-32	7-12
	49-64	Extremely stony loam	CL	A-4	10-65	10-65	15-100	10-100	5-95	0-75	24-32	7-12
	64-86	Very stony loam	CL-ML	A-4	45-65	10-15	15-100	10-100	5-95	0-75	20-27	5-9

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
948: Dejonah gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	1-4	Gravelly loam	SM	A-5	0	0-10	50-95	45-90	25-85	15-70	31-64	5-11
	4-10	Loam	ML	A-7-5	0	0-10	75-95	70-90	40-85	20-70	32-56	11-16
	10-16	Loam	ML	A-7-6	0	0-25	60-100	55-100	40-95	25-75	29-47	9-18
	16-28	Loam	CL	A-6	0	0-25	60-100	55-100	40-95	25-75	27-41	9-19
	28-37	Loam	CL	A-4	0	0-25	60-100	55-100	40-95	25-75	27-41	9-19
	37-53	Sandy loam	SC-SM	A-2-4	0	0-30	20-100	10-100	5-95	0-75	21-34	4-13
	53-60	Loam	CL	A-4	0	0-30	20-100	10-100	5-95	0-75	20-31	4-13
949: Rogerville taxadjunct fine sandy loam-----	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	2-4	Fine sandy loam	ML	A-4	0	0	90-100	85-100	55-85	---	30-44	4-7
	4-7	Gravelly sandy loam	GM	A-2-4	0	0	50-75	45-70	35-65	---	36-53	9-14
	7-21	Very gravelly sandy loam	GM	A-2-6	0	0-15	50-75	45-70	35-65	---	32-53	9-14
	21-26	Very gravelly loam	GC	A-2-6	0	0-15	50-75	45-70	35-65	---	32-53	9-15
	26-33	Gravelly silt loam	CL	A-6	0-15	0-15	75-90	70-85	65-80	---	36-48	16-19
	33-44	Gravelly silt loam	CL	A-6	0-15	0-15	75-90	70-85	65-80	---	36-48	16-19
	44-57	Gravelly silty clay loam	CL	A-6	0-15	0-15	75-100	70-100	65-95	---	36-48	16-19
	57	Bedrock	---	---	---	---	---	---	---	---	---	---
950: Lumpkin taxadjunct very gravelly medial very fine sandy loam-----	0-4	Very gravelly medial very fine sandy loam	---	---	0	0-15	30-55	25-50	30-45	15-30	---	---
	4-9	Very gravelly medial very fine sandy loam	---	---	0	0-15	30-55	25-40	30-35	15-25	---	---
	9	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
950: Rock outcrop, olivine basalt, andesite, or mudflow.												
Powderhouse medial sandy loam--	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	2-4	Medial sandy loam	---	---	0-15	0-10	75-95	70-90	40-65	20-35	---	---
	4-11	Medial sandy loam	---	---	0-15	0-10	75-95	70-90	40-65	20-35	---	---
	11-27	Very cobbly medial sandy loam	---	---	0-30	0-50	50-75	45-70	25-50	20-30	---	---
	27-36	Very gravelly medial coarse sandy loam	---	---	0-30	0-50	30-40	25-35	15-25	10-15	---	---
	36-82	Bedrock	---	---	0-15	15-65	---	---	---	---	---	---
951: Lumpkin taxadjunct very gravelly medial very fine sandy loam-----	0-4	Very gravelly medial very fine sandy loam	---	---	0	0-15	30-55	25-50	30-45	15-30	---	---
	4-9	Very gravelly medial very fine sandy loam	---	---	0	0-15	30-55	25-40	30-35	15-25	---	---
	9	Bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop, andesite.												

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
951: Powderhouse medial sandy loam--	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---	---	---	---
	2-4	Medial sandy loam	---	---	0-15	0-10	75-95	70-90	40-65	20-35	---	---
	4-11	Medial sandy loam	---	---	0-15	0-10	75-95	70-90	40-65	20-35	---	---
	11-27	Very cobbly medial sandy loam	---	---	0-30	0-50	50-75	45-70	25-50	20-30	---	---
	27-36	Very gravelly medial coarse sandy loam	---	---	0-30	0-50	30-40	25-35	15-25	10-15	---	---
	36-82	Bedrock	---	---	0-15	15-65	---	---	---	---	---	---
960: Surnuf gravelly loam, high elevation-----	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	0.5-6	Gravelly loam	GM	A-4	0	0	65-80	60-75	50-70	35-55	29-41	5-11
	6-10	Gravelly loam	SC	A-6	0	0	75-95	70-90	60-85	40-70	30-39	12-17
	10-20	Clay loam	CL	A-7-6	0-10	0-15	80-90	75-85	65-80	55-70	47-53	25-29
	20-28	Clay loam	CH	A-7-6	0-10	0-15	30-90	75-85	65-80	55-70	47-53	25-29
	28-38	Gravelly clay	CH	A-7-6	0-10	0-15	80-90	70-85	65-80	55-75	51-95	29-42
	38-52	Gravelly clay	CH	A-7-6	0-10	0-15	65-90	60-85	60-80	50-75	51-95	29-42
	52-67	Gravelly clay	CH	A-7-6	0-10	0-15	60-90	55-85	55-80	50-75	51-95	29-42
	67-84	Gravelly clay	GC	A-7-6	0-10	0-15	55-90	50-85	50-80	45-75	51-95	29-44
961: Surnuf gravelly loam, high elevation-----	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	0.5-6	Gravelly loam	GM	A-4	0	0	65-80	60-75	50-70	35-55	29-41	5-11
	6-10	Gravelly loam	SC	A-6	0	0	75-95	70-90	60-85	40-70	30-39	12-17
	10-20	Clay loam	CL	A-7-6	0-10	0-15	80-90	75-85	65-80	55-70	47-53	25-29
	20-28	Clay loam	CH	A-7-6	0-10	0-15	30-90	75-85	65-80	55-70	47-53	25-29
	28-38	Gravelly clay	CH	A-7-6	0-10	0-15	80-90	70-85	65-80	55-75	51-95	29-42
	38-52	Gravelly clay	CH	A-7-6	0-10	0-15	65-90	60-85	60-80	50-75	51-95	29-42
	52-67	Gravelly clay	CH	A-7-6	0-10	0-15	60-90	55-85	55-80	50-75	51-95	29-42
	67-84	Gravelly clay	GC	A-7-6	0-10	0-15	55-90	50-85	50-80	45-75	51-95	29-44

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
962: Surnuf gravelly loam, high elevation-----	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	0.5-6	Gravelly loam	GM	A-4	0	0	65-80	60-75	50-70	35-55	29-41	5-11
	6-10	Gravelly loam	SC	A-6	0	0	75-95	70-90	60-85	40-70	30-39	12-17
	10-20	Clay loam	CL	A-7-6	0-10	0-15	80-90	75-85	65-80	55-70	47-53	25-29
	20-28	Clay loam	CH	A-7-6	0-10	0-15	30-90	75-85	65-80	55-70	47-53	25-29
	28-38	Gravelly clay	CH	A-7-6	0-10	0-15	80-90	70-85	65-80	55-75	51-95	29-42
	38-52	Gravelly clay	CH	A-7-6	0-10	0-15	65-90	60-85	60-80	50-75	51-95	29-42
	52-67	Gravelly clay	CH	A-7-6	0-10	0-15	60-90	55-85	55-80	50-75	51-95	29-42
	67-84	Gravelly clay	GC	A-7-6	0-10	0-15	55-90	50-85	50-80	45-75	51-95	29-44
963: Surnuf gravelly loam, high elevation-----	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---	---	---	---
	0.5-6	Gravelly loam	GM	A-4	0	0	65-80	60-75	50-70	35-55	29-41	5-11
	6-10	Gravelly loam	SC	A-6	0	0	75-95	70-90	60-85	40-70	30-39	12-17
	10-20	Clay loam	CL	A-7-6	0-10	0-15	80-90	75-85	65-80	55-70	47-53	25-29
	20-28	Clay loam	CH	A-7-6	0-10	0-15	30-90	75-85	65-80	55-70	47-53	25-29
	28-38	Gravelly clay	CH	A-7-6	0-10	0-15	80-90	70-85	65-80	55-75	51-95	29-42
	38-52	Gravelly clay	CH	A-7-6	0-10	0-15	65-90	60-85	60-80	50-75	51-95	29-42
	52-67	Gravelly clay	CH	A-7-6	0-10	0-15	60-90	55-85	55-80	50-75	51-95	29-42
	67-84	Gravelly clay	GC	A-7-6	0-10	0-15	55-90	50-85	50-80	45-75	51-95	29-44
990. Riverwash, frequently flooded												
991: Xerofluvents sandy loam, frequently flooded-----	0-6	Sandy loam	SM	A-4	0	0-55	25-100	20-100	15-70	5-40	0-15	NP
	6-14	Sandy loam	SM	A-4	0	0-50	15-100	10-100	5-75	0-40	0-15	NP
	14-26	Sandy loam	SM	A-4	0	0-50	15-100	10-100	5-75	0-40	0-15	NP
	26-37	Sandy loam	SM	A-4	0	0-50	15-100	10-100	5-75	0-40	0-15	NP
	37-43	Sandy loam	SM	A-4	0	0-25	80-100	75-100	40-85	25-55	0-20	NP
	43-47	Loamy sand	SM	A-2-4	0	0-50	15-100	10-100	5-75	0-40	0-15	NP
	47-54	Sandy loam	SM	A-4	0	0-50	15-100	10-100	5-75	0-40	0-15	NP
	54-72	Loamy sand	SM	A-2-4	0	0-50	15-100	10-100	5-75	0-40	0-15	NP
	72-80	Sandy loam	SM	A-4	0	0-50	15-100	10-100	5-75	0-40	0-15	NP

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
995. Pits, gravel												
996. Dumps, excavated material												
997. Pits												
998. Dumps, landfill												
999. Water												
DAM. Dam, manmade												

Table 21.--Physical Properties of the Soils

(Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct					
100:							
Anita clay-----	0-1	45-55		0.60-1.00	0.09-0.16	9.0-12.0	2.0-5.0
	1-3	45-55		0.60-1.00	0.09-0.16	9.0-12.0	0.5-2.0
	3-10	50-60		0.42-0.90	0.08-0.16	10.5-13.5	0.5-2.0
	10-15	50-60		0.42-0.90	0.08-0.16	10.5-13.5	0.5-2.0
	15-20	---		0.00-0.01	---	---	0.0-0.2
Galt clay-----	0-3	40-60		0.42-1.40	0.14-0.17	9.0-13.5	1.0-2.0
	3-13	40-60		0.42-1.40	0.14-0.17	9.0-13.5	1.0-2.0
	13-29	40-60		0.42-1.40	0.14-0.17	9.0-13.5	0.2-0.8
	29-32	37-60		0.42-2.20	0.14-0.18	6.5-13.5	0.2-0.8
	32-39	---		0.00-0.01	---	---	---
104:							
Bosquejo clay-----	0-8	40-50		0.50-1.40	0.15-0.16	9.0-11.5	2.0-5.0
	8-19	40-55		0.45-1.40	0.14-0.16	9.0-12.0	1.0-2.0
	19-24	40-55		0.45-1.40	0.14-0.16	9.0-12.0	1.0-2.0
	24-37	30-45		1.00-3.50	0.15-0.20	4.5-9.0	0.1-0.5
	37-44	20-35		1.40-7.00	0.17-0.21	1.0-6.0	0.1-0.5
	44-46	20-35		1.40-7.00	0.17-0.21	1.0-6.0	0.1-0.5
	46-60	18-27		4.00-9.00	0.16-0.18	0.0-3.0	0.0-0.3
105:							
Busacca clay loam-----	0-3	30-40		1.40-3.50	0.17-0.20	4.5-7.5	1.0-5.0
	3-8	30-40		1.40-3.50	0.17-0.20	4.5-7.5	1.0-5.0
	8-16	35-42		1.20-2.50	0.17-0.19	6.0-8.0	0.2-2.0
	16-28	35-42		1.20-2.50	0.17-0.19	6.0-8.0	0.2-2.0
	28-43	35-42		1.20-2.50	0.17-0.19	6.0-8.0	0.2-2.0
	43-60	25-35		2.50-5.00	0.18-0.21	3.0-6.0	0.1-1.0
	60-72	25-35		2.50-5.00	0.18-0.21	3.0-6.0	0.1-1.0
108:							
Tuscan gravelly loam-----	0-2	20-27		1.40-8.00	0.12-0.17	2.0-3.0	1.0-4.0
	2-4	30-55		0.42-3.00	0.05-0.19	4.5-9.0	0.4-1.0
	4-7	30-55		0.42-3.00	0.05-0.19	4.5-9.0	0.4-1.0
	7-11	30-55		0.42-3.00	0.05-0.19	4.5-9.0	0.4-1.0
	7	---		0.00-0.01	---	---	---
Igo gravelly loam-----	0-1	18-30		3.00-9.00	0.10-0.21	1.0-4.5	1.0-4.0
	1-5	22-36		2.00-6.00	0.11-0.21	2.0-6.0	0.4-2.0
	5-9	22-36		2.00-6.00	0.11-0.21	2.0-6.0	0.4-2.0
	9	---		0.00-0.01	---	---	---
Anita clay-----	0-1	45-55		0.60-1.00	0.09-0.16	9.0-12.0	2.0-5.0
	1-3	45-55		0.60-1.00	0.09-0.16	9.0-12.0	0.5-2.0
	3-10	50-60		0.42-0.90	0.08-0.16	10.5-13.5	0.5-2.0
	10-15	50-60		0.42-0.90	0.08-0.16	10.5-13.5	0.5-2.0
	15-20	---		0.00-0.01	---	---	0.0-0.2
109:							
Bosquejo clay loam-----	0-5	27-40		1.40-4.00	0.17-0.21	3.0-9.0	2.0-5.0
	5-24	40-55		0.45-1.40	0.14-0.17	9.0-12.0	1.0-2.0
	24-40	40-55		0.45-1.40	0.14-0.17	9.0-12.0	1.0-2.0
	40-60	20-35		1.40-7.00	0.17-0.21	1.0-6.0	0.1-0.5

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility		Organic matter
	In	Pct				um/sec	In/in	
119yu:								
Auburn gravelly loam-----	0-17	12-25		4.00-14.00	0.11-0.15	0.0-2.9	1.0-2.0	
	17	---		---	---	---	---	
Sobrante gravelly loam-----	0-5	10-25		4.00-14.00	0.10-0.13	0.0-2.9	1.0-3.0	
	5-35	25-35		4.00-14.00	0.11-0.14	3.0-5.9	0.0-0.5	
	35-40	---		---	---	---	---	
	40	---		---	---	---	---	
Rock outcrop.								
120:								
Gridley taxadjunct clay loam	0-4	27-30		2.00-4.00	0.20-0.21	3.0-4.0	1.0-3.0	
	4-9	35-50		0.80-2.00	0.15-0.21	6.0-9.0	1.0-3.0	
	9-15	35-50		0.80-2.00	0.15-0.21	6.0-9.0	0.0-1.0	
	15-21	30-50		0.80-3.00	0.15-0.21	4.0-9.0	0.0-1.0	
	21-60	5-25		0.00-0.05	---	---	0.0-0.0	
121:								
Boga loam-----	0-3	18-27		4.00-8.00	0.16-0.20	1.0-6.0	1.0-3.0	
	3-6	18-27		4.00-8.00	0.16-0.20	1.0-6.0	1.0-3.0	
	6-14	20-40		1.40-7.00	0.16-0.21	2.0-7.5	0.2-1.0	
	14-29	20-40		1.40-7.00	0.16-0.21	2.0-7.5	0.2-1.0	
	29-53	20-40		1.40-7.00	0.16-0.21	2.0-7.5	0.2-1.0	
	53-73	20-40		1.40-7.00	0.16-0.21	2.0-7.5	0.2-1.0	
	73-80	5-20		0.02-0.42	---	0.0-1.0	0.1-0.2	
Loemstone loam-----	0-2	18-27		4.00-8.00	0.16-0.20	1.0-6.0	1.0-3.0	
	2-4	18-27		4.00-8.00	0.16-0.20	1.0-6.0	1.0-3.0	
	4-10	18-27		4.00-8.00	0.16-0.20	1.0-6.0	1.0-3.0	
	10-18	20-40		1.40-7.00	0.16-0.21	2.0-7.5	0.2-1.0	
	18-23	20-40		1.40-7.00	0.16-0.21	2.0-7.5	0.2-1.0	
	23-32	20-40		1.40-7.00	0.16-0.21	2.0-7.5	0.2-1.0	
	32-40	20-40		1.40-7.00	0.16-0.21	2.0-7.5	0.2-1.0	
	40-48	20-40		1.40-7.00	0.16-0.21	2.0-7.5	0.2-1.0	
	48-57	5-20		0.02-0.42	---	0.0-1.0	0.1-0.2	
121su:								
Columbia fine sandy loam, frequently flooded-----	0-14	8-18		14.00-42.00	0.10-0.12	0.0-2.9	0.5-2.0	
	14-60	10-18		14.00-42.00	0.10-0.12	0.0-2.9	0.5-1.0	
125:								
Gridley taxadjunct loam-----	0-10	25-27		4.00-5.00	0.17-0.18	2.6-6.0	1.0-3.0	
	10-20	35-50		0.80-2.00	0.15-0.21	5.8-9.0	1.0-3.0	
	20-22	30-50		0.80-3.00	0.15-0.21	4.0-9.0	0.0-1.0	
	22-60	---		0.00-0.01	---	---	---	
Calcic Haploxerolls sandy loam-----	0-5	15-23		11.00-17.00	0.12-0.17	0.0-2.9	1.0-2.0	
	5-17	15-25		8.00-17.00	0.12-0.17	0.0-2.9	1.0-2.0	
	17-20	12-27		4.00-20.00	0.12-0.18	0.0-2.9	1.0-2.0	
	20-33	12-27		4.00-20.00	0.12-0.18	0.0-2.9	1.0-2.0	
	33-44	12-20		12.00-20.00	0.08-0.13	0.0-2.9	1.0-2.0	
	44-72	---		0.02-0.42	---	---	---	

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility		Organic matter
	In	Pct				um/sec	In/in	
126:								
Liveoak sandy loam-----	0-4	16-20	14.00-21.00	0.12-0.13	0.0-1.0	1.5-3.0		
	4-17	16-20	14.00-21.00	0.12-0.13	0.0-1.0	1.5-3.0		
	17-37	12-25	3.00-26.00	0.11-0.18	0.0-3.0	0.5-1.0		
	37-48	12-25	3.00-26.00	0.11-0.18	0.0-3.0	0.5-1.0		
	48-61	12-25	3.00-26.00	0.11-0.18	0.0-3.0	0.2-0.4		
	61-71	4-19	14.00-90.00	0.05-0.13	0.0-1.0	0.1-0.4		
	71-75	4-19	14.00-90.00	0.05-0.13	0.0-1.0	0.1-0.4		
127:								
Gridley taxadjunct loam-----	0-10	25-27	4.00-5.00	0.17-0.18	2.6-6.0	1.0-3.0		
	10-20	35-50	0.80-2.00	0.15-0.21	5.8-9.0	1.0-3.0		
	20-22	30-50	0.80-3.00	0.15-0.21	4.0-9.0	0.0-1.0		
	22-60	---	0.00-0.05	---	---	---		
130:								
Eastbiggs loam-----	0-3	15-27	4.00-14.00	0.15-0.18	0.0-3.0	0.5-1.0		
	3-10	15-27	4.00-17.00	0.15-0.18	0.0-3.0	0.2-0.8		
	10-17	20-35	4.00-12.00	0.17-0.18	2.0-6.0	0.1-0.5		
	17-27	40-50	0.90-2.00	0.15-0.19	5.0-9.0	0.1-0.3		
	27-34	---	0.00-0.01	---	---	---		
	34-60	---	0.00-0.01	---	---	---		
133:								
Eastbiggs loam-----	0-3	15-27	4.00-14.00	0.15-0.18	0.0-3.0	0.5-1.0		
	3-10	15-27	4.00-17.00	0.15-0.18	0.0-3.0	0.2-0.8		
	10-17	20-35	4.00-12.00	0.17-0.18	2.0-6.0	0.1-0.5		
	17-27	40-50	0.90-2.00	0.15-0.19	5.0-9.0	0.1-0.3		
	27-34	---	0.00-0.01	---	---	---		
	34-60	---	0.00-0.01	---	---	---		
Galt clay loam-----	0-6	30-40	1.40-2.50	0.17-0.20	4.0-9.0	1.0-2.0		
	6-20	30-60	0.42-2.50	0.14-0.20	4.0-13.5	1.0-2.0		
	20-27	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.2-0.8		
	27-30	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.2-0.8		
	30	---	0.00-0.01	---	---	---		
136:								
Duric Xerarents, cut-----	0-3	17-45	1.00-15.00	0.12-0.21	0.8-9.0	0.1-0.5		
	3-8	25-48	1.00-8.00	0.14-0.21	2.6-9.0	0.1-0.5		
	8-10	25-48	1.00-8.00	0.14-0.21	2.6-9.0	0.1-0.5		
	10-13	42-55	0.60-1.30	0.15-0.16	8.0-9.0	0.1-0.3		
	13	---	0.00-0.01	---	---	---		
Duric Xerarents, fill-----	0-5	16-35	2.00-16.00	0.12-0.21	0.8-5.8	1.0-2.0		
	5-12	22-42	1.30-12.00	0.17-0.21	1.6-8.0	0.1-0.5		
	12-16	45-55	0.60-1.20	0.15-0.16	8.9-9.0	0.1-0.3		
	16-30	0-15	14.00-42.00	0.01-0.13	0.0-0.7	0.0-0.3		
	30-38	22-42	1.30-12.00	0.14-0.21	1.6-8.0	0.1-0.3		
	38-48	22-42	1.30-12.00	0.14-0.21	1.6-8.0	0.1-0.3		
	48	---	0.00-0.01	---	---	---		
Eastbiggs fine sandy loam, leveled-----	0-5	15-27	4.00-17.00	0.15-0.18	0.7-3.0	0.5-1.0		
	5-12	15-27	4.00-17.00	0.15-0.18	0.7-3.0	0.2-0.8		
	12-18	20-30	3.00-12.00	0.15-0.18	1.0-4.2	0.1-0.5		
	18-23	20-30	3.00-12.00	0.15-0.18	1.0-4.2	0.1-0.5		
	23-26	27-35	2.00-3.50	0.19-0.21	3.0-6.0	0.1-0.3		
	26-30	40-50	0.90-1.40	0.15-0.16	7.0-9.0	0.1-0.3		
	30	---	0.00-0.01	---	---	---		

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct		um/sec	In/in	Pct	Pct
138su:							
Liveoak sandy clay loam-----	0-13	14-25		4.00-14.00	0.15-0.18	0.0-3.0	1.0-3.0
	13-53	15-25		4.00-14.00	0.11-0.19	0.0-3.0	1.0-2.0
	53-60	5-19		14.00-100.00	0.05-0.13	0.0-3.0	0.5-1.0
139su:							
Liveoak taxadjunct loam, frequently flooded-----	0-6	18-25		4.00-14.00	0.15-0.17	0.0-2.9	0.5-1.0
	6-54	18-25		4.00-14.00	0.15-0.17	0.0-2.9	0.5-1.0
	54-63	---		0.00-0.01	---	---	0.0-0.0
	63-73	10-18		4.00-14.00	0.13-0.15	0.0-2.9	0.0-0.5
Galt taxadjunct clay loam, frequently flooded-----	0-21	27-35		1.40-4.00	0.18-0.20	3.0-5.9	0.5-1.0
	21-22	0-0		0.00-0.01	---	---	---
	22-25	10-20		4.00-14.00	0.14-0.16	0.0-2.9	0.5-1.0
	25-26	---		0.00-0.01	---	---	---
	26	---		---	---	---	---
143su:							
Marcum clay loam-----	0-16	27-35		1.40-4.00	0.17-0.19	3.0-5.9	1.0-2.0
	16-28	30-40		1.40-4.00	0.17-0.19	3.0-5.9	0.5-1.0
	28-40	40-60		0.42-1.40	0.14-0.16	6.0-8.9	0.0-0.5
	40-43	30-40		1.40-4.00	0.17-0.19	3.0-5.9	0.0-0.5
	43-62	---		0.00-0.01	---	---	---
Gridley clay loam-----	0-19	27-35		1.40-4.00	0.17-0.20	3.0-5.9	1.0-2.0
	19-37	35-55		0.42-1.40	0.14-0.17	6.0-8.9	0.5-1.0
	37	---		0.00-0.01	---	---	---
149yu:							
Flanly sandy loam-----	0-9	8-20		4.00-14.00	0.14-0.17	0.0-2.9	1.0-2.0
	9-16	18-25		4.00-14.00	0.14-0.17	0.0-2.9	0.0-1.0
	16-34	25-35		1.40-4.00	0.17-0.19	3.0-5.9	0.0-0.5
	34-38	---		---	---	---	0.0-0.5
150:							
Columbia stratified sand to fine sandy loam-----	0-5	5-20		12.00-80.00	0.06-0.17	0.0-2.9	1.0-3.0
	5-10	5-18		14.00-80.00	0.04-0.17	0.0-2.9	0.5-2.0
	10-29	5-18		14.00-80.00	0.04-0.17	0.0-2.9	0.5-2.0
	29-37	5-18		14.00-80.00	0.04-0.17	0.0-2.9	0.5-1.0
	37-46	5-18		14.00-80.00	0.04-0.17	0.0-2.9	0.5-1.0
	46-60	5-18		14.00-80.00	0.04-0.17	0.0-2.9	0.5-1.0
150su:							
Olashes sandy loam-----	0-4	15-20		14.00-42.00	0.09-0.12	0.0-2.9	1.0-2.0
	4-52	20-35		1.40-4.00	0.13-0.16	3.0-5.9	1.0-2.0
	52-60	5-10		42.00-141.00	0.04-0.07	0.0-2.9	0.5-1.0
151yu:							
Flanly sandy loam-----	0-9	8-20		4.00-14.00	0.14-0.17	0.0-2.9	1.0-2.0
	9-16	18-25		4.00-14.00	0.14-0.17	0.0-2.9	0.0-1.0
	16-34	25-35		1.40-4.00	0.17-0.19	3.0-5.9	0.0-0.5
	34-38	---		---	---	---	0.0-0.5

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
152: Gianella fine sandy loam, frequently flooded-----	0-6	4-20	14.00-38.00	0.13-0.15	0.0-0.0	1.0-5.0
	6-15	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	15-20	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	20-22	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	22-27	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	27-32	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	32-43	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	43-64	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	64-80	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
153: Gianella sandy loam, frequently flooded-----	0-6	4-20	14.00-38.00	0.10-0.13	0.0-0.0	1.0-5.0
	6-17	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	17-24	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	24-29	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	29-32	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	32-43	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	43-57	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	57-67	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	67-68	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	68-71	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	71-80	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	80-84	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
154: Gianella silt loam, frequently flooded-----	0-2	4-22	6.00-12.00	0.15-0.19	0.0-1.0	1.0-5.0
	2-8	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	8-15	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	15-22	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	22-31	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	31-41	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	41-50	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	50-54	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	54-64	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	64-66	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	66-69	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	69-83	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
158: Gianella fine sandy loam, occasionally flooded-----	0-3	4-20	14.00-42.00	0.13-0.15	0.0-0.0	1.0-5.0
	3-12	4-20	14.00-42.00	0.13-0.15	0.0-0.0	1.0-5.0
	12-19	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	19-28	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	28-48	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	48-57	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	57-80	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
160: Gianella loam, occasionally flooded-----	0-18	7-22	6.00-14.00	0.14-0.17	0.0-1.0	1.0-5.0
	18-42	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	42-52	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	52-70	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct		um/sec	In/in	Pct	Pct
161: Gianella fine sandy loam, rarely flooded-----	0-3	4-20		14.00-42.00	0.13-0.15	0.0-0.0	1.0-5.0
	3-12	4-20		14.00-42.00	0.13-0.15	0.0-0.0	1.0-5.0
	12-19	1-15		8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	19-28	1-15		8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	28-48	1-15		8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	48-57	1-15		8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	57-80	1-15		8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
162: Gianella loam, rarely flooded-----	0-18	7-22		6.00-14.00	0.14-0.17	0.0-1.0	1.0-5.0
	18-42	1-15		8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	42-52	1-15		8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	52-70	1-15		8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
163yu: Holillipah loamy sand-----	0-6	0-10		42.00-141.00	0.06-0.08	0.0-2.9	1.0-2.0
	6-66	0-10		14.00-42.00	0.06-0.09	0.0-2.9	0.0-0.5
165yu: Holland loam-----	0-15	12-25		4.00-14.00	0.14-0.16	0.0-2.9	2.0-5.0
	15-65	25-35		4.00-14.00	0.14-0.18	3.0-5.9	0.0-0.5
Hoda loam-----	0-7	7-18		4.00-14.00	0.14-0.16	0.0-2.9	2.0-6.0
	7-14	18-30		4.00-14.00	0.15-0.18	0.0-2.9	0.0-0.5
	14-72	35-50		1.40-4.00	0.14-0.16	3.0-5.9	0.0-0.5
Hotaw loam-----	0-12	7-15		4.00-14.00	0.14-0.16	0.0-2.9	1.0-5.0
	12-34	20-35		4.00-14.00	0.14-0.18	3.0-5.9	0.0-0.5
	34	---		---	---	---	---
173yu: Hotaw loam-----	0-12	7-15		4.00-14.00	0.14-0.16	0.0-2.9	1.0-5.0
	12-34	20-35		4.00-14.00	0.14-0.18	3.0-5.9	0.0-0.5
	34	---		---	---	---	---
Chawanakee gravelly sandy loam-----	0-1	---		---	---	---	---
	1-2	---		---	---	---	---
	2-5	2-6		30.00-141.00	0.04-0.10	0.0-0.0	1.0-5.0
	5-11	2-6		30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	11-19	2-6		30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	19	---		---	---	---	---
Holland loam-----	0-15	12-25		4.00-14.00	0.14-0.16	0.0-2.9	2.0-5.0
	15-65	25-35		4.00-14.00	0.14-0.18	3.0-5.9	0.0-0.5
175: Farwell clay loam, rarely flooded-----	0-5	27-35		2.00-4.00	0.18-0.21	3.0-6.0	1.0-2.5
	5-9	27-35		2.00-4.00	0.18-0.21	3.0-6.0	1.0-2.5
	9-18	27-35		2.00-4.00	0.18-0.21	3.0-6.0	1.0-2.0
	18-26	27-35		2.00-4.00	0.18-0.21	3.0-6.0	1.0-2.0
	26-33	27-35		2.00-4.00	0.18-0.21	3.0-6.0	1.0-2.0
	33-43	27-40		1.40-4.00	0.18-0.21	3.0-6.0	1.0-2.0
	43-57	27-40		1.40-4.00	0.18-0.21	3.0-6.0	1.0-2.0
	57-72	27-35		2.00-4.00	0.18-0.21	3.0-6.0	0.1-1.0
	72-81	20-35		1.40-12.00	0.13-0.17	1.0-6.0	0.1-1.0

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
176: Farwell loam, occasionally flooded-----	0-6	20-25	8.00-12.00	0.17-0.18	1.0-2.6	1.0-2.5
	6-20	20-25	8.00-12.00	0.17-0.19	1.0-2.6	1.0-2.0
	20-36	20-25	8.00-12.00	0.17-0.19	1.0-2.6	1.0-2.0
	36-50	27-35	2.00-4.00	0.19-0.21	3.0-6.0	1.0-2.0
	50-60	22-27	4.00-12.00	0.17-0.18	1.6-3.5	0.1-1.0
176yu: Jocal loam-----	0-8	15-27	4.00-14.00	0.13-0.17	0.0-2.9	2.0-5.0
	8-73	27-35	4.00-14.00	0.15-0.19	3.0-5.9	0.0-0.5
177: Farwell silt loam, occasionally flooded-----	0-6	12-27	4.00-20.00	0.17-0.20	0.6-3.0	1.0-2.5
	6-11	20-40	1.40-21.00	0.17-0.21	1.0-7.3	1.0-2.5
	11-22	25-35	2.00-21.00	0.19-0.21	2.5-6.0	1.0-2.0
	22-33	25-35	2.00-21.00	0.19-0.21	2.5-6.0	1.0-2.0
	33-39	25-35	2.00-21.00	0.19-0.21	2.5-6.0	1.0-2.0
	39-49	20-30	2.50-20.00	0.17-0.20	1.0-4.2	0.5-2.0
	49-62	20-30	2.50-20.00	0.17-0.20	1.0-4.2	0.2-2.0
178: Arbuckle gravelly loam-----	0-4	20-24	10.00-13.00	0.11-0.15	1.0-3.0	0.5-0.8
	4-9	20-24	10.00-13.00	0.11-0.15	1.0-3.0	0.0-0.8
	9-20	24-35	2.00-10.00	0.12-0.19	2.0-6.0	0.0-0.5
	20-32	24-35	2.00-10.00	0.12-0.19	2.0-6.0	0.0-0.5
	32-49	24-35	2.00-10.00	0.12-0.19	2.0-6.0	0.0-0.5
	49-68	24-26	6.00-10.00	0.03-0.09	2.0-3.0	0.0-0.5
	68-86	20-26	6.00-13.00	0.03-0.09	1.0-3.0	0.0-0.5
179: Moda taxadjunct loam-----	0-2	10-20	12.00-30.00	0.14-0.16	0.0-1.0	0.5-0.8
	2-6	10-20	12.00-30.00	0.14-0.16	0.0-1.0	0.0-0.8
	6-13	24-30	3.00-10.00	0.15-0.20	2.0-4.0	0.0-0.5
	13-22	45-50	0.60-1.20	0.14-0.17	8.9-9.0	0.0-0.5
	---	---	0.00-0.01	---	---	---
Arbuckle gravelly loam-----	0-4	20-24	10.00-13.00	0.11-0.15	1.0-3.0	0.5-0.8
	4-9	20-24	10.00-13.00	0.11-0.15	1.0-3.0	0.0-0.8
	9-20	24-35	2.00-10.00	0.12-0.19	2.0-6.0	0.0-0.5
	20-32	24-35	2.00-10.00	0.12-0.19	2.0-6.0	0.0-0.5
	32-49	24-35	2.00-10.00	0.12-0.19	2.0-6.0	0.0-0.5
	49-68	24-26	6.00-10.00	0.03-0.09	2.0-3.0	0.0-0.5
	68-86	20-26	6.00-13.00	0.03-0.09	1.0-3.0	0.0-0.5
180: Dodgeland silty clay loam, occasionally flooded-----	0-4	30-40	1.40-3.00	0.17-0.20	4.0-9.1	1.0-3.0
	4-8	40-45	1.20-1.40	0.15-0.17	9.0-9.5	1.0-3.0
	8-18	45-55	0.60-1.20	0.14-0.16	9.5-12.0	0.5-1.5
	18-33	45-55	0.60-1.20	0.14-0.16	9.5-12.0	0.5-1.5
	33-45	45-55	0.60-1.20	0.14-0.16	9.5-12.0	0.5-1.0
	45-53	40-55	0.60-1.40	0.14-0.17	9.0-12.0	0.2-0.5
	53-60	18-35	2.00-14.00	0.17-0.21	1.0-6.0	0.1-0.3
	60-70	18-35	2.00-14.00	0.17-0.21	1.0-6.0	0.1-0.3
	70-80	18-35	2.00-14.00	0.17-0.21	1.0-6.0	0.1-0.3

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility		Organic matter
	In	Pct				um/sec	In/in	
181: Dodgeland silty clay loam, frequently flooded-----	0-4	30-40		1.40-3.00	0.17-0.20	4.0-9.1	1.0-3.0	
	4-8	40-45		1.20-1.40	0.15-0.17	9.0-9.5	1.0-3.0	
	8-18	45-55		0.60-1.20	0.14-0.16	9.5-12.0	0.5-1.5	
	18-33	45-55		0.60-1.20	0.14-0.16	9.5-12.0	0.5-1.5	
	33-45	45-55		0.60-1.20	0.14-0.16	9.5-12.0	0.5-1.0	
	45-53	40-55		0.60-1.40	0.14-0.17	9.0-12.0	0.2-0.5	
	53-60	18-35		2.00-14.00	0.17-0.21	1.0-6.0	0.1-0.3	
	60-70	18-35		2.00-14.00	0.17-0.21	1.0-6.0	0.1-0.3	
	70-80	18-35		2.00-14.00	0.17-0.21	1.0-6.0	0.1-0.3	
188yu: Mariposa taxadjunct gravelly loam-----	0-4	10-20		4.00-14.00	0.09-0.14	0.0-2.9	1.0-3.0	
	4-23	20-35		4.00-14.00	0.10-0.14	0.0-2.9	0.0-1.0	
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189: Esquon silt loam, overwash---	0-4	12-27		4.00-20.00	0.16-0.20	1.0-3.0	1.0-2.0	
	4-9	12-27		4.00-20.00	0.16-0.20	1.0-3.0	0.5-1.0	
	9-15	12-27		4.00-20.00	0.16-0.20	1.0-3.0	0.1-0.5	
	15-35	40-60		0.42-1.40	0.14-0.17	9.0-13.5	0.5-1.0	
	35-48	40-60		0.42-1.40	0.14-0.17	9.0-13.5	0.1-0.5	
	48-60	27-60		0.42-4.00	0.14-0.21	3.0-13.5	0.1-0.5	
	60	---		0.00-0.01	---	---	---	
189yu: Mariposa taxadjunct gravelly loam-----	0-4	10-20		4.00-14.00	0.09-0.14	0.0-2.9	1.0-3.0	
	4-23	20-35		4.00-14.00	0.10-0.14	0.0-2.9	0.0-1.0	
	23	---		---	---	---	---	
196yu: Mildred cobbly loam-----	0-3	18-27		4.00-14.00	0.10-0.13	0.0-2.9	1.0-2.0	
	3-9	27-35		1.40-4.00	0.12-0.15	3.0-5.9	0.0-0.5	
	9-23	35-60		0.01-0.42	0.14-0.16	6.0-8.9	0.0-0.5	
	23	---		---	---	---	---	
200: Parrott silt loam, occasionally flooded-----	0-2	18-27		4.00-14.00	0.18-0.20	0.9-3.0	2.0-5.0	
	2-8	18-27		4.00-14.00	0.18-0.20	0.9-3.0	1.0-3.0	
	8-20	18-27		4.00-14.00	0.18-0.20	0.9-3.0	1.0-3.0	
	20-37	18-27		4.00-14.00	0.18-0.20	0.9-3.0	1.0-2.0	
	37-49	18-27		4.00-14.00	0.18-0.20	0.9-3.0	1.0-2.0	
	49-63	12-30		3.00-20.00	0.12-0.20	0.6-4.0	0.2-1.0	
	63-89	12-30		3.00-20.00	0.12-0.20	0.6-4.0	0.2-1.0	
201: Parrott silt loam, frequently flooded-----	0-2	18-27		4.00-14.00	0.18-0.20	0.9-3.0	2.0-5.0	
	2-8	18-27		4.00-14.00	0.18-0.20	0.9-3.0	1.0-3.0	
	8-20	18-27		4.00-14.00	0.18-0.20	0.9-3.0	1.0-3.0	
	20-37	18-27		4.00-14.00	0.18-0.20	0.9-3.0	1.0-2.0	
	37-49	18-27		4.00-14.00	0.18-0.20	0.9-3.0	1.0-2.0	
	49-63	12-30		3.00-20.00	0.12-0.20	0.6-4.0	0.2-1.0	
	63-89	12-30		3.00-20.00	0.12-0.20	0.6-4.0	0.2-1.0	

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
203: Kusalslough silty clay loam, occasionally flooded-----	0-4	28-35	2.00-4.00	0.19-0.21	4.0-6.0	1.0-4.0
	4-12	28-35	2.00-4.00	0.19-0.21	4.0-6.0	1.0-4.0
	12-21	30-40	1.40-3.00	0.17-0.20	4.5-7.5	0.5-2.0
	21-31	30-40	1.40-3.00	0.17-0.20	4.5-7.5	1.0-3.0
	31-41	35-40	1.40-2.00	0.17-0.19	6.0-7.5	0.5-2.0
	41-57	40-55	0.45-1.40	0.15-0.17	7.5-12.0	0.1-1.6
	57-69	40-55	0.45-1.40	0.15-0.17	7.5-12.0	0.1-1.6
	69-80	40-55	0.45-1.40	0.15-0.17	7.5-12.0	0.1-1.6
205: Parrott silt loam, frequently flooded-----	0-2	18-27	4.00-14.00	0.18-0.20	0.9-3.0	2.0-5.0
	2-8	18-27	4.00-14.00	0.18-0.20	0.9-3.0	1.0-3.0
	8-20	18-27	4.00-14.00	0.18-0.20	0.9-3.0	1.0-3.0
	20-37	18-27	4.00-14.00	0.18-0.20	0.9-3.0	1.0-2.0
	37-49	18-27	4.00-14.00	0.18-0.20	0.9-3.0	1.0-2.0
	49-63	12-30	3.00-20.00	0.12-0.20	0.6-4.0	0.2-1.0
	63-89	12-30	3.00-20.00	0.12-0.20	0.6-4.0	0.2-1.0
Vermet silt loam, frequently flooded-----	0-2	18-25	8.00-14.00	0.18-0.20	0.9-3.0	2.0-5.0
	2-8	18-25	8.00-14.00	0.18-0.20	0.9-3.0	1.0-3.0
	8-13	18-25	8.00-14.00	0.18-0.20	0.9-3.0	1.0-3.0
	13-16	29-35	2.00-3.00	0.19-0.21	3.0-6.0	1.0-2.0
	16-26	29-35	2.00-3.00	0.19-0.21	3.0-6.0	1.0-2.0
	26-41	29-35	2.00-3.00	0.19-0.21	3.0-6.0	0.5-1.0
	41-62	30-40	1.40-3.00	0.19-0.21	3.0-7.3	0.2-1.0
	62-72	30-40	1.40-3.00	0.17-0.21	3.0-7.3	0.2-1.0
206: Islandbar sandy loam-----	0-2	---	---	---	---	---
	2-5	10-18	14.00-42.00	0.10-0.13	0.0-1.0	2.0-4.0
	5-9	10-18	14.00-42.00	0.10-0.13	0.0-1.0	1.0-2.0
	9-27	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.8-1.5
	27-36	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.5-1.0
	36-47	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.1-0.5
	47-58	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.1-0.5
	58-62	2-18	14.00-100.00	0.03-0.13	0.0-1.0	0.0-0.2
	62-72	2-18	14.00-100.00	0.01-0.13	0.0-1.0	0.0-0.2
Chawanakee gravelly sandy loam-----	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-5	2-6	30.00-141.00	0.04-0.10	0.0-0.0	1.0-5.0
	5-11	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	11-19	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	19	---	---	---	---	---
207: Islandbar sandy loam-----	0-2	---	---	---	---	---
	2-5	10-18	14.00-42.00	0.10-0.13	0.0-1.0	2.0-4.0
	5-9	10-18	14.00-42.00	0.10-0.13	0.0-1.0	1.0-2.0
	9-27	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.8-1.5
	27-36	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.5-1.0
	36-47	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.1-0.5
	47-58	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.1-0.5
	58-62	2-18	14.00-100.00	0.03-0.13	0.0-1.0	0.0-0.2
	62-72	2-18	14.00-100.00	0.01-0.13	0.0-1.0	0.0-0.2

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct		um/sec	In/in	Pct	Pct
207: Chawanakee gravelly sandy loam-----	0-1	---	---	---	---	---	---
	1-2	---	---	---	---	---	---
	2-5	2-6	30.00-141.00	0.04-0.10	0.0-0.0	1.0-5.0	
	5-11	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5	
	11-19	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5	
	19	---	---	---	---	---	
208: Islandbar sandy loam-----	0-2	---	---	---	---	---	
	2-5	10-18	14.00-42.00	0.10-0.13	0.0-1.0	2.0-4.0	
	5-9	10-18	14.00-42.00	0.10-0.13	0.0-1.0	1.0-2.0	
	9-27	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.8-1.5	
	27-36	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.5-1.0	
	36-47	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.1-0.5	
	47-58	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.1-0.5	
	58-62	2-18	14.00-100.00	0.03-0.13	0.0-1.0	0.0-0.2	
	62-72	2-18	14.00-100.00	0.01-0.13	0.0-1.0	0.0-0.2	
Chawanakee gravelly sandy loam-----	0-1	---	---	---	---	---	
	1-2	---	---	---	---	---	
	2-5	2-6	30.00-141.00	0.04-0.10	0.0-0.0	1.0-5.0	
	5-11	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5	
	11-19	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5	
	19	---	---	---	---	---	
209: Islandbar sandy loam-----	0-2	---	---	---	---	---	
	2-5	10-18	14.00-42.00	0.10-0.13	0.0-1.0	2.0-4.0	
	5-9	10-18	14.00-42.00	0.10-0.13	0.0-1.0	1.0-2.0	
	9-27	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.8-1.5	
	27-36	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.5-1.0	
	36-47	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.1-0.5	
	47-58	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.1-0.5	
	58-62	2-18	14.00-100.00	0.03-0.13	0.0-1.0	0.0-0.2	
	62-72	2-18	14.00-100.00	0.01-0.13	0.0-1.0	0.0-0.2	
Chawanakee gravelly sandy loam-----	0-1	---	---	---	---	---	
	1-2	---	---	---	---	---	
	2-5	2-6	30.00-141.00	0.04-0.10	0.0-0.0	1.0-5.0	
	5-11	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5	
	11-19	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5	
	19	---	---	---	---	---	
210: Featherfalls sandy loam-----	0-1	---	---	---	---	---	
	1-4	8-23	11.00-42.00	0.07-0.18	0.4-2.0	2.0-4.0	
	4-7	8-23	11.00-42.00	0.07-0.18	0.4-2.0	1.0-2.0	
	7-17	16-33	2.00-18.00	0.08-0.18	0.8-5.0	0.8-1.5	
	17-24	16-33	2.00-18.00	0.08-0.18	0.8-5.0	0.8-1.5	
	24-32	16-33	2.00-18.00	0.08-0.18	0.8-5.0	0.5-1.0	
	32-42	16-33	2.00-18.00	0.08-0.18	0.8-5.0	0.1-0.5	
	42-61	25-38	1.60-8.00	0.13-0.17	2.6-7.0	0.0-0.2	
	61-72	25-38	1.60-8.00	0.13-0.17	2.6-7.0	0.0-0.2	
	72-80	5-27	4.00-80.00	0.02-0.17	0.0-3.0	0.0-0.1	

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
210: Islandbar sandy loam-----	0-2	---	---	---	---	---
	2-5	10-18	14.00-42.00	0.10-0.13	0.0-1.0	2.0-4.0
	5-9	10-18	14.00-42.00	0.10-0.13	0.0-1.0	1.0-2.0
	9-27	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.8-1.5
	27-36	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.5-1.0
	36-47	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.1-0.5
	47-58	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.1-0.5
	58-62	2-18	14.00-100.00	0.03-0.13	0.0-1.0	0.0-0.2
	62-72	2-18	14.00-100.00	0.01-0.13	0.0-1.0	0.0-0.2
211: Featherfalls sandy loam-----	0-1	---	---	---	---	---
	1-4	8-23	11.00-42.00	0.07-0.18	0.4-2.0	2.0-4.0
	4-7	8-23	11.00-42.00	0.07-0.18	0.4-2.0	1.0-2.0
	7-17	16-33	2.00-18.00	0.08-0.18	0.8-5.0	0.8-1.5
	17-24	16-33	2.00-18.00	0.08-0.18	0.8-5.0	0.8-1.5
	24-32	16-33	2.00-18.00	0.08-0.18	0.8-5.0	0.5-1.0
	32-42	16-33	2.00-18.00	0.08-0.18	0.8-5.0	0.1-0.5
	42-61	25-38	1.60-8.00	0.13-0.17	2.6-7.0	0.0-0.2
	61-72	25-38	1.60-8.00	0.13-0.17	2.6-7.0	0.0-0.2
	72-80	5-27	4.00-80.00	0.02-0.17	0.0-3.0	0.0-0.1
Islandbar sandy loam-----	0-2	---	---	---	---	---
	2-5	10-18	14.00-42.00	0.10-0.13	0.0-1.0	2.0-4.0
	5-9	10-18	14.00-42.00	0.10-0.13	0.0-1.0	1.0-2.0
	9-27	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.8-1.5
	27-36	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.5-1.0
	36-47	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.1-0.5
	47-58	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.1-0.5
	58-62	2-18	14.00-100.00	0.03-0.13	0.0-1.0	0.0-0.2
	62-72	2-18	14.00-100.00	0.01-0.13	0.0-1.0	0.0-0.2
212: Featherfalls sandy loam-----	0-1	---	---	---	---	---
	1-4	8-23	11.00-42.00	0.07-0.18	0.4-2.0	2.0-4.0
	4-7	8-23	11.00-42.00	0.07-0.18	0.4-2.0	1.0-2.0
	7-17	16-33	2.00-18.00	0.08-0.18	0.8-5.0	0.8-1.5
	17-24	16-33	2.00-18.00	0.08-0.18	0.8-5.0	0.8-1.5
	24-32	16-33	2.00-18.00	0.08-0.18	0.8-5.0	0.5-1.0
	32-42	16-33	2.00-18.00	0.08-0.18	0.8-5.0	0.1-0.5
	42-61	25-38	1.60-8.00	0.13-0.17	2.6-7.0	0.0-0.2
	61-72	25-38	1.60-8.00	0.13-0.17	2.6-7.0	0.0-0.2
	72-80	5-27	4.00-80.00	0.02-0.17	0.0-3.0	0.0-0.1
Islandbar sandy loam-----	0-2	---	---	---	---	---
	2-5	10-18	14.00-42.00	0.10-0.13	0.0-1.0	2.0-4.0
	5-9	10-18	14.00-42.00	0.10-0.13	0.0-1.0	1.0-2.0
	9-27	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.8-1.5
	27-36	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.5-1.0
	36-47	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.1-0.5
	47-58	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.1-0.5
	58-62	2-18	14.00-100.00	0.03-0.13	0.0-1.0	0.0-0.2
	62-72	2-18	14.00-100.00	0.01-0.13	0.0-1.0	0.0-0.2

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
213:						
Featherfalls sandy loam-----	0-1	---	---	---	---	---
	1-4	8-23	11.00-42.00	0.07-0.18	0.4-2.0	2.0-4.0
	4-7	8-23	11.00-42.00	0.07-0.18	0.4-2.0	1.0-2.0
	7-17	16-33	2.00-18.00	0.08-0.18	0.8-5.0	0.8-1.5
	17-24	16-33	2.00-18.00	0.08-0.18	0.8-5.0	0.8-1.5
	24-32	16-33	2.00-18.00	0.08-0.18	0.8-5.0	0.5-1.0
	32-42	16-33	2.00-18.00	0.08-0.18	0.8-5.0	0.1-0.5
	42-61	25-38	1.60-8.00	0.13-0.17	2.6-7.0	0.0-0.2
	61-72	25-38	1.60-8.00	0.13-0.17	2.6-7.0	0.0-0.2
	72-80	5-27	4.00-80.00	0.02-0.17	0.0-3.0	0.0-0.1
Islandbar sandy loam-----	0-2	---	---	---	---	---
	2-5	10-18	14.00-42.00	0.10-0.13	0.0-1.0	2.0-4.0
	5-9	10-18	14.00-42.00	0.10-0.13	0.0-1.0	1.0-2.0
	9-27	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.8-1.5
	27-36	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.5-1.0
	36-47	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.1-0.5
	47-58	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.1-0.5
	58-62	2-18	14.00-100.00	0.03-0.13	0.0-1.0	0.0-0.2
	62-72	2-18	14.00-100.00	0.01-0.13	0.0-1.0	0.0-0.2
214:						
Crystalhill gravelly coarse sandy loam-----	0-2	---	---	---	---	---
	2-7	5-8	35.00-80.00	0.07-0.11	0.0-1.0	1.0-2.5
	7-14	5-12	20.00-80.00	0.07-0.12	0.0-1.0	0.5-1.0
	14-22	5-12	20.00-80.00	0.07-0.12	0.0-1.0	0.1-0.5
	22-33	5-12	20.00-80.00	0.07-0.12	0.0-1.0	0.0-0.2
	33-44	5-12	20.00-80.00	0.07-0.12	0.0-1.0	0.0-0.2
	44-66	1-14	18.00-141.00	0.02-0.11	0.0-1.0	0.0-0.2
	66	---	0.02-0.42	---	---	---
Oregongulch gravelly sandy loam-----	0-1	---	---	---	---	---
	1-4	5-12	17.00-130.00	0.06-0.12	0.0-1.0	1.0-2.5
	4-7	3-15	17.00-130.00	0.06-0.11	0.0-1.0	0.5-1.0
	7-13	3-15	17.00-130.00	0.06-0.11	0.0-1.0	0.1-0.5
	13-18	3-15	17.00-130.00	0.06-0.11	0.0-1.0	0.0-0.2
	18-24	3-13	17.00-130.00	0.05-0.10	0.0-1.0	0.0-0.2
	24-60	0-10	0.02-0.42	---	0.0-1.0	0.0-0.0
Craigsaddle coarse sandy loam	0-5	5-10	30.00-80.00	0.08-0.10	0.0-1.0	1.0-2.5
	5-11	8-12	20.00-38.00	0.06-0.11	0.0-1.0	0.5-1.0
	11-17	8-12	20.00-38.00	0.06-0.11	0.0-1.0	0.5-1.0
	17-21	8-12	20.00-38.00	0.06-0.11	0.0-1.0	0.1-0.5
	21-31	15-27	4.00-17.00	0.09-0.18	0.0-3.0	0.0-0.2
	31-51	15-27	4.00-17.00	0.09-0.18	0.0-3.0	0.0-0.2
	51-58	13-25	8.00-20.00	0.09-0.17	0.0-3.0	0.0-0.2
	58-80	---	0.02-0.42	---	0.0-1.0	0.0-0.2
Rock outcrop, trondhemite.						
215:						
Crystalhill gravelly coarse sandy loam-----	0-2	---	---	---	---	---
	2-7	5-8	35.00-80.00	0.07-0.11	0.0-1.0	1.0-2.5
	7-14	5-12	20.00-80.00	0.07-0.12	0.0-1.0	0.5-1.0
	14-22	5-12	20.00-80.00	0.07-0.12	0.0-1.0	0.1-0.5
	22-33	5-12	20.00-80.00	0.07-0.12	0.0-1.0	0.0-0.2
	33-44	5-12	20.00-80.00	0.07-0.12	0.0-1.0	0.0-0.2
	44-66	1-14	18.00-141.00	0.02-0.11	0.0-1.0	0.0-0.2
	---	---	0.02-0.42	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
215: Oregongulch gravelly sandy loam-----	0-1	---	---	---	---	---
	1-4	5-12	17.00-130.00	0.06-0.12	0.0-1.0	1.0-2.5
	4-7	3-15	17.00-130.00	0.06-0.11	0.0-1.0	0.5-1.0
	7-13	3-15	17.00-130.00	0.06-0.11	0.0-1.0	0.1-0.5
	13-18	3-15	17.00-130.00	0.06-0.11	0.0-1.0	0.0-0.2
	18-24	3-13	17.00-130.00	0.05-0.10	0.0-1.0	0.0-0.2
	24-60	0-10	0.02-0.42	---	0.0-1.0	0.0-0.0
Craigsaddle coarse sandy loam	0-5	5-10	30.00-80.00	0.08-0.10	0.0-1.0	1.0-2.5
	5-11	8-12	20.00-38.00	0.06-0.11	0.0-1.0	0.5-1.0
	11-17	8-12	20.00-38.00	0.06-0.11	0.0-1.0	0.5-1.0
	17-21	8-12	20.00-38.00	0.06-0.11	0.0-1.0	0.1-0.5
	21-31	15-27	4.00-17.00	0.09-0.18	0.0-3.0	0.0-0.2
	31-51	15-27	4.00-17.00	0.09-0.18	0.0-3.0	0.0-0.2
	51-58	13-25	8.00-20.00	0.09-0.17	0.0-3.0	0.0-0.2
	58-80	---	0.02-0.42	---	0.0-1.0	0.0-0.2
Rock outcrop, trondhjemite.						
216: Crystalhill gravelly coarse sandy loam-----	0-2	---	---	---	---	---
	2-7	5-8	35.00-80.00	0.07-0.11	0.0-1.0	1.0-2.5
	7-14	5-12	20.00-80.00	0.07-0.12	0.0-1.0	0.5-1.0
	14-22	5-12	20.00-80.00	0.07-0.12	0.0-1.0	0.1-0.5
	22-33	5-12	20.00-80.00	0.07-0.12	0.0-1.0	0.0-0.2
	33-44	5-12	20.00-80.00	0.07-0.12	0.0-1.0	0.0-0.2
	44-66	1-14	18.00-141.00	0.02-0.11	0.0-1.0	0.0-0.2
	66	---	0.02-0.42	---	---	---
Oregongulch gravelly sandy loam-----	0-1	---	---	---	---	---
	1-4	5-12	17.00-130.00	0.06-0.12	0.0-1.0	1.0-2.5
	4-7	3-15	17.00-130.00	0.06-0.11	0.0-1.0	0.5-1.0
	7-13	3-15	17.00-130.00	0.06-0.11	0.0-1.0	0.1-0.5
	13-18	3-15	17.00-130.00	0.06-0.11	0.0-1.0	0.0-0.2
	18-24	3-13	17.00-130.00	0.05-0.10	0.0-1.0	0.0-0.2
	24-60	0-10	0.02-0.42	---	0.0-1.0	0.0-0.0
Craigsaddle coarse sandy loam	0-5	5-10	30.00-80.00	0.08-0.10	0.0-1.0	1.0-2.5
	5-11	8-12	20.00-38.00	0.06-0.11	0.0-1.0	0.5-1.0
	11-17	8-12	20.00-38.00	0.06-0.11	0.0-1.0	0.5-1.0
	17-21	8-12	20.00-38.00	0.06-0.11	0.0-1.0	0.1-0.5
	21-31	15-27	4.00-17.00	0.09-0.18	0.0-3.0	0.0-0.2
	31-51	15-27	4.00-17.00	0.09-0.18	0.0-3.0	0.0-0.2
	51-58	13-25	8.00-20.00	0.09-0.17	0.0-3.0	0.0-0.2
	58-80	---	0.02-0.42	---	0.0-1.0	0.0-0.2
Rock outcrop, trondhjemite.						

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
217:						
Crystalhill gravelly coarse sandy loam-----	0-2	---	---	---	---	---
	2-7	5-8	35.00-80.00	0.07-0.11	0.0-1.0	1.0-2.5
	7-14	5-12	20.00-80.00	0.07-0.12	0.0-1.0	0.5-1.0
	14-22	5-12	20.00-80.00	0.07-0.12	0.0-1.0	0.1-0.5
	22-33	5-12	20.00-80.00	0.07-0.12	0.0-1.0	0.0-0.2
	33-44	5-12	20.00-80.00	0.07-0.12	0.0-1.0	0.0-0.2
	44-66	1-14	18.00-141.00	0.02-0.11	0.0-1.0	0.0-0.2
	66	---	0.02-0.42	---	---	---
Oregongulch gravelly sandy loam-----	0-1	---	---	---	---	---
	1-4	5-12	17.00-130.00	0.06-0.12	0.0-1.0	1.0-2.5
	4-7	3-15	17.00-130.00	0.06-0.11	0.0-1.0	0.5-1.0
	7-13	3-15	17.00-130.00	0.06-0.11	0.0-1.0	0.1-0.5
	13-18	3-15	17.00-130.00	0.06-0.11	0.0-1.0	0.0-0.2
	18-24	3-13	17.00-130.00	0.05-0.10	0.0-1.0	0.0-0.2
	24-60	0-10	0.02-0.42	---	0.0-1.0	0.0-0.0
Craigsaddle coarse sandy loam	0-5	5-10	30.00-80.00	0.08-0.10	0.0-1.0	1.0-2.5
	5-11	8-12	20.00-38.00	0.06-0.11	0.0-1.0	0.5-1.0
	11-17	8-12	20.00-38.00	0.06-0.11	0.0-1.0	0.5-1.0
	17-21	8-12	20.00-38.00	0.06-0.11	0.0-1.0	0.1-0.5
	21-31	15-27	4.00-17.00	0.09-0.18	0.0-3.0	0.0-0.2
	31-51	15-27	4.00-17.00	0.09-0.18	0.0-3.0	0.0-0.2
	51-58	13-25	8.00-20.00	0.09-0.17	0.0-3.0	0.0-0.2
	58-80	---	0.02-0.42	---	0.0-1.0	0.0-0.2
Rock outcrop, trondhjemite.						
218:						
Rock outcrop, quartz diorite.						
Lithic Xerorthents gravelly sandy loam-----	0-2	---	---	---	---	---
	2-4	6-8	35.00-60.00	0.07-0.11	0.0-0.5	1.0-5.0
	4-8	6-10	30.00-60.00	0.06-0.10	0.0-0.5	0.1-1.5
	8	---	---	---	---	---
Chawanakee gravelly sandy loam-----	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-5	2-6	30.00-141.00	0.04-0.10	0.0-0.0	1.0-5.0
	5-11	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	11-19	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	19	---	---	---	---	---
219:						
Rock outcrop, quartz diorite.						
Lithic Xerorthents gravelly sandy loam-----	0-2	---	---	---	---	---
	2-4	6-8	35.00-60.00	0.07-0.11	0.0-0.5	1.0-5.0
	4-8	6-10	30.00-60.00	0.06-0.10	0.0-0.5	0.1-1.5
	8	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility		Organic matter
	In	Pct				um/sec	In/in	
219:								
Chawanakee gravelly sandy loam-----	0-1	---	---	---	---	---	---	---
	1-2	---	---	---	---	---	---	---
	2-5	2-6	30.00-141.00	0.04-0.10	0.0-0.0	1.0-5.0		
	5-11	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5		
	11-19	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5		
	19	---	---	---	---	---		
220:								
Esquon clay, frequently flooded-----	0-10	40-60	0.42-1.40	0.14-0.17	9.0-13.5	1.0-2.5		
	10-22	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.5-1.0		
	22-40	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.4-1.0		
	40-50	25-45	0.42-8.00	0.14-0.21	3.0-11.0	0.1-0.5		
	50	---	0.00-0.01	---	3.0-6.0	---		
Clear Lake silty clay loam, overwash-----	0-0.5	35-40	1.40-2.00	0.17-0.19	8.0-9.0	1.0-2.0		
	0.5-7	40-60	0.42-1.40	0.14-0.17	9.0-13.5	1.0-2.5		
	7-19	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.5-1.0		
	19-29	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.4-1.0		
	29-40	35-60	0.42-2.00	0.14-0.19	8.0-13.5	0.1-0.5		
	40-55	35-60	0.42-2.00	0.14-0.19	8.0-13.5	0.1-0.5		
	55-80	35-60	0.42-2.00	0.14-0.19	8.0-13.5	0.1-0.5		
221yu:								
Sites loam-----	0-6	15-27	4.00-14.00	0.14-0.17	0.0-2.9	2.0-10		
	6-16	27-35	4.00-14.00	0.16-0.18	3.0-5.9	0.0-0.5		
	16-51	35-60	1.40-4.00	0.13-0.16	3.0-5.9	0.0-0.5		
	51-61	27-35	4.00-14.00	0.15-0.18	3.0-5.9	0.0-0.5		
	61	---	---	---	---	---		
222yu:								
Sites loam-----	0-6	15-27	4.00-14.00	0.14-0.17	0.0-2.9	2.0-10		
	6-16	27-35	4.00-14.00	0.16-0.18	3.0-5.9	0.0-0.5		
	16-51	35-60	1.40-4.00	0.13-0.16	3.0-5.9	0.0-0.5		
	51-61	27-35	4.00-14.00	0.15-0.18	3.0-5.9	0.0-0.5		
	61	---	---	---	---	---		
225yu:								
Sites gravelly loam, bedrock substratum-----	0-5	15-27	4.00-14.00	0.12-0.15	0.0-2.9	2.0-10		
	5-53	30-40	1.40-4.00	0.13-0.16	3.0-5.9	0.0-0.5		
	53	---	---	---	---	---		
226yu:								
Sites gravelly loam, bedrock substratum-----	0-5	15-27	4.00-14.00	0.12-0.15	0.0-2.9	2.0-10		
	5-53	30-40	1.40-4.00	0.13-0.16	3.0-5.9	0.0-0.5		
	53	---	---	---	---	---		
227yu:								
Sites gravelly loam, bedrock substratum-----	0-5	15-27	4.00-14.00	0.12-0.15	0.0-2.9	2.0-10		
	5-53	30-40	1.40-4.00	0.13-0.16	3.0-5.9	0.0-0.5		
	53	---	---	---	---	---		
242yu:								
Surnuf loam-----	0-12	18-27	4.00-14.00	0.15-0.18	0.0-2.9	1.0-3.0		
	12-77	35-60	1.40-4.00	0.16-0.17	3.0-5.9	0.0-0.5		

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility		Organic matter
	In	Pct				um/sec	In/in	
243yu:								
Surnuf loam-----	0-12	18-27		4.00-14.00	0.15-0.18	0.0-2.9	1.0-3.0	
	12-77	35-60		1.40-4.00	0.16-0.17	3.0-5.9	0.0-0.5	
244yu:								
Surnuf loam-----	0-12	18-27		4.00-14.00	0.15-0.18	0.0-2.9	1.0-3.0	
	12-77	35-60		1.40-4.00	0.16-0.17	3.0-5.9	0.0-0.5	
245:								
Surnuf loam-----	0-12	18-27		4.00-14.00	0.15-0.18	0.0-2.9	1.0-3.0	
	12-77	35-60		1.40-4.00	0.16-0.17	3.0-5.9	0.0-0.5	
248yu:								
Trainer loam-----	0-9	18-27		4.00-14.00	0.14-0.16	0.0-2.9	0.5-1.0	
	9-36	18-27		4.00-14.00	0.12-0.15	0.0-2.9	0.0-0.5	
	36-66	10-18		14.00-42.00	0.09-0.12	0.0-2.9	0.0-0.5	
250:								
Llanoseco, occasionally flooded-----	0-8	27-35		2.00-4.00	0.19-0.21	3.0-6.0	1.0-3.0	
	8-18	35-40		1.40-4.00	0.17-0.19	6.0-9.0	1.0-3.0	
	18-28	40-50		0.90-1.40	0.16-0.17	7.0-10.5	1.0-3.0	
	28-41	40-50		0.90-1.40	0.16-0.17	7.0-10.5	0.5-1.0	
	41-57	40-60		0.42-1.40	0.14-0.17	7.0-13.5	0.5-1.0	
	57-71	40-60		0.42-1.40	0.14-0.17	7.0-13.5	0.1-0.5	
	71-83	40-60		0.90-1.40	0.16-0.17	7.0-13.5	0.1-0.5	
	83-89	40-50		0.90-1.40	0.16-0.17	7.0-10.5	0.1-0.5	
	89-93	---		0.00-0.01	---	---	---	
252:								
Whitecabin silty clay, occasionally flooded-----	0-5	40-55		0.60-1.40	0.15-0.17	7.0-12.0	1.0-2.0	
	5-13	45-55		0.60-1.20	0.15-0.17	9.5-12.0	0.1-0.9	
	13-26	45-55		0.60-1.20	0.15-0.17	9.5-12.0	0.1-0.9	
	26-35	45-55		0.60-1.20	0.15-0.17	9.5-15.0	0.1-0.9	
	35-45	35-55		0.60-2.00	0.15-0.17	6.0-12.0	0.1-0.9	
	45-53	35-55		0.60-2.00	0.15-0.17	6.0-12.0	0.1-0.9	
	53-63	---		0.00-0.01	---	0.0-2.0	0.1-0.5	
	63-72	---		0.00-0.01	---	0.0-2.0	0.1-0.5	
Ordferry silty clay, occasionally flooded-----	0-3	40-50		0.90-1.40	0.15-0.17	6.0-9.0	1.0-2.0	
	3-6	40-60		0.42-1.40	0.14-0.17	9.0-13.5	1.0-2.0	
	6-13	40-60		0.42-1.40	0.14-0.17	9.0-13.5	0.1-1.0	
	13-25	40-60		0.42-1.40	0.14-0.17	9.0-15.0	0.1-1.0	
	25-29	35-50		0.90-2.00	0.15-0.19	9.0-10.5	0.1-1.0	
	29-33	---		0.00-0.01	---	0.0-2.0	---	
	33-40	---		0.00-0.01	---	0.0-2.0	---	
252yu:								
Woodleaf gravelly loam-----	0-9	18-27		4.00-14.00	0.14-0.16	3.0-5.9	2.0-3.0	
	9-28	35-60		0.42-1.40	0.13-0.15	3.0-5.9	0.0-0.5	
	28	---		---	---	---	---	
253yu:								
Woodleaf gravelly loam-----	0-9	18-27		4.00-14.00	0.14-0.16	3.0-5.9	2.0-3.0	
	9-28	35-60		0.42-1.40	0.13-0.15	3.0-5.9	0.0-0.5	
	28	---		---	---	---	---	

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility		Organic matter
	In	Pct				um/sec	In/in	
255: Whitecabin silty clay loam, occasionally flooded-----	0-8	27-40		1.40-4.00	0.17-0.21	3.0-9.0	1.0-2.0	
	8-20	45-55		0.60-1.20	0.15-0.17	9.5-12.0	1.0-2.0	
	20-44	45-55		0.60-1.20	0.15-0.17	9.5-15.0	0.1-0.9	
	44-60	---		0.00-0.01	---	0.0-2.0	---	
Ordferry silty clay, occasionally flooded-----	0-3	40-50		0.90-1.40	0.15-0.17	6.0-9.0	1.0-2.0	
	3-6	40-60		0.42-1.40	0.14-0.17	9.0-13.5	1.0-2.0	
	6-13	40-60		0.42-1.40	0.14-0.17	9.0-13.5	0.1-1.0	
	13-25	40-60		0.42-1.40	0.14-0.17	9.0-15.0	0.1-1.0	
	25-29	35-50		0.90-2.00	0.15-0.19	9.0-10.5	0.1-1.0	
	29-33	---		0.00-0.01	---	0.0-2.0	---	
	33-40	---		0.00-0.01	---	0.0-2.0	---	
256: Whitecabin silt loam, occasionally flooded-----	0-6	18-27		4.00-14.00	0.18-0.20	0.0-3.0	1.0-2.0	
	6-13	45-55		0.60-1.20	0.14-0.16	9.5-12.0	1.0-2.0	
	13-27	45-55		0.60-1.20	0.14-0.16	9.5-15.0	0.1-0.9	
	27-42	45-55		0.60-1.20	0.14-0.16	9.5-12.0	0.1-0.9	
	42-54	35-40		1.40-2.00	0.17-0.19	3.0-9.0	0.1-0.9	
	54-62	---		0.00-0.01	---	---	---	
257: Llanoseco, frequently flooded	0-8	27-35		2.00-4.00	0.19-0.21	3.0-6.0	1.0-3.0	
	8-18	35-40		1.40-4.00	0.17-0.19	6.0-9.0	1.0-3.0	
	18-28	40-50		0.90-1.40	0.16-0.17	7.0-10.5	1.0-3.0	
	28-41	40-50		0.90-1.40	0.16-0.17	7.0-10.5	0.5-1.0	
	41-57	40-60		0.42-1.40	0.14-0.17	7.0-13.5	0.5-1.0	
	57-71	40-60		0.42-1.40	0.14-0.17	7.0-13.5	0.1-0.5	
	71-83	40-60		0.90-1.40	0.16-0.17	7.0-13.5	0.1-0.5	
	83-89	40-50		0.90-1.40	0.16-0.17	7.0-10.5	0.1-0.5	
	89-93	---		0.00-0.01	---	---	---	
258: Codora, occasionally flooded	0-6	27-35		2.00-4.00	0.19-0.21	3.0-6.0	1.0-3.0	
	6-11	27-35		2.00-4.00	0.19-0.21	3.0-6.0	1.0-3.0	
	11-22	35-40		1.40-2.00	0.17-0.19	6.0-9.0	1.0-3.0	
	22-38	35-40		1.40-2.00	0.17-0.19	6.0-9.0	0.5-1.0	
	38-60	27-45		1.20-4.00	0.15-0.21	3.0-9.5	0.5-1.0	
260: Ordferry silty clay, occasionally flooded-----	0-3	40-50		0.90-1.40	0.15-0.17	6.0-9.0	1.0-2.0	
	3-6	40-60		0.42-1.40	0.14-0.17	9.0-13.5	1.0-2.0	
	6-13	40-60		0.42-1.40	0.14-0.17	9.0-13.5	0.1-1.0	
	13-25	40-60		0.42-1.40	0.14-0.17	9.0-15.0	0.1-1.0	
	25-29	35-50		0.90-2.00	0.15-0.19	9.0-10.5	0.1-1.0	
	29-33	---		0.00-0.01	---	0.0-2.0	---	
	33-40	---		0.00-0.01	---	0.0-2.0	---	
280: Columbia taxadjunct stratified very fine sandy loam-----	0-8	5-15		17.00-80.00	0.14-0.16	0.0-0.7	0.5-1.0	
	8-10	5-15		17.00-80.00	0.14-0.16	0.0-0.7	0.5-1.0	
	10-19	5-15		17.00-80.00	0.14-0.16	0.0-0.7	0.5-1.0	
	19-30	5-15		17.00-80.00	0.14-0.16	0.0-0.7	0.5-1.0	
	30-40	5-15		17.00-80.00	0.16-0.19	0.0-0.7	0.5-2.0	
	40-60	5-15		17.00-80.00	0.16-0.19	0.0-0.7	0.5-1.0	

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility		Organic matter
	In	Pct				um/sec	In/in	
290:								
Perkins gravelly loam-----	0-8	13-26		6.00-19.00	0.11-0.15	0.5-3.0	1.2-2.0	
	8-24	20-35		2.00-12.00	0.07-0.18	1.0-6.0	0.5-0.9	
	24-38	17-35		2.00-15.00	0.06-0.18	0.8-6.0	0.5-0.9	
	38-48	12-20		12.00-20.00	0.05-0.07	0.6-1.0	0.0-0.5	
	48-73	10-20		12.00-30.00	0.05-0.11	0.5-1.0	0.0-0.5	
300:								
Redsluff gravelly loam-----	0-2	16-24		5.00-9.00	0.11-0.18	1.0-3.0	1.6-5.0	
	2-5	20-35		2.00-7.00	0.08-0.17	2.0-6.0	0.5-3.0	
	5-12	20-35		2.00-7.00	0.08-0.17	2.0-6.0	0.5-3.0	
	12-21	20-35		2.00-7.00	0.08-0.17	2.0-6.0	0.5-3.0	
	21-29	20-35		2.00-7.00	0.08-0.17	2.0-6.0	0.5-3.0	
	29-37	10-20		7.00-28.00	0.02-0.13	0.5-2.0	0.1-0.5	
	37-42	10-20		7.00-28.00	0.02-0.13	0.5-2.0	0.1-0.5	
	42-80	1-8		30.00-141.00	0.01-0.08	0.1-0.2	0.1-0.5	
301:								
Wafap gravelly loam-----	0-1	16-26		1.40-9.00	0.09-0.16	2.0-3.0	2.0-5.0	
	1-5	22-35		1.40-5.00	0.08-0.19	2.0-6.0	1.0-3.0	
	5-13	30-45		0.42-3.00	0.02-0.17	4.5-9.0	1.0-3.0	
	13-32	30-45		0.42-3.00	0.02-0.17	4.5-9.0	0.2-1.0	
	32-39	30-45		0.42-3.00	0.02-0.17	4.5-9.0	0.2-1.0	
	39-46	20-40		1.00-4.00	0.02-0.12	1.0-7.5	0.1-0.3	
	46	---		0.01-0.42	---	---	---	
Hamslough clay-----	0-3	40-60		0.42-1.40	0.10-0.15	9.0-13.5	2.0-5.0	
	3-14	40-60		0.42-1.40	0.10-0.15	9.0-13.5	2.0-5.0	
	14-19	40-60		0.42-1.40	0.05-0.14	9.0-13.5	0.5-2.0	
	19-27	30-60		0.42-2.00	0.03-0.14	4.5-13.5	0.5-2.0	
	27	---		0.01-0.42	---	---	---	
302:								
Redtough loam-----	0-1	15-22		6.00-10.00	0.10-0.17	1.0-2.0	1.0-4.0	
	1-7	18-27		4.00-9.00	0.10-0.17	1.0-4.0	0.5-1.0	
	7-13	18-27		4.00-9.00	0.10-0.17	1.0-4.0	0.5-1.0	
	13	---		0.00-0.01	---	---	---	
Redswale cobbly loam-----	0-1	15-22		6.00-10.00	0.08-0.16	1.0-2.0	2.0-5.0	
	1-7	18-27		4.00-9.00	0.08-0.14	1.0-3.0	0.5-2.0	
	7	---		0.00-0.01	---	---	---	
303:								
Munjar gravelly loam-----	0-2	20-24		10.00-13.00	0.11-0.15	1.0-3.0	2.0-5.0	
	2-5	23-24		10.00-11.00	0.11-0.15	2.0-3.0	0.8-1.2	
	5-9	24-35		2.00-10.00	0.03-0.18	2.0-6.0	0.5-0.8	
	9-16	24-35		2.00-10.00	0.03-0.18	2.0-6.0	0.5-0.8	
	16-22	24-35		2.00-10.00	0.03-0.18	2.0-6.0	0.5-0.8	
	22-31	35-40		1.40-2.00	0.05-0.11	6.0-9.0	0.0-0.5	
	31-46	27-35		0.00-0.01	---	3.0-6.0	---	
Tuscan taxadjunct gravelly clay loam-----	0-2	18-30		2.50-14.00	0.10-0.19	0.9-6.0	2.0-5.0	
	2-5	25-46		1.20-8.00	0.10-0.19	2.0-9.0	0.8-1.2	
	5-13	35-46		1.20-2.00	0.10-0.17	6.0-9.0	0.5-0.8	
	13-23	35-46		1.20-2.00	0.10-0.17	6.0-9.0	0.5-0.8	
	23-29	35-46		1.20-2.00	0.03-0.16	6.0-9.0	0.0-0.5	
	29	---		0.00-0.01	---	---	---	

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility		Organic matter
	In	Pct				um/sec	In/in	
303: Galt clay-----	0-3	40-60		0.42-1.40	0.14-0.17	9.0-13.5	1.0-2.0	
	3-13	40-60		0.42-1.40	0.14-0.17	9.0-13.5	1.0-2.0	
	13-29	40-60		0.42-1.40	0.14-0.17	9.0-13.5	0.2-0.8	
	29-32	37-60		0.42-2.20	0.14-0.18	6.5-13.5	0.2-0.8	
	32-39	---		0.00-0.01	---	---	---	
304: Redtough loam-----	0-1	15-22		6.00-10.00	0.10-0.17	1.0-2.0	1.0-4.0	
	1-7	18-27		4.00-9.00	0.10-0.17	1.0-4.0	0.5-1.0	
	7-13	18-27		4.00-9.00	0.10-0.17	1.0-4.0	0.5-1.0	
	13	---		0.00-0.01	---	---	---	
305: Redtough gravelly loam-----	0-2	15-22		6.00-14.00	0.10-0.17	1.0-2.0	1.0-4.0	
	2-5	18-27		4.00-10.00	0.10-0.17	1.0-4.0	0.5-1.0	
	5-8	18-27		4.00-9.00	0.10-0.17	1.0-4.0	0.5-1.0	
	8-15	18-30		4.00-9.00	0.10-0.17	1.0-4.0	0.5-1.0	
	15	---		0.00-0.01	---	---	---	
Redswale loam-----	0-1	15-22		6.00-14.00	0.08-0.16	1.0-2.0	2.0-5.0	
	1-5	18-27		4.00-12.00	0.08-0.14	1.0-3.0	0.5-2.0	
	5	---		0.00-0.01	---	---	---	
Anita, gravelly duripan-----	0-3	40-60		0.42-1.40	0.10-0.15	9.0-13.5	2.0-5.0	
	3-8	40-60		0.42-1.40	0.10-0.14	9.0-13.5	0.5-2.0	
	8-15	40-60		0.42-1.40	0.10-0.14	9.0-13.5	0.5-2.0	
	15	---		0.00-0.01	---	---	---	
306: Duric Xerarents, fill-----	0-8	18-27		4.00-14.00	0.08-0.18	0.9-3.0	0.0-2.0	
	8-14	18-35		2.00-14.00	0.13-0.18	0.9-6.0	0.0-2.0	
	14-20	18-35		2.00-14.00	0.13-0.18	0.9-6.0	0.0-2.0	
	20-36	10-27		4.00-30.00	0.11-0.18	0.5-3.0	0.0-2.0	
	36-40	40-55		0.60-1.40	0.10-0.16	7.3-9.0	0.0-2.0	
	40	---		0.00-0.01	---	---	---	
Duric Xerarents, cut-----	0-13	10-30		2.50-30.00	0.10-0.21	0.5-4.2	0.0-2.0	
	13-15	12-50		0.90-20.00	0.10-0.21	0.6-9.0	0.0-2.0	
	15	---		0.00-0.01	---	---	---	
307: Duric Xerarents clay loam, leveled-----	0-2	18-40		1.40-14.00	0.14-0.21	0.9-7.5	0.0-2.0	
	2-12	30-55		0.60-3.00	0.15-0.21	4.2-9.0	0.0-2.0	
	12	---		0.00-0.01	---	---	---	
310: Kimball loam-----	0-2	10-25		8.00-30.00	0.12-0.17	0.5-3.0	1.2-3.0	
	2-4	10-25		8.00-30.00	0.12-0.17	0.5-3.0	1.2-3.0	
	4-6	10-25		8.00-30.00	0.12-0.17	0.5-3.0	0.5-0.9	
	6-10	10-25		8.00-30.00	0.12-0.17	0.5-3.0	0.5-0.9	
	10-17	24-30		3.00-10.00	0.15-0.21	2.0-4.0	0.0-0.5	
	17-34	40-50		0.90-1.40	0.14-0.17	6.0-9.0	0.0-0.5	
	34-46	30-40		1.40-2.50	0.13-0.21	4.0-7.3	0.0-0.5	
	46-64	27-35		2.00-2.50	0.12-0.16	3.0-6.0	0.0-0.5	

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility		Organic matter
	In	Pct				um/sec	In/in	
317:								
Thompsonflat loam-----	0-2	12-22	12.00-20.00	0.09-0.17	0.0-2.0	0.5-1.2		
	2-5	18-38	1.60-14.00	0.11-0.18	0.9-7.0	0.1-0.5		
	5-12	18-38	1.60-14.00	0.09-0.17	0.9-7.0	0.1-0.5		
	12-19	18-38	1.60-14.00	0.11-0.17	0.9-7.0	0.1-0.5		
	19-29	18-38	1.60-14.00	0.11-0.17	0.9-7.0	0.1-0.5		
	29-35	38-55	0.60-1.60	0.05-0.16	6.0-9.0	0.1-0.5		
	35-43	5-38	1.40-4.00	0.02-0.17	0.0-7.0	0.0-0.3		
	43-80	5-38	1.40-4.00	0.02-0.11	0.0-7.0	0.0-0.3		
318:								
Thompsonflat fine sandy loam	0-3	12-22	12.00-20.00	0.09-0.17	0.6-1.6	0.5-1.2		
	3-7	18-38	1.60-14.00	0.11-0.18	0.9-7.0	0.1-0.5		
	7-11	18-38	1.60-14.00	0.09-0.17	0.9-7.0	0.1-0.5		
	11-15	18-38	1.60-14.00	0.11-0.17	0.9-7.0	0.1-0.5		
	15-22	38-55	0.60-1.60	0.05-0.16	6.0-9.0	0.1-0.5		
	22-35	5-38	1.40-4.00	0.02-0.17	0.0-7.0	0.0-0.3		
	35-45	5-38	1.40-4.00	0.02-0.11	0.0-7.0	0.0-0.3		
	45-53	5-38	1.40-4.00	0.02-0.11	0.0-7.0	0.0-0.3		
	53-66	5-38	1.40-4.00	0.02-0.11	0.0-7.0	0.0-0.3		
	66-80	5-38	1.40-4.00	0.01-0.11	0.0-7.0	0.0-0.3		
Oroville gravelly fine sandy loam-----	0-2	15-24	10.00-17.00	0.10-0.14	0.7-2.5	0.5-2.0		
	2-6	18-25	8.00-14.00	0.10-0.17	0.9-2.5	0.2-0.8		
	6-13	22-35	2.00-12.00	0.08-0.20	1.5-6.0	0.1-0.5		
	13-17	45-52	0.80-1.00	0.07-0.16	6.0-9.0	0.1-0.3		
	17-23	45-52	0.80-1.00	0.07-0.16	6.0-9.0	0.0-0.3		
	23-31	---	0.00-0.01	---	---	---		
	31-60	---	0.00-0.01	---	---	---		
320:								
Vistarobles sandy loam-----	0-5	16-26	4.00-16.00	0.09-0.18	0.8-3.0	1.0-2.0		
	5-10	16-26	4.00-16.00	0.09-0.18	0.8-3.0	1.0-2.0		
	10-14	40-50	0.80-1.40	0.10-0.16	7.0-9.0	0.4-1.0		
	14-34	3-10	0.00-0.01	0.02-0.08	0.0-1.0	0.0-0.2		
	34-40	3-15	17.00-100.00	0.02-0.12	0.0-1.0	0.0-0.2		
Redding loam-----	0-4	12-26	6.00-20.00	0.10-0.17	0.5-3.0	1.0-2.0		
	4-11	12-26	6.00-20.00	0.10-0.17	0.5-3.0	0.2-1.0		
	11-24	15-26	6.00-17.00	0.08-0.18	0.5-3.0	0.1-0.5		
	24-35	40-50	0.80-1.40	0.10-0.16	7.0-9.0	0.5-1.0		
	35-40	---	0.00-0.01	---	---	0.0-0.2		
321:								
Durixeralfs, fine-loamy, gravelly fine sandy loam----	0-1	12-15	17.00-20.00	0.09-0.15	0.5-1.0	0.0-1.0		
	1-5	15-30	3.00-17.00	0.08-0.19	0.5-4.0	0.0-0.8		
	5-10	15-30	3.00-17.00	0.08-0.19	0.5-4.0	0.0-0.6		
	10-18	15-30	3.00-17.00	0.08-0.19	0.5-4.0	0.0-0.5		
	18-24	28-35	2.00-4.00	0.06-0.21	3.5-6.0	0.0-0.5		
	24-27	35-50	0.90-2.00	0.05-0.16	6.0-9.0	0.0-0.2		
	---	---	0.00-0.01	---	---	---		
Durixeralfs, loamy-skeletal, gravelly fine sandy loam----	0-1	10-26	6.00-30.00	0.11-0.16	0.5-3.0	0.0-1.0		
	1-4	18-30	3.00-14.00	0.06-0.18	0.9-4.0	0.0-0.8		
	4-9	28-38	1.40-3.00	0.07-0.17	4.0-7.0	0.0-0.5		
	9	---	0.00-0.01	---	---	---		

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
321: Typic Petraquepts silty clay	0-3	38-50	0.90-1.60	0.14-0.18	6.0-10.5	0.0-1.0
	3-11	42-55	0.70-1.40	0.10-0.15	8.0-12.0	0.0-0.8
	11	---	0.00-0.01	---	---	---
330: Wilsoncreek loam, occasionally flooded-----	0-7	13-18	14.00-19.00	0.15-0.17	0.5-1.0	2.0-3.0
	7-14	13-27	4.00-19.00	0.15-0.17	0.5-3.0	1.0-3.0
	14-25	13-27	4.00-19.00	0.15-0.17	0.5-3.0	1.0-3.0
	25-34	18-27	4.00-14.00	0.16-0.20	0.9-3.0	1.0-3.0
	34-44	18-27	4.00-14.00	0.16-0.20	0.9-3.0	0.5-1.0
	44-60	15-27	4.00-14.00	0.16-0.20	0.7-3.0	0.5-1.0
Trainer loam, occasionally flooded-----	0-7	18-27	4.00-14.00	0.14-0.18	0.9-3.0	0.5-1.0
	7-13	18-27	4.00-14.00	0.14-0.18	0.9-3.0	0.5-1.0
	13-26	18-27	4.00-14.00	0.12-0.18	0.9-3.0	0.0-0.5
	26-36	18-27	4.00-14.00	0.12-0.18	0.9-3.0	0.0-0.5
	36-46	10-18	14.00-42.00	0.09-0.17	0.5-1.0	0.0-0.5
	46-61	10-18	14.00-42.00	0.09-0.17	0.5-1.0	0.0-0.5
331: Thompsonflat loam-----	0-2	12-22	12.00-20.00	0.09-0.17	0.0-2.0	0.5-1.2
	2-5	18-38	1.60-14.00	0.11-0.18	0.9-7.0	0.1-0.5
	5-12	18-38	1.60-14.00	0.09-0.17	0.9-7.0	0.1-0.5
	12-19	18-38	1.60-14.00	0.11-0.17	0.9-7.0	0.1-0.5
	19-29	18-38	1.60-14.00	0.11-0.17	0.9-7.0	0.1-0.5
	29-35	38-55	0.60-1.60	0.05-0.16	6.0-9.0	0.1-0.5
	35-43	5-38	1.40-4.00	0.02-0.17	0.0-7.0	0.0-0.3
	43-80	5-38	1.40-4.00	0.02-0.11	0.0-7.0	0.0-0.3
335: Galt clay loam-----	0-6	30-40	1.40-2.50	0.17-0.20	4.0-9.0	1.0-2.0
	6-20	30-60	0.42-2.50	0.14-0.20	4.0-13.5	1.0-2.0
	20-27	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.2-0.8
	27-30	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.2-0.8
	30	---	0.00-0.01	---	---	---
336: Galt clay-----	0-3	40-60	0.42-1.40	0.14-0.17	9.0-13.5	1.0-2.0
	3-13	40-60	0.42-1.40	0.14-0.17	9.0-13.5	1.0-2.0
	13-29	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.2-0.8
	29-32	37-60	0.42-2.20	0.14-0.18	9.0-13.5	0.2-0.8
	32-39	---	0.00-0.01	---	---	---
337: Galt clay loam-----	0-6	30-40	1.40-2.50	0.17-0.20	4.0-9.0	1.0-2.0
	6-20	30-60	0.42-2.50	0.14-0.20	4.0-13.5	1.0-2.0
	20-27	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.2-0.8
	27-30	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.2-0.8
	30	---	0.00-0.01	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct					
338:							
Oxyaquic Xerofluvents silt loam-----	0-6	15-20	12.00-17.00	0.17-0.20	0.7-1.0	0.5-2.0	
	6-20	15-20	12.00-17.00	0.17-0.20	0.7-1.0	0.0-0.5	
	20-32	5-10	30.00-80.00	0.07-0.08	0.0-1.0	0.0-0.5	
	32-36	5-10	30.00-80.00	0.09-0.11	0.0-1.0	0.0-0.5	
	36-46	5-5	80.00-80.00	0.05-0.05	0.0-1.0	0.0-0.5	
	46-50	15-20	12.00-17.00	0.17-0.20	0.7-1.0	0.0-0.5	
	50-55	5-10	30.00-80.00	0.09-0.11	0.0-1.0	0.0-0.5	
	55-60	15-20	12.00-17.00	0.17-0.20	0.9-1.0	0.0-0.5	
339:							
Oxyaquic Xerofluvents sandy loam, frequently flooded----	0-8	10-17	15.00-30.00	0.12-0.13	0.5-1.0	0.5-2.0	
	8-12	5-17	15.00-80.00	0.11-0.13	0.2-1.0	0.0-0.5	
	12-16	5-17	15.00-80.00	0.13-0.15	0.2-1.0	0.0-0.5	
	16-60	5-17	15.00-80.00	0.06-0.13	0.2-1.0	0.0-0.5	
340:							
Rock outcrop, Lovejoy basalt.							
Thermalrocks very gravelly loam-----	0-1	14-18	8.00-10.00	0.05-0.14	0.0-2.9	4.0-8.0	
	1-5	18-28	4.00-8.00	0.02-0.12	0.0-2.9	1.5-5.0	
	5	---	---	---	---	---	
Campbellhills gravelly loam--	0-2	15-22	6.00-10.00	0.10-0.15	0.0-2.9	4.0-8.0	
	2-7	18-27	4.00-9.00	0.08-0.15	0.0-2.9	3.0-6.0	
	7-17	25-40	1.40-5.00	0.07-0.14	0.0-7.0	0.3-2.0	
	17-29	25-40	1.40-5.00	0.07-0.14	0.0-7.0	0.3-2.0	
	29-39	25-40	1.40-5.00	0.03-0.09	0.0-7.0	0.3-2.0	
	39-50	25-40	1.40-5.00	0.03-0.09	0.0-7.0	0.3-2.0	
	50	---	---	---	---	---	
341:							
Elsey loam-----	0-3	15-22	6.00-10.00	0.12-0.16	0.0-2.9	4.0-8.0	
	3-8	18-24	5.00-9.00	0.11-0.17	0.0-2.9	3.0-6.0	
	8-17	19-27	4.00-9.00	0.11-0.16	0.0-5.9	1.0-3.0	
	17-25	19-27	4.00-9.00	0.11-0.16	0.0-5.9	1.0-3.0	
	25-32	25-33	2.70-5.00	0.07-0.18	3.0-5.9	0.2-1.0	
	32-38	25-33	2.70-5.00	0.07-0.18	3.0-5.9	0.2-1.0	
	38	---	---	---	---	---	
Beatsonhollow gravelly loam--	0-3	14-22	6.00-10.00	0.10-0.14	0.0-2.9	4.0-8.0	
	3-10	14-22	6.00-10.00	0.10-0.14	0.0-2.9	4.0-8.0	
	10-17	20-28	3.00-7.00	0.05-0.14	0.0-2.9	1.5-2.0	
	17	---	---	---	---	---	
Campbellhills gravelly loam--	0-2	15-22	6.00-10.00	0.10-0.15	0.0-2.9	4.0-8.0	
	2-7	18-27	4.00-9.00	0.08-0.15	0.0-2.9	3.0-6.0	
	7-17	25-40	1.40-5.00	0.07-0.14	0.0-7.0	0.3-2.0	
	17-29	25-40	1.40-5.00	0.07-0.14	0.0-7.0	0.3-2.0	
	29-39	25-40	1.40-5.00	0.03-0.09	0.0-7.0	0.3-2.0	
	39-50	25-40	1.40-5.00	0.03-0.09	0.0-7.0	0.3-2.0	
	50	---	---	---	---	---	
Rock outcrop, Lovejoy basalt.							

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
342:						
Thermalrocks very gravelly loam-----	0-1	14-18	8.00-10.00	0.05-0.14	0.0-2.9	4.0-8.0
	1-5	18-28	4.00-8.00	0.02-0.12	0.0-2.9	1.5-5.0
	5	---	---	---	---	---
Beatsonhollow taxadjunct fine sandy loam-----	0-1	15-18	14.00-17.00	0.11-0.15	0.0-3.0	4.0-8.0
	1-6	18-27	4.00-14.00	0.10-0.17	0.0-3.0	1.5-5.0
	6-10	18-27	4.00-14.00	0.10-0.17	0.0-3.0	1.5-5.0
	10-15	18-27	4.00-14.00	0.10-0.17	0.0-3.0	1.5-5.0
	15-18	18-27	4.00-14.00	0.10-0.17	0.0-3.0	1.5-5.0
	18	---	---	---	---	---
Rock outcrop, Lovejoy basalt.						
343:						
Coalcanyon very cobbly loam--	0-2	14-18	8.00-10.00	0.06-0.14	0.0-2.9	8.0-15
	2-11	16-22	6.00-9.00	0.06-0.11	0.0-2.9	4.0-8.0
	11-27	22-35	2.00-6.00	0.05-0.14	0.0-5.9	0.5-3.0
	27-43	22-35	2.00-6.00	0.03-0.14	0.0-5.9	0.5-3.0
	43-65	22-35	2.00-6.00	0.03-0.14	0.0-5.9	0.5-3.0
Coonhollow gravelly loam----	0-3	16-22	6.00-9.00	0.08-0.16	0.0-2.9	8.0-15
	3-11	18-22	6.00-8.00	0.08-0.16	0.0-2.9	4.0-8.0
	11-22	18-38	2.00-8.00	0.03-0.19	0.0-7.0	0.5-3.0
	22-32	18-38	2.00-8.00	0.03-0.19	0.0-7.0	0.5-3.0
	32-45	18-38	2.00-8.00	0.03-0.19	0.0-7.0	0.5-3.0
	45-50	---	---	---	---	---
	50	---	---	---	---	---
344:						
Coalcanyon very cobbly loam--	0-2	14-18	8.00-10.00	0.06-0.14	0.0-2.9	8.0-15
	2-11	16-22	6.00-9.00	0.06-0.11	0.0-2.9	4.0-8.0
	11-27	22-35	2.00-6.00	0.05-0.14	0.0-5.9	0.5-3.0
	27-43	22-35	2.00-6.00	0.03-0.14	0.0-5.9	0.5-3.0
	43-65	22-35	2.00-6.00	0.03-0.14	0.0-5.9	0.5-3.0
Coonhollow gravelly loam----	0-3	16-22	6.00-9.00	0.08-0.16	0.0-2.9	8.0-15
	3-11	18-22	6.00-8.00	0.08-0.16	0.0-2.9	4.0-8.0
	11-22	18-38	2.00-8.00	0.03-0.19	0.0-7.0	0.5-3.0
	22-32	18-38	2.00-8.00	0.03-0.19	0.0-7.0	0.5-3.0
	32-45	18-38	2.00-8.00	0.03-0.19	0.0-7.0	0.5-3.0
	45-50	---	---	---	---	---
	50	---	---	---	---	---
Rock outcrop, Lovejoy basalt.						
346:						
Cherotable loam-----	0-2	18-24	5.00-8.00	0.11-0.17	0.0-2.9	7.0-12
	2-8	18-35	2.00-8.00	0.10-0.21	0.0-5.9	1.0-3.0
	8-14	18-35	2.00-8.00	0.10-0.21	0.0-5.9	1.0-3.0
	14-21	18-35	2.00-8.00	0.10-0.21	0.0-5.9	1.0-3.0
	21-30	18-35	2.00-8.00	0.10-0.21	0.0-5.9	1.0-3.0
	30-45	35-50	0.50-2.00	0.06-0.16	5.8-11.0	0.5-2.0
	45	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility		Organic matter
	In	Pct				um/sec	In/in	
346:								
Elsey loam-----	0-3	15-22		6.00-10.00	0.12-0.16	0.0-2.9	4.0-8.0	
	3-8	18-24		5.00-9.00	0.11-0.17	0.0-2.9	3.0-6.0	
	8-17	19-27		4.00-9.00	0.11-0.16	0.0-5.9	1.0-3.0	
	17-25	19-27		4.00-9.00	0.11-0.16	0.0-5.9	1.0-3.0	
	25-32	25-33		2.70-5.00	0.07-0.18	3.0-5.9	0.2-1.0	
	32-38	25-33		2.70-5.00	0.07-0.18	3.0-5.9	0.2-1.0	
	38	---		---	---	---	---	
347:								
Haplic Palexeralfs loam-----	0-3	15-18		14.00-17.00	0.09-0.14	0.7-1.0	2.0-4.0	
	3-9	22-30		3.00-12.00	0.03-0.14	1.0-4.0	0.5-2.0	
	9-22	22-30		3.00-12.00	0.03-0.11	1.0-4.2	0.5-2.0	
	22-31	25-40		1.40-8.00	0.03-0.09	2.6-7.0	0.5-1.0	
	31-45	25-40		1.40-8.00	0.03-0.09	2.6-7.0	0.5-1.0	
	45-52	25-40		1.40-8.00	0.03-0.09	2.6-7.0	0.5-1.0	
	52-64	40-50		0.90-1.40	0.03-0.09	7.0-9.0	0.2-0.8	
353:								
Cherokeespring gravelly silt loam-----	0-3	15-20		6.00-8.00	0.14-0.17	0.0-2.9	8.0-15	
	3-7	20-30		3.00-6.00	0.11-0.19	0.0-5.9	3.0-8.0	
	7-16	20-30		3.00-6.00	0.11-0.19	0.0-5.9	3.0-8.0	
	16-30	28-35		2.00-4.00	0.12-0.19	3.5-5.9	0.5-3.0	
	30-42	28-35		2.00-4.00	0.12-0.19	3.5-5.9	0.5-3.0	
	42-60	35-42		1.30-2.00	0.07-0.16	5.8-8.0	0.2-1.0	
	60-68	35-42		1.30-2.00	0.07-0.16	5.8-8.0	0.2-1.0	
355:								
Coalcanyon very cobbly loam--	0-2	14-18		8.00-10.00	0.06-0.14	0.0-2.9	8.0-15	
	2-11	16-22		6.00-9.00	0.06-0.11	0.0-2.9	4.0-8.0	
	11-27	22-35		2.00-6.00	0.05-0.14	0.0-5.9	0.5-3.0	
	27-43	22-35		2.00-6.00	0.03-0.14	0.0-5.9	0.5-3.0	
	43-65	22-35		2.00-6.00	0.03-0.14	0.0-5.9	0.5-3.0	
Talus.								
356:								
Coalcanyon very cobbly loam--	0-2	14-18		8.00-10.00	0.06-0.14	0.0-2.9	8.0-15	
	2-11	16-22		6.00-9.00	0.06-0.11	0.0-2.9	4.0-8.0	
	11-27	22-35		2.00-6.00	0.05-0.14	0.0-5.9	0.5-3.0	
	27-43	22-35		2.00-6.00	0.03-0.14	0.0-5.9	0.5-3.0	
	43-65	22-35		2.00-6.00	0.03-0.14	0.0-5.9	0.5-3.0	
Rock outcrop, basalt cliffs.								
Talus.								
Coonhollow gravelly loam-----	0-3	16-22		6.00-9.00	0.08-0.16	0.0-2.9	8.0-15	
	3-11	18-22		6.00-8.00	0.08-0.16	0.0-2.9	4.0-8.0	
	11-22	18-38		2.00-8.00	0.03-0.19	0.0-7.0	0.5-3.0	
	22-32	18-38		2.00-8.00	0.03-0.19	0.0-7.0	0.5-3.0	
	32-45	18-38		2.00-8.00	0.03-0.19	0.0-7.0	0.5-3.0	
	45-50	---		---	---	---	---	
	50	---		---	---	---	---	

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
360: Typic Xerofluvents, coarse- loamy-----	0-3	6-18	14.00-60.00	0.05-0.15	0.0-1.0	0.0-0.5
	3-11	1-32	4.00-141.00	0.02-0.20	0.0-2.9	0.0-0.2
	11-20	1-32	4.00-141.00	0.02-0.20	0.0-2.9	0.0-0.2
	20-24	1-32	4.00-141.00	0.02-0.20	0.0-2.9	0.0-0.2
	24-31	1-32	4.00-141.00	0.02-0.20	0.0-2.9	0.0-0.2
	31-45	1-32	4.00-141.00	0.02-0.20	0.0-2.9	0.0-0.2
	45-51	1-32	4.00-141.00	0.01-0.20	0.0-2.9	0.0-0.2
	51-66	1-32	4.00-141.00	0.01-0.20	0.0-2.9	0.0-0.2
	66-84	1-32	4.00-141.00	0.01-0.20	0.0-2.9	0.0-0.2
	84-95	1-32	4.00-141.00	0.01-0.20	0.0-2.9	0.0-0.2
Typic Xerofluvents, sandy- skeletal-----	0-3	5-18	14.00-80.00	0.04-0.14	0.0-1.0	0.0-0.5
	3-9	1-18	14.00-141.00	0.01-0.12	0.0-1.0	0.0-0.2
	9-16	1-5	80.00-141.00	0.01-0.03	0.0-0.5	0.0-0.2
	16-22	1-5	80.00-141.00	0.01-0.03	0.0-0.5	0.0-0.2
	22-30	1-5	80.00-141.00	0.01-0.03	0.0-0.5	0.0-0.2
	30-40	1-5	80.00-141.00	0.01-0.03	0.0-0.5	0.0-0.2
	40-50	1-5	80.00-141.00	0.01-0.03	0.0-0.5	0.0-0.2
	50-98	1-5	80.00-141.00	0.01-0.03	0.0-0.5	0.0-0.2
361: Typic Xerofluvents, sandy- skeletal-----	0-3	5-18	14.00-80.00	0.04-0.14	0.0-1.0	0.0-0.5
	3-9	1-18	14.00-141.00	0.01-0.12	0.0-1.0	0.0-0.2
	9-16	1-5	80.00-141.00	0.01-0.03	0.0-0.5	0.0-0.2
	16-22	1-5	80.00-141.00	0.01-0.03	0.0-0.5	0.0-0.2
	22-30	1-5	80.00-141.00	0.01-0.03	0.0-0.5	0.0-0.2
	30-40	1-5	80.00-141.00	0.01-0.03	0.0-0.5	0.0-0.2
	40-50	1-5	80.00-141.00	0.01-0.03	0.0-0.5	0.0-0.2
	50-98	1-5	80.00-141.00	0.01-0.03	0.0-0.5	0.0-0.2
362: Ultic Haploxeralfs, sandstone, low elevation, very deep-----	0-2	14-20	10.00-21.00	0.11-0.17	0.0-1.0	1.0-6.0
	2-8	20-35	1.40-4.00	0.11-0.21	1.0-6.0	0.5-1.0
	8-18	20-35	1.40-4.00	0.11-0.21	1.0-6.0	0.5-1.0
	18-28	25-40	1.00-3.50	0.11-0.21	3.0-7.5	0.1-0.5
	28-39	25-40	1.00-3.50	0.11-0.21	3.0-7.5	0.1-0.5
	39-49	25-35	1.40-5.00	0.12-0.21	3.0-6.0	0.1-0.3
	49-56	12-22	3.80-26.00	0.11-0.18	0.0-1.0	0.1-0.2
	56-70	12-22	3.80-26.00	0.11-0.18	0.0-1.0	0.1-0.2
Ultic Haploxeralfs, sandstone, low elevation, deep-----	0-3	14-20	10.00-21.00	0.11-0.17	0.0-1.0	1.0-6.0
	3-8	20-30	2.00-8.00	0.12-0.18	1.0-4.5	0.5-1.0
	8-15	20-30	2.00-8.00	0.12-0.18	1.0-4.5	0.5-1.0
	15-24	10-30	2.00-28.00	0.12-0.18	0.0-4.5	0.1-0.5
	24-32	10-30	2.00-28.00	0.12-0.18	0.0-4.5	0.1-0.5
	32-41	10-30	2.00-28.00	0.12-0.18	0.0-4.5	0.1-0.5
	41	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility		Organic matter
	In	Pct				um/sec	In/in	
363:								
Ultic Haploxeralfs, sandstone, low elevation, very deep-----	0-2	14-20		10.00-21.00	0.11-0.17	0.0-1.0	1.0-6.0	
	2-8	20-35		1.40-4.00	0.11-0.21	1.0-6.0	0.5-1.0	
	8-18	20-35		1.40-4.00	0.11-0.21	1.0-6.0	0.5-1.0	
	18-28	25-40		1.00-3.50	0.11-0.21	3.0-7.5	0.1-0.5	
	28-39	25-40		1.00-3.50	0.11-0.21	3.0-7.5	0.1-0.5	
	39-49	25-35		1.40-5.00	0.12-0.21	3.0-6.0	0.1-0.3	
	49-56	12-22		3.80-26.00	0.11-0.18	0.0-1.0	0.1-0.2	
	56-70	12-22		3.80-26.00	0.11-0.18	0.0-1.0	0.1-0.2	
Ultic Haploxeralfs, sandstone, low elevation, deep-----	0-3	14-20		10.00-21.00	0.11-0.17	0.0-1.0	1.0-6.0	
	3-8	20-30		2.00-8.00	0.12-0.18	1.0-4.5	0.5-1.0	
	8-15	20-30		2.00-8.00	0.12-0.18	1.0-4.5	0.5-1.0	
	15-24	10-30		2.00-28.00	0.12-0.18	0.0-4.5	0.1-0.5	
	24-32	10-30		2.00-28.00	0.12-0.18	0.0-4.5	0.1-0.5	
	32-41	10-30		2.00-28.00	0.12-0.18	0.0-4.5	0.1-0.5	
	41	---		---	---	---	---	
	41	---		---	---	---	---	
364:								
Ultic Haploxeralfs, sandstone, low elevation, deep-----	0-3	14-20		10.00-21.00	0.11-0.17	0.0-1.0	1.0-6.0	
	3-8	20-30		2.00-8.00	0.12-0.18	1.0-4.5	0.5-1.0	
	8-15	20-30		2.00-8.00	0.12-0.18	1.0-4.5	0.5-1.0	
	15-24	10-30		2.00-28.00	0.12-0.18	0.0-4.5	0.1-0.5	
	24-32	10-30		2.00-28.00	0.12-0.18	0.0-4.5	0.1-0.5	
	32-41	10-30		2.00-28.00	0.12-0.18	0.0-4.5	0.1-0.5	
	41	---		---	---	---	---	
Ultic Haploxeralfs, sandstone, low elevation, very deep-----	0-2	14-20		10.00-21.00	0.11-0.17	0.0-1.0	1.0-6.0	
	2-8	20-35		1.40-4.00	0.11-0.21	1.0-6.0	0.5-1.0	
	8-18	20-35		1.40-4.00	0.11-0.21	1.0-6.0	0.5-1.0	
	18-28	25-40		1.00-3.50	0.11-0.21	3.0-7.5	0.1-0.5	
	28-39	25-40		1.00-3.50	0.11-0.21	3.0-7.5	0.1-0.5	
	39-49	25-35		1.40-5.00	0.12-0.21	3.0-6.0	0.1-0.3	
	49-56	12-22		3.80-26.00	0.11-0.18	0.0-1.0	0.1-0.2	
	56-70	12-22		3.80-26.00	0.11-0.18	0.0-1.0	0.1-0.2	
365:								
Palexerults gravelly loam----	0-2	16-24		5.00-9.00	0.11-0.19	0.0-2.0	0.8-6.0	
	2-12	20-35		2.00-8.00	0.11-0.21	1.0-6.0	0.5-1.0	
	12-20	20-35		2.00-8.00	0.11-0.21	1.0-6.0	0.5-1.0	
	20-29	35-60		0.42-2.00	0.10-0.19	6.0-9.0	0.1-0.5	
	29-46	30-60		0.42-3.00	0.10-0.19	4.5-9.0	0.1-0.3	
	46-65	40-60		0.42-1.40	0.13-0.17	4.5-9.0	0.1-0.3	
	65	---		0.01-0.42	---	---	---	
366:								
Palexerults gravelly loam----	0-2	16-24		5.00-9.00	0.11-0.19	0.0-2.0	0.8-6.0	
	2-12	20-35		2.00-8.00	0.11-0.21	1.0-6.0	0.5-1.0	
	12-20	20-35		2.00-8.00	0.11-0.21	1.0-6.0	0.5-1.0	
	20-29	35-60		0.42-2.00	0.10-0.19	6.0-9.0	0.1-0.5	
	29-46	30-60		0.42-3.00	0.10-0.19	4.5-9.0	0.1-0.3	
	46-65	40-60		0.42-1.40	0.13-0.17	4.5-9.0	0.1-0.3	
	65	---		0.01-0.42	---	---	---	

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
370:						
Palexerults gravelly loam----	0-2	16-24	5.00-9.00	0.11-0.19	0.0-2.0	0.8-6.0
	2-12	20-35	2.00-8.00	0.11-0.21	1.0-6.0	0.5-1.0
	12-20	20-35	2.00-8.00	0.11-0.21	1.0-6.0	0.5-1.0
	20-29	35-60	0.42-2.00	0.10-0.19	6.0-9.0	0.1-0.5
	29-46	30-60	0.42-3.00	0.10-0.19	4.5-9.0	0.1-0.3
	46-65	40-60	0.42-1.40	0.13-0.17	4.5-9.0	0.1-0.3
	65	---	0.01-0.42	---	---	---
375:						
Wickscorner loam-----	0-2	15-20	8.00-16.00	0.14-0.17	0.7-1.0	2.0-6.0
	2-8	20-33	2.00-8.00	0.10-0.19	1.0-5.0	0.5-2.0
	8-22	20-33	2.00-8.00	0.10-0.19	1.0-5.0	0.5-2.0
	22-38	28-45	1.00-4.00	0.06-0.17	3.5-8.9	0.5-1.0
	38-59	28-45	1.00-4.00	0.06-0.17	3.5-8.9	0.5-1.0
	59-72	35-55	0.45-2.00	0.03-0.12	6.0-9.0	0.2-0.8
	72-84	35-55	0.45-2.00	0.03-0.12	6.0-9.0	0.2-0.8
376:						
Flagcanyon gravelly loam----	0-3	15-22	6.00-16.00	0.11-0.17	0.9-1.0	4.0-8.0
	3-9	22-30	3.00-6.00	0.07-0.14	1.0-4.5	1.0-4.0
	9-14	22-30	3.00-6.00	0.03-0.14	1.0-4.5	1.0-4.0
	14-30	30-50	0.50-3.00	0.03-0.13	4.0-9.0	1.0-2.0
	30-53	22-50	0.01-0.10	---	1.0-9.0	0.2-1.0
	53-65	22-50	0.01-0.10	---	1.0-9.0	0.2-1.0
Wickscorner loam-----	0-2	15-20	8.00-16.00	0.14-0.17	0.7-1.0	2.0-6.0
	2-8	20-33	2.00-8.00	0.10-0.19	1.0-5.0	0.5-2.0
	8-22	20-33	2.00-8.00	0.10-0.19	1.0-5.0	0.5-2.0
	22-38	28-45	1.00-4.00	0.06-0.17	3.5-8.9	0.5-1.0
	38-59	28-45	1.00-4.00	0.06-0.17	3.5-8.9	0.5-1.0
	59-72	35-55	0.45-2.00	0.03-0.12	6.0-9.0	0.2-0.8
	72-84	35-55	0.45-2.00	0.03-0.12	6.0-9.0	0.2-0.8
377:						
Flagcanyon taxadjunct fine sandy loam-----	0-3	15-18	14.00-17.00	0.12-0.15	0.7-1.0	0.5-1.5
	3-7	24-32	2.50-10.00	0.12-0.20	2.0-5.0	0.5-1.0
	7-16	24-32	2.50-10.00	0.12-0.20	2.0-5.0	0.1-0.8
	16-23	35-50	0.90-2.00	0.06-0.12	6.0-9.0	0.1-0.5
	23-31	35-50	0.90-2.00	0.06-0.12	6.0-9.0	0.1-0.5
	31-63	2-5	0.42-1.40	0.01-0.02	0.0-0.2	0.0-0.2
Durixeralfs, clayey-skeletal, loam-----	0-1	18-25	8.00-14.00	0.10-0.18	0.9-3.0	0.0-1.0
	1-4	24-30	2.50-10.00	0.11-0.21	2.0-4.5	0.0-0.8
	4-9	40-50	0.90-1.40	0.03-0.10	7.0-9.0	0.0-0.6
	9-15	40-50	0.90-1.40	0.03-0.10	7.0-9.0	0.0-0.5
	15-60	5-50	0.42-1.40	0.02-0.14	0.0-9.0	0.0-0.2
Duraquerts gravelly clay----	0-3	40-50	0.90-1.40	0.12-0.16	7.3-10.5	1.0-2.0
	3-6	40-50	0.90-1.40	0.12-0.16	7.3-10.5	0.2-0.8
	6-15	45-55	0.70-1.20	0.13-0.16	9.0-12.0	0.2-0.5
	15-21	45-55	0.70-1.20	0.13-0.16	9.0-12.0	0.2-0.3
	21-23	50-55	0.70-0.90	0.06-0.12	10.0-12.0	0.1-0.2
	23-60	5-10	0.42-1.40	---	0.0-0.5	0.1-0.2

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility		Organic matter
	In	Pct				um/sec	In/in	
400:								
Subaco taxadjunct clay-----	0-8	45-55		0.42-1.40	0.15-0.16	10.0-13.0	1.0-3.0	
	8-16	50-60		0.42-1.40	0.14-0.16	10.5-13.5	1.0-3.0	
	16-29	50-60		0.42-1.40	0.14-0.16	10.5-15.0	1.0-3.0	
	29-35	35-60		0.42-2.00	0.14-0.19	12.0-15.0	0.0-1.0	
	35-42	---		0.00-0.01	---	6.0-9.0	0.0-1.0	
	40-60	---		0.02-0.42	---	0.0-3.0	0.0-1.0	
415:								
Ignord fine sandy loam-----	0-4	8-20		14.00-30.00	0.14-0.15	0.0-1.0	1.0-4.0	
	4-14	8-15		21.00-30.00	0.11-0.14	0.0-0.0	1.0-2.0	
	14-25	8-15		21.00-30.00	0.11-0.14	0.0-0.0	1.0-2.0	
	25-32	8-15		21.00-30.00	0.11-0.14	0.0-0.0	1.0-2.0	
	32-53	8-15		21.00-30.00	0.11-0.14	0.0-0.0	0.1-1.0	
	53-58	8-15		21.00-30.00	0.11-0.14	0.0-0.0	0.1-1.0	
	58-77	8-15		21.00-30.00	0.11-0.14	0.0-0.0	0.1-1.0	
416:								
Calcic Haploxerolls sandy loam-----	0-5	15-23		11.00-17.00	0.12-0.17	0.0-2.9	1.0-2.0	
	5-17	15-25		8.00-17.00	0.12-0.17	0.0-2.9	1.0-2.0	
	17-20	12-27		4.00-20.00	0.12-0.18	0.0-2.9	1.0-2.0	
	20-33	12-27		4.00-20.00	0.12-0.18	0.0-2.9	1.0-2.0	
	33-44	12-20		12.00-20.00	0.08-0.13	0.0-2.9	1.0-2.0	
	44-72	---		0.02-0.42	---	---	---	
418:								
Almendra loam-----	0-4	15-27		4.00-21.00	0.14-0.18	1.0-3.5	2.5-5.0	
	4-14	15-27		4.00-21.00	0.14-0.18	1.0-3.5	2.5-5.0	
	14-29	17-27		4.00-20.00	0.14-0.18	1.0-3.5	1.0-2.5	
	29-40	17-27		4.00-20.00	0.14-0.18	1.0-3.5	1.0-2.5	
	40-52	15-27		4.00-21.00	0.14-0.18	1.0-3.5	0.5-1.0	
	52-74	12-25		5.00-25.00	0.11-0.18	0.0-3.0	0.1-0.8	
	74-86	12-25		5.00-25.00	0.11-0.18	0.0-3.0	0.1-0.8	
419:								
Conejo fine sandy loam, overwash-----	0-17	10-20		8.00-28.00	0.13-0.16	0.0-1.0	1.0-2.0	
	17-35	18-35		2.00-8.00	0.15-0.21	1.0-6.0	2.5-5.0	
	35-45	18-35		2.00-8.00	0.15-0.21	1.0-6.0	1.0-2.5	
	45-56	18-35		2.00-8.00	0.15-0.21	1.0-6.0	0.5-1.5	
	56-62	15-35		2.00-21.00	0.12-0.21	1.0-6.0	0.1-0.8	
	62-70	15-35		2.00-21.00	0.12-0.21	1.0-6.0	0.1-0.8	
	70-72	15-35		2.00-21.00	0.12-0.21	1.0-6.0	0.1-0.8	
420:								
Conejo clay loam-----	0-5	27-35		2.00-4.00	0.19-0.21	3.0-6.0	3.0-6.0	
	5-19	27-35		2.00-4.00	0.19-0.21	3.0-6.0	1.0-4.0	
	19-30	27-35		2.00-4.00	0.19-0.21	3.0-6.0	1.0-4.0	
	30-48	27-35		2.00-4.00	0.19-0.21	3.0-6.0	0.5-1.5	
	48-70	15-35		2.00-21.00	0.13-0.21	1.0-6.0	0.1-0.8	
425:								
Vina fine sandy loam-----	0-3	12-20		8.00-26.00	0.13-0.16	0.0-1.0	2.5-5.0	
	3-11	12-20		8.00-26.00	0.13-0.16	0.0-1.0	2.5-5.0	
	11-23	10-18		9.00-28.00	0.11-0.16	0.0-1.0	1.0-2.5	
	23-37	10-18		9.00-28.00	0.11-0.16	0.0-1.0	1.0-2.5	
	37-50	1-15		10.00-150.00	0.03-0.15	0.0-0.0	0.1-1.0	
	50-54	1-15		10.00-150.00	0.03-0.15	0.0-0.0	0.1-1.0	
	54-80	1-15		10.00-150.00	0.03-0.15	0.0-0.0	0.1-1.0	

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility		Organic matter
	In	Pct				um/sec	In/in	
426:								
Vina loam-----	0-4	12-20		8.00-26.00	0.14-0.16	0.0-1.0	2.5-5.0	
	4-15	5-18		9.00-35.00	0.11-0.16	0.0-1.0	2.5-5.0	
	15-28	5-18		9.00-35.00	0.11-0.16	0.0-1.0	1.0-2.5	
	28-44	5-18		9.00-35.00	0.11-0.16	0.0-1.0	1.0-2.5	
	44-63	5-18		9.00-35.00	0.11-0.16	0.0-1.0	0.5-2.5	
	63-72	5-18		9.00-35.00	0.11-0.16	0.0-1.0	0.1-1.0	
439:								
Oxyaquic Xerofluents clay---	0-10	40-60		0.42-1.40	0.14-0.16	7.0-13.7	0.5-2.0	
	10-13	40-60		0.42-1.40	0.14-0.16	7.0-13.7	1.0-2.0	
	13-21	40-60		0.42-1.40	0.14-0.16	7.0-13.7	1.0-2.0	
	21-27	5-15		17.00-80.00	0.15-0.17	0.0-1.0	0.0-0.5	
	27-32	40-60		0.42-1.40	0.14-0.16	7.0-13.7	0.0-0.5	
	32-37	35-40		1.40-2.00	0.17-0.19	6.0-7.3	0.0-0.5	
	37-55	60-80		0.20-0.42	0.13-0.15	13.0-20.0	0.0-1.0	
	55-63	60-80		0.20-0.42	0.14-0.15	13.0-20.0	0.0-0.5	
	63-65	---		0.00-0.01	---	---	---	
	65-80	40-60		0.42-1.40	0.14-0.16	7.0-13.7	0.0-0.5	
440:								
Oxyaquic Xerofluents silt loam, frequently flooded----	0-9	5-27		4.00-80.00	0.14-0.20	0.0-3.0	0.5-2.0	
	9-18	5-10		30.00-80.00	0.07-0.08	0.0-1.0	1.0-2.0	
	18-25	10-27		4.00-30.00	0.14-0.20	0.5-3.0	1.0-2.0	
	25-33	5-27		4.00-80.00	0.07-0.20	0.0-3.0	0.0-0.5	
	33-44	15-30		2.00-17.00	0.15-0.21	0.5-4.0	0.0-0.5	
	44-51	15-30		2.00-17.00	0.17-0.21	0.5-4.0	0.0-0.5	
	51-60	40-70		0.30-1.40	0.13-0.16	7.0-16.5	0.0-1.0	
441:								
Oxyaquic Xerofluents very fine sandy loam-----	0-6	15-20		12.00-17.00	0.16-0.17	0.7-1.0	0.5-2.0	
	6-20	18-27		4.00-14.00	0.17-0.20	0.9-3.0	1.0-2.0	
	20-30	18-27		4.00-14.00	0.17-0.20	0.9-3.0	1.0-2.0	
	30-43	5-15		17.00-80.00	0.15-0.17	0.0-1.0	0.0-0.5	
	43-55	18-27		4.00-14.00	0.15-0.20	0.9-3.0	0.0-0.5	
	55-72	5-20		12.00-80.00	0.10-0.18	0.0-1.0	0.0-0.5	
	72-75	40-60		0.42-1.40	0.14-0.16	7.0-13.7	0.0-1.0	
442:								
Durixerolls clay loam-----	0-6	27-40		0.42-3.50	0.15-0.21	3.0-7.3	1.0-4.0	
	6-12	27-40		0.42-3.50	0.15-0.21	3.0-7.3	1.0-2.0	
	12-24	25-35		2.00-8.00	0.15-0.21	3.0-6.0	0.5-1.0	
	24-33	17-35		2.00-15.00	0.12-0.21	0.8-6.0	0.1-0.8	
	33	---		0.00-0.01	---	---	---	
Haploxerolls clay loam-----	0-5	27-35		2.00-4.00	0.19-0.21	3.0-6.0	2.5-5.0	
	5-18	27-35		2.00-4.00	0.19-0.21	3.0-6.0	2.5-5.0	
	18-29	25-35		2.00-8.00	0.18-0.21	3.0-6.0	1.0-2.5	
	29-44	20-35		2.00-12.00	0.17-0.21	2.5-6.0	1.0-2.5	
	44-57	10-35		2.00-30.00	0.12-0.21	1.0-6.0	0.1-0.8	
	57	---		0.00-0.01	---	---	---	
443:								
Durixerolls loam-----	0-4	18-25		8.00-14.00	0.16-0.18	0.9-3.0	1.0-4.0	
	4-10	17-25		8.00-15.00	0.16-0.18	0.8-3.0	1.0-2.0	
	10-17	18-25		8.00-14.00	0.15-0.18	0.9-3.0	0.5-1.0	
	17-23	18-30		2.50-14.00	0.15-0.18	0.9-4.2	0.5-1.0	
	23-26	18-30		2.50-14.00	0.15-0.18	0.9-4.2	0.1-0.8	
	26	---		0.00-0.01	---	---	---	

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct		um/sec	In/in	Pct	Pct
443:							
Haploxerolls loam-----	0-5	20-27		4.00-12.00	0.17-0.18	1.0-3.0	2.5-5.0
	5-16	20-27		4.00-12.00	0.17-0.18	1.0-3.0	2.5-5.0
	16-27	18-27		4.00-14.00	0.16-0.18	0.9-3.0	1.0-2.5
	27-40	18-27		4.00-14.00	0.13-0.18	0.9-3.0	1.0-2.5
	40-48	9-27		4.00-34.00	0.11-0.18	0.4-3.0	1.0-2.5
	48-52	9-27		4.00-34.00	0.11-0.18	0.4-3.0	0.1-0.8
	52	---		0.00-0.01	---	---	---
445:							
Chico loam-----	0-5	20-27		4.00-8.00	0.16-0.18	2.0-3.5	1.0-5.0
	5-10	25-35		2.00-5.00	0.18-0.21	3.0-6.0	1.0-3.0
	10-21	25-35		2.00-5.00	0.18-0.21	3.0-6.0	1.0-3.0
	21-32	25-35		2.00-5.00	0.18-0.21	3.0-6.0	0.5-2.0
	32-50	18-35		2.00-9.00	0.16-0.21	1.5-6.0	0.1-1.0
	50-70	18-35		2.00-9.00	0.16-0.21	1.5-6.0	0.1-1.0
	70-80	18-35		2.00-9.00	0.16-0.21	1.5-6.0	0.1-1.0
447:							
Charger fine sandy loam-----	0-3	8-17		16.00-30.00	0.11-0.15	0.0-1.0	2.0-6.0
	3-7	8-17		16.00-30.00	0.09-0.15	0.0-1.0	1.0-5.0
	7-15	8-17		16.00-30.00	0.09-0.15	0.0-1.0	1.0-5.0
	15-32	8-17		16.00-32.00	0.07-0.15	0.0-1.0	0.1-2.0
	32-42	8-17		16.00-32.00	0.07-0.15	0.0-1.0	0.1-2.0
	42-53	8-17		16.00-32.00	0.07-0.15	0.0-1.0	0.1-2.0
	53-63	8-17		16.00-32.00	0.07-0.15	0.0-1.0	0.1-2.0
	63-80	1-10		28.00-705.00	0.01-0.09	0.0-0.0	0.0-0.3
448:							
Haploxerolls clay loam-----	0-5	27-35		2.00-4.00	0.19-0.21	3.0-6.0	2.5-5.0
	5-10	27-35		2.00-4.00	0.19-0.21	3.0-6.0	2.5-5.0
	10-24	27-35		2.00-4.00	0.19-0.21	3.0-6.0	1.0-2.5
	24-39	27-35		2.00-4.00	0.19-0.21	3.0-6.0	1.0-2.5
	39-66	18-35		4.00-14.00	0.13-0.21	0.9-6.0	0.1-0.8
449:							
Haploxerolls loam-----	0-4	18-27		4.00-14.00	0.16-0.18	0.9-3.0	2.5-5.0
	4-10	18-27		4.00-14.00	0.16-0.20	0.9-3.0	2.5-5.0
	10-24	18-27		4.00-14.00	0.16-0.20	0.9-3.0	1.0-2.5
	24-36	18-27		4.00-14.00	0.16-0.20	0.9-3.0	1.0-2.5
	36-52	18-27		4.00-14.00	0.16-0.20	0.9-3.0	0.5-1.0
	52-60	10-27		4.00-30.00	0.11-0.21	0.5-3.0	0.1-0.8
500:							
Lofgren clay-----	0-5	60-70		0.30-0.42	0.12-0.15	13.5-16.5	1.0-3.0
	5-12	60-70		0.30-0.42	0.12-0.15	13.5-16.5	1.0-2.0
	12-29	60-70		0.30-0.42	0.12-0.15	13.5-16.5	0.5-1.0
	29-38	60-70		0.30-0.42	0.12-0.15	13.5-16.5	0.5-1.0
	38-44	60-70		0.42-0.90	0.12-0.15	13.5-16.5	0.5-1.0
	44-47	27-40		1.40-4.00	0.17-0.19	3.0-9.0	0.1-0.5
	47-62	---		0.00-0.01	---	1.0-3.0	---
	62-82	---		0.00-0.01	---	3.0-6.0	---
Blavo clay-----	0-5	60-70		0.30-0.42	0.13-0.15	13.5-16.5	1.0-3.0
	5-16	60-70		0.30-0.42	0.13-0.15	13.5-16.5	1.0-2.0
	16-24	60-70		0.30-0.42	0.13-0.15	13.5-16.5	0.5-1.0
	24-30	60-70		0.30-0.42	0.13-0.15	13.5-16.5	0.5-1.0
	30-36	35-60		0.42-2.00	0.14-0.19	3.0-13.5	0.1-0.5
	36-60	---		0.00-0.01	---	1.0-3.0	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
501: Lofgren clay, occasionally flooded-----	0-5	60-70	0.30-0.42	0.12-0.15	13.5-16.5	1.0-3.0
	5-12	60-70	0.30-0.42	0.12-0.15	13.5-16.5	1.0-2.0
	12-22	60-70	0.30-0.42	0.12-0.15	13.5-16.5	0.5-1.0
	22-30	60-70	0.30-0.42	0.12-0.15	13.5-16.5	0.5-1.0
	30-41	60-70	0.30-0.42	0.12-0.15	13.5-16.5	0.5-1.0
	41-45	27-40	1.40-4.00	0.17-0.19	3.0-9.0	0.1-0.5
	45-60	---	0.00-0.01	---	1.0-3.0	---
Blavo clay, occasionally flooded-----	0-6	60-70	0.30-0.42	0.13-0.15	13.0-16.5	1.0-3.0
	6-10	60-70	0.30-0.42	0.13-0.15	13.5-16.5	1.0-2.0
	10-22	60-70	0.30-0.42	0.13-0.15	13.5-16.5	0.5-1.0
	22-29	60-70	0.30-0.42	0.13-0.15	13.5-16.5	0.5-1.0
	29-36	35-60	0.42-2.00	0.15-0.19	3.0-13.5	0.1-0.5
	36-42	---	0.00-0.01	---	1.0-3.0	---
502: Blavo silt loam, overwash, occasionally flooded-----	0-7	18-27	4.00-14.00	0.17-0.20	3.0-6.0	1.0-2.0
	7-14	60-70	0.30-0.42	0.13-0.15	13.0-16.5	1.0-2.0
	14-22	60-70	0.30-0.42	0.13-0.15	13.5-16.5	0.5-1.0
	22-29	60-70	0.30-0.42	0.13-0.15	13.5-16.5	0.5-1.0
	29-36	60-70	0.30-0.42	0.13-0.15	13.5-16.5	0.1-0.5
	36-50	---	0.00-0.01	---	1.0-3.0	---
519: Edjobe silty clay-----	0-8	40-55	0.45-1.40	0.15-0.17	9.0-12.0	1.0-3.0
	8-25	40-55	0.45-1.40	0.15-0.17	9.0-12.0	0.5-1.5
	25-32	40-50	0.50-1.40	0.15-0.17	9.0-10.0	0.2-1.0
	32-48	27-40	1.40-4.00	0.17-0.21	3.0-9.0	0.1-0.6
	48-60	25-40	1.40-5.00	0.17-0.21	3.0-9.0	0.1-0.5
	60-69	25-35	2.00-5.00	0.18-0.21	3.0-6.0	0.1-0.3
	69-75	---	0.00-0.06	---	---	---
520: Esquon clay-----	0-5	40-60	0.42-1.40	0.14-0.17	9.0-13.5	1.0-2.5
	5-11	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.5-1.0
	11-22	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.4-1.0
	22-35	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.4-1.0
	35-46	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.1-0.5
	46-50	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.1-0.5
	50-56	25-60	0.42-8.00	0.14-0.21	3.0-16.0	0.1-0.5
	56-67	---	0.00-0.01	---	3.0-6.0	0.0-0.1
Neerdobe clay-----	0-5	40-60	0.42-1.40	0.14-0.16	9.0-13.5	1.0-2.5
	5-15	40-60	0.42-1.40	0.14-0.16	9.0-13.5	0.5-1.0
	15-23	40-60	0.42-1.40	0.14-0.16	9.0-13.5	0.5-1.0
	23-28	40-60	0.42-1.40	0.14-0.16	9.0-13.5	0.5-1.0
	28-33	35-60	0.42-2.00	0.15-0.19	6.0-13.5	0.1-0.5
	33-38	18-27	4.00-14.00	0.16-0.18	0.0-3.0	0.1-0.5
	38-56	18-27	0.00-0.01	---	0.0-3.0	0.0-0.1
521: Neerdobe silt loam, overwash	0-7	2-25	8.00-42.00	0.15-0.20	0.0-1.0	1.0-2.0
	7-16	2-25	8.00-42.00	0.15-0.20	0.0-1.0	0.5-1.0
	16-20	2-10	30.00-42.00	0.09-0.11	0.0-1.0	0.1-0.5
	20-33	40-60	0.42-1.40	0.14-0.16	9.0-13.5	1.0-2.5
	33-47	40-60	0.42-1.40	0.14-0.16	9.0-13.5	0.5-1.0
	47-52	---	0.00-0.01	---	0.0-3.0	---
	52-60	---	0.00-0.01	---	0.0-3.0	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct		um/sec	In/in	Pct	Pct
522: Clear Lake silty clay loam, overwash-----	0-6	35-40		1.40-2.00	0.17-0.19	8.0-9.0	1.0-2.0
	6-12	40-60		0.42-1.40	0.14-0.17	9.0-13.5	1.0-2.5
	12-35	40-60		0.42-1.40	0.14-0.17	9.0-13.5	0.5-1.0
	35-50	40-60		0.42-1.40	0.14-0.17	9.0-13.5	0.4-1.0
	50-60	35-60		0.42-2.00	0.14-0.19	8.0-13.5	0.1-0.5
	60-70	35-60		0.42-2.00	0.14-0.19	8.0-13.5	0.1-0.5
	70-72	35-60		0.42-2.00	0.14-0.19	8.0-13.5	0.1-0.5
523: Esquon silty clay loam, overwash-----	0-10	35-40		1.40-2.00	0.17-0.19	6.0-9.0	1.0-2.0
	10-18	40-60		0.42-1.40	0.14-0.17	9.0-13.5	1.0-2.5
	18-46	40-60		0.42-1.40	0.14-0.17	9.0-13.5	0.1-0.5
	46-60	---		0.00-0.01	---	---	---
525: Govstanford loam-----	0-3	15-27		4.00-21.00	0.13-0.18	1.0-3.0	1.0-2.0
	3-11	15-27		4.00-21.00	0.13-0.18	1.0-3.0	1.0-2.0
	11-18	3-18		9.00-130.00	0.06-0.17	0.0-1.0	0.1-0.8
	18-25	3-18		9.00-130.00	0.06-0.17	0.0-1.0	0.1-0.8
	25-34	5-18		9.00-125.00	0.06-0.17	0.0-1.0	0.1-0.5
	34-42	40-60		0.42-1.40	0.13-0.16	7.5-14.0	1.0-3.0
	42-61	40-60		0.42-1.40	0.13-0.16	7.5-14.0	0.5-1.5
	61-72	35-55		0.60-2.00	0.15-0.19	6.0-12.0	0.2-1.0
526: Govstanford loam, occasionally flooded-----	0-3	15-27		4.00-21.00	0.13-0.18	1.0-3.0	1.0-2.0
	3-11	15-27		4.00-21.00	0.13-0.18	1.0-3.0	1.0-2.0
	11-18	3-18		9.00-130.00	0.06-0.17	0.0-1.0	0.1-0.8
	18-25	3-18		9.00-130.00	0.06-0.17	0.0-1.0	0.1-0.8
	25-34	5-18		9.00-125.00	0.06-0.17	0.0-1.0	0.1-0.5
	34-42	40-60		0.42-1.40	0.13-0.16	7.5-14.0	1.0-3.0
	42-61	40-60		0.42-1.40	0.13-0.16	7.5-14.0	0.5-1.5
	61-72	35-55		0.60-2.00	0.15-0.19	6.0-12.0	0.2-1.0
528: Neerdobe clay loam-----	0-10	35-40		1.40-2.00	0.17-0.19	9.0-9.1	1.0-2.5
	10-18	40-60		0.42-1.40	0.14-0.17	9.0-13.5	0.5-1.0
	18-25	40-60		0.42-1.40	0.14-0.17	9.0-13.5	0.1-0.5
	25	---		0.00-0.01	---	---	---
550: Dunstone loam, dry-----	0-2	12-20		12.00-20.00	0.11-0.16	0.6-1.0	5.0-8.0
	2-7	16-22		11.00-16.00	0.11-0.16	0.8-2.0	1.0-2.0
	7-10	16-24		10.00-17.00	0.11-0.18	0.6-3.0	0.5-2.0
	10-16	23-32		3.00-11.00	0.09-0.18	2.0-5.0	0.5-2.0
	16	---		---	---	---	0.0-0.0
Loafercreek silt loam, dry---	0-2	14-22		11.00-15.00	0.15-0.19	0.7-2.0	5.0-10
	2-4	15-24		13.00-15.00	0.16-0.19	0.7-2.3	1.0-4.0
	4-11	15-24		13.00-15.00	0.15-0.17	0.7-2.3	1.0-4.0
	11-20	18-30		3.00-14.00	0.15-0.20	0.9-4.2	0.5-1.5
	20-29	18-30		3.00-15.00	0.17-0.21	1.0-4.2	0.5-1.5
	29	---		---	0.00-0.00	---	0.0-0.0

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility		Organic matter
	In	Pct				um/sec	In/in	
551:								
Dunstone loam, dry-----	0-2	12-20	12.00-20.00	0.11-0.16	0.6-1.0	5.0-8.0		
	2-7	16-22	11.00-16.00	0.11-0.16	0.8-2.0	1.0-2.0		
	7-10	16-24	10.00-17.00	0.11-0.18	0.6-3.0	0.5-2.0		
	10-16	23-32	3.00-11.00	0.09-0.18	2.0-5.0	0.5-2.0		
	16	---	---	---	---	0.0-0.0		
Lomarica loam-----	0-1	15-20	13.00-17.00	0.14-0.17	0.7-1.0	5.0-10		
	1-5	18-23	11.00-14.00	0.13-0.17	0.9-2.0	1.0-4.0		
	5-9	29-38	1.20-3.00	0.07-0.20	3.0-7.0	0.5-2.0		
	9-12	32-44	0.85-2.50	0.06-0.17	3.0-7.0	0.5-2.0		
	12-25	35-45	0.85-2.00	0.05-0.08	6.0-8.0	0.5-2.0		
	25-32	45-55	0.60-0.85	0.03-0.14	6.0-9.0	0.5-1.0		
	32	---	---	---	---	---		
Argonaut taxadjunct loam----	0-2	18-30	3.00-14.00	0.14-0.19	0.9-4.0	2.0-6.0		
	2-8	28-40	1.40-4.00	0.15-0.20	3.5-7.3	1.0-3.0		
	8-14	40-50	0.80-1.40	0.12-0.16	7.0-9.0	1.0-2.0		
	14-20	40-50	0.80-1.40	0.12-0.16	7.0-9.0	1.0-2.0		
	20-26	36-45	1.20-2.00	0.14-0.18	6.0-9.0	0.0-1.0		
	26-30	36-45	1.20-2.00	0.14-0.18	6.0-9.0	0.0-1.0		
	30	---	---	---	---	---		
552:								
Dunstone gravelly loam-----	0-4	12-20	12.00-20.00	0.12-0.17	0.6-1.0	5.0-8.0		
	4-6	14-22	12.00-18.00	0.11-0.17	0.7-2.0	1.0-2.0		
	6-10	15-27	4.00-13.00	0.10-0.20	0.7-3.0	1.0-2.0		
	10-15	18-35	2.00-14.00	0.10-0.20	0.9-6.0	0.5-1.5		
	15-37	---	---	---	---	---		
	37	---	---	---	---	---		
Loafercreek gravelly loam----	0-0.5	---	---	---	---	---		
	0.5-2	14-22	11.00-15.00	0.12-0.16	0.7-2.0	5.0-10		
	2-6	15-24	13.00-15.00	0.11-0.16	0.7-2.5	1.0-4.0		
	6-12	18-30	3.00-14.00	0.11-0.19	0.9-4.2	0.5-2.0		
	12-23	20-30	3.00-15.00	0.12-0.19	1.0-4.2	0.5-1.5		
	23-31	20-30	3.00-15.00	0.11-0.19	1.0-4.2	0.5-1.5		
	31-42	---	---	---	---	0.0-0.0		
	42	---	---	---	---	0.0-0.0		
553:								
Dunstone gravelly loam-----	0-4	12-20	12.00-20.00	0.12-0.17	0.6-1.0	5.0-8.0		
	4-6	14-22	12.00-18.00	0.11-0.17	0.7-2.0	1.0-2.0		
	6-10	15-27	4.00-13.00	0.10-0.20	0.7-3.0	1.0-2.0		
	10-15	18-35	2.00-14.00	0.10-0.20	0.9-6.0	0.5-1.5		
	15-37	---	---	---	---	---		
	37	---	---	---	---	---		
Loafercreek gravelly loam----	0-0.5	---	---	---	---	---		
	0.5-2	14-22	11.00-15.00	0.12-0.16	0.7-2.0	5.0-10		
	2-6	15-24	13.00-15.00	0.11-0.16	0.7-2.5	1.0-4.0		
	6-12	18-30	3.00-14.00	0.11-0.19	0.9-4.2	0.5-2.0		
	12-23	20-30	3.00-15.00	0.12-0.19	1.0-4.2	0.5-1.5		
	23-31	20-30	3.00-15.00	0.11-0.19	1.0-4.2	0.5-1.5		
	31-42	---	---	---	---	0.0-0.0		
	42	---	---	---	---	0.0-0.0		

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
563:						
Bigridge loam-----	0-1	---	---	---	---	---
	1-5	15-25	4.00-20.00	0.11-0.17	1.0-3.0	1.0-4.0
	5-9	19-30	3.00-14.00	0.11-0.16	1.0-4.5	1.0-4.0
	9-15	18-35	2.00-14.00	0.10-0.20	1.0-6.0	1.0-4.0
	15-20	18-35	2.00-14.00	0.10-0.20	1.0-6.0	0.5-1.0
	20-27	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.3-1.0
	27-36	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.1-1.0
	36-51	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.1-1.0
	51-62	---	---	---	---	---
Minniecreek loam-----	0-2	15-20	13.00-16.00	0.10-0.17	1.0-2.0	1.0-4.0
	2-8	18-22	12.00-14.00	0.06-0.17	1.0-2.0	1.0-4.0
	8-15	24-30	4.00-10.00	0.12-0.18	3.0-4.5	1.0-4.0
	15-24	24-30	3.00-4.00	0.18-0.21	3.0-4.5	0.5-1.0
	24-32	29-37	1.90-3.50	0.13-0.20	4.0-7.0	0.3-1.0
	32-47	---	---	---	---	---
	47-58	---	---	---	---	---
	58-75	---	---	---	---	---
564:						
Bigridge loam-----	0-1	---	---	---	---	---
	1-5	15-25	4.00-20.00	0.11-0.17	1.0-3.0	1.0-4.0
	5-9	19-30	3.00-14.00	0.11-0.16	1.0-4.5	1.0-4.0
	9-15	18-35	2.00-14.00	0.10-0.20	1.0-6.0	1.0-4.0
	15-20	18-35	2.00-14.00	0.10-0.20	1.0-6.0	0.5-1.0
	20-27	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.3-1.0
	27-36	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.1-1.0
	36-51	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.1-1.0
	51-62	---	---	---	---	---
Minniecreek loam-----	0-2	15-20	13.00-16.00	0.10-0.17	1.0-2.0	1.0-4.0
	2-8	18-22	12.00-14.00	0.06-0.17	1.0-2.0	1.0-4.0
	8-15	24-30	4.00-10.00	0.12-0.18	3.0-4.5	1.0-4.0
	15-24	24-30	3.00-4.00	0.18-0.21	3.0-4.5	0.5-1.0
	24-32	29-37	1.90-3.50	0.13-0.20	4.0-7.0	0.3-1.0
	32-47	---	---	---	---	---
	47-58	---	---	---	---	---
	58-75	---	---	---	---	---
565:						
Dunstone loam, dry-----	0-2	12-20	12.00-20.00	0.11-0.16	0.6-1.0	5.0-8.0
	2-7	16-22	11.00-16.00	0.11-0.16	0.8-2.0	1.0-2.0
	7-10	16-24	10.00-17.00	0.11-0.18	0.6-3.0	0.5-2.0
	10-16	23-32	3.00-11.00	0.09-0.18	2.0-5.0	0.5-2.0
	16	---	---	---	---	0.0-0.0
Argonaut taxadjunct loam----	0-2	18-30	3.00-14.00	0.14-0.19	0.9-4.0	2.0-6.0
	2-8	28-40	1.40-4.00	0.15-0.20	3.5-7.3	1.0-3.0
	8-14	40-50	0.80-1.40	0.12-0.16	7.0-9.0	1.0-2.0
	14-20	40-50	0.80-1.40	0.12-0.16	7.0-9.0	1.0-2.0
	20-26	36-45	1.20-2.00	0.14-0.18	6.0-9.0	0.0-1.0
	26-30	36-45	1.20-2.00	0.14-0.18	6.0-9.0	0.0-1.0
	30	---	---	---	---	---
Sunnyslope loam-----	0-2	10-18	14.00-30.00	0.13-0.16	0.0-3.0	3.0-7.0
	2-6	15-20	12.00-17.00	0.10-0.15	0.0-3.0	1.0-4.0
	6-10	15-30	3.00-17.00	0.05-0.13	0.0-3.0	0.5-2.0
	10-14	15-30	3.00-17.00	0.05-0.13	0.0-3.0	0.5-2.0
	14	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility		Organic matter
	In	Pct				um/sec	In/in	
566:								
Dunstone loam, dry-----	0-2	12-20	12.00-20.00	0.11-0.16	0.6-1.0	5.0-8.0		
	2-7	16-22	11.00-16.00	0.11-0.16	0.8-2.0	1.0-2.0		
	7-10	16-24	10.00-17.00	0.11-0.18	0.6-3.0	0.5-2.0		
	10-16	23-32	3.00-11.00	0.09-0.18	2.0-5.0	0.5-2.0		
	16	---	---	---	---	0.0-0.0		
Loafercreek silt loam, dry---	0-2	14-22	11.00-15.00	0.15-0.19	0.7-2.0	5.0-10		
	2-4	15-24	13.00-15.00	0.16-0.19	0.7-2.3	1.0-4.0		
	4-11	15-24	13.00-15.00	0.15-0.17	0.7-2.3	1.0-4.0		
	11-20	18-30	3.00-14.00	0.15-0.20	0.9-4.2	0.5-1.5		
	20-29	18-30	3.00-15.00	0.17-0.21	1.0-4.2	0.5-1.5		
	29	---	---	0.00-0.00	---	0.0-0.0		
Katskillhill loam-----	0-2	12-18	14.00-20.00	0.14-0.16	0.6-3.0	3.0-9.0		
	2-8	15-20	13.00-17.00	0.13-0.16	0.7-3.0	1.0-4.0		
	8-12	21-25	8.00-12.00	0.07-0.17	1.0-3.0	1.0-1.5		
	12-19	35-50	0.90-2.00	0.12-0.19	6.0-9.0	0.5-1.0		
	19-29	45-55	0.80-0.90	0.14-0.17	8.0-9.0	0.0-0.5		
	29-42	45-55	0.80-0.90	0.14-0.17	8.0-9.0	0.0-0.5		
	42	---	---	---	---	---		
567:								
Dunstone loam, dry-----	0-2	12-20	12.00-20.00	0.11-0.16	0.6-1.0	5.0-8.0		
	2-7	16-22	11.00-16.00	0.11-0.16	0.8-2.0	1.0-2.0		
	7-10	16-24	10.00-17.00	0.11-0.18	0.6-3.0	0.5-2.0		
	10-16	23-32	3.00-11.00	0.09-0.18	2.0-5.0	0.5-2.0		
	16	---	---	---	---	0.0-0.0		
Loafercreek silt loam, dry---	0-2	14-22	11.00-15.00	0.15-0.19	0.7-2.0	5.0-10		
	2-4	15-24	13.00-15.00	0.16-0.19	0.7-2.3	1.0-4.0		
	4-11	15-24	13.00-15.00	0.15-0.17	0.7-2.3	1.0-4.0		
	11-20	18-30	3.00-14.00	0.15-0.20	0.9-4.2	0.5-1.5		
	20-29	18-30	3.00-15.00	0.17-0.21	1.0-4.2	0.5-1.5		
	29	---	---	0.00-0.00	---	0.0-0.0		
Argonaut taxadjunct loam----	0-2	18-30	3.00-14.00	0.14-0.19	0.9-4.0	2.0-6.0		
	2-8	28-40	1.40-4.00	0.15-0.20	3.5-7.3	1.0-3.0		
	8-14	40-50	0.80-1.40	0.12-0.16	7.0-9.0	1.0-2.0		
	14-20	40-50	0.80-1.40	0.12-0.16	7.0-9.0	1.0-2.0		
	20-26	36-45	1.20-2.00	0.14-0.18	6.0-9.0	0.0-1.0		
	26-30	36-45	1.20-2.00	0.14-0.18	6.0-9.0	0.0-1.0		
	30	---	---	---	---	---		
577:								
Parkshill coarse sandy loam--	0-2	12-17	14.00-20.00	0.11-0.16	0.7-1.0	2.0-8.0		
	2-8	14-17	14.00-20.00	0.11-0.13	0.7-1.0	1.0-3.0		
	8-18	16-19	14.00-16.00	0.12-0.13	0.8-1.0	0.2-1.0		
	18-26	16-19	14.00-16.00	0.12-0.13	0.9-1.0	0.2-1.0		
	26-35	18-23	4.00-14.00	0.10-0.18	1.0-2.0	0.0-0.2		
	35-53	18-33	4.00-14.00	0.10-0.18	1.0-6.0	0.0-0.2		
	53-61	16-26	4.00-16.00	0.10-0.18	1.0-3.0	0.0-0.2		
Flanly loam-----	0-2	12-18	12.00-18.00	0.10-0.15	0.7-1.0	3.0-5.0		
	2-5	15-20	12.00-17.00	0.10-0.16	0.7-1.0	1.0-3.0		
	5-10	18-28	3.00-14.00	0.11-0.21	0.9-3.5	1.0-3.0		
	10-23	22-35	2.00-12.00	0.14-0.17	1.5-6.0	0.5-2.0		
	23-26	---	---	---	---	0.0-0.0		

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
577:						
Hurleton gravelly sandy loam	0-3	10-17	14.00-30.00	0.07-0.14	0.5-1.0	3.0-8.0
	3-7	10-17	14.00-30.00	0.07-0.14	0.5-1.0	3.0-8.0
	7-12	14-20	14.00-18.00	0.07-0.10	0.7-1.0	1.2-3.0
	12-16	16-24	4.00-16.00	0.05-0.11	0.8-2.5	0.4-1.3
	16-19	19-32	3.00-14.00	0.05-0.14	0.9-5.0	0.2-0.6
	19-25	20-35	2.00-11.00	0.04-0.12	1.0-6.0	0.0-0.4
	25	---	---	---	---	---
578:						
Flanly loam-----	0-2	12-18	12.00-18.00	0.10-0.15	0.7-1.0	3.0-5.0
	2-5	15-20	12.00-17.00	0.10-0.16	0.7-1.0	1.0-3.0
	5-10	18-28	3.00-14.00	0.11-0.21	0.9-3.5	1.0-3.0
	10-23	22-35	2.00-12.00	0.14-0.17	1.5-6.0	0.5-2.0
	23-26	---	---	---	---	0.0-0.0
Swedesflat cobbly fine sandy loam-----	0-2	12-20	12.00-20.00	0.08-0.17	0.6-1.0	2.0-8.0
	2-8	13-20	12.00-19.00	0.07-0.16	0.6-1.0	1.5-3.0
	8-12	18-25	4.00-14.00	0.09-0.18	0.9-2.6	0.2-1.5
	12-18	---	---	---	---	---
	18	---	---	---	---	---
580:						
Surnuf taxadjunct loam-----	0-1	---	---	---	---	---
	1-5	20-25	4.00-14.00	0.15-0.17	1.0-3.0	5.0-8.0
	5-11	22-40	4.00-14.00	0.11-0.21	1.0-9.0	3.0-6.0
	11-18	35-55	4.00-11.00	0.10-0.19	6.0-9.0	1.0-3.0
	18-31	35-65	4.00-11.00	0.10-0.19	6.0-9.0	1.0-3.0
	31-43	35-65	4.00-11.00	0.10-0.19	6.0-9.0	1.0-3.0
	43-54	35-65	4.00-11.00	0.05-0.19	6.0-9.0	1.0-3.0
	54-67	25-35	4.00-11.00	0.10-0.21	2.6-6.0	0.1-1.0
Griffgulch very gravelly silt loam-----	0-2	---	---	---	---	---
	2-3	---	---	---	---	---
	3-7	18-27	4.00-9.00	0.08-0.17	1.0-3.0	6.0-9.0
	7-11	27-35	2.00-4.00	0.06-0.15	3.0-6.0	3.0-7.0
	11-20	27-35	2.00-4.00	0.06-0.15	3.0-6.0	3.0-7.0
	20-33	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0
	33-47	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0
	47-58	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0
	58	---	---	---	---	---
Rock outcrop, metavolcanic.						
581:						
Surnuf taxadjunct loam-----	0-1	---	---	---	---	---
	1-5	20-25	4.00-14.00	0.15-0.17	1.0-3.0	5.0-8.0
	5-11	22-40	4.00-14.00	0.11-0.21	1.0-9.0	3.0-6.0
	11-18	35-55	4.00-11.00	0.10-0.19	6.0-9.0	1.0-3.0
	18-31	35-65	4.00-11.00	0.10-0.19	6.0-9.0	1.0-3.0
	31-43	35-65	4.00-11.00	0.10-0.19	6.0-9.0	1.0-3.0
	43-54	35-65	4.00-11.00	0.05-0.19	6.0-9.0	1.0-3.0
	54-67	25-35	4.00-11.00	0.10-0.21	2.6-6.0	0.1-1.0

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility		Organic matter
	In	Pct				um/sec	In/in	
581: Griffgulch very gravelly silt loam-----	0-2	---	---	---	---	---	---	---
	2-3	---	---	---	---	---	---	---
	3-7	18-27	4.00-9.00	0.08-0.17	1.0-3.0	6.0-9.0		
	7-11	27-35	2.00-4.00	0.06-0.15	3.0-6.0	3.0-7.0		
	11-20	27-35	2.00-4.00	0.06-0.15	3.0-6.0	3.0-7.0		
	20-33	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0		
	33-47	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0		
	47-58	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0		
	58	---	---	---	---	---		
582: Surnuf taxadjunct loam-----	0-1	---	---	---	---	---		
	1-5	20-25	4.00-14.00	0.15-0.17	1.0-3.0	5.0-8.0		
	5-11	22-40	4.00-14.00	0.11-0.21	1.0-9.0	3.0-6.0		
	11-18	35-55	4.00-11.00	0.10-0.19	6.0-9.0	1.0-3.0		
	18-31	35-65	4.00-11.00	0.10-0.19	6.0-9.0	1.0-3.0		
	31-43	35-65	4.00-11.00	0.10-0.19	6.0-9.0	1.0-3.0		
	43-54	35-65	4.00-11.00	0.05-0.19	6.0-9.0	1.0-3.0		
	54-67	25-35	4.00-11.00	0.10-0.21	2.6-6.0	0.1-1.0		
Griffgulch very gravelly silt loam-----	0-2	---	---	---	---	---		
	2-3	---	---	---	---	---		
	3-7	18-27	4.00-9.00	0.08-0.17	1.0-3.0	6.0-9.0		
	7-11	27-35	2.00-4.00	0.06-0.15	3.0-6.0	3.0-7.0		
	11-20	27-35	2.00-4.00	0.06-0.15	3.0-6.0	3.0-7.0		
	20-33	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0		
	33-47	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0		
	47-58	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0		
	58	---	---	---	---	---		
583: Surnuf taxadjunct loam-----	0-1	---	---	---	---	---		
	1-5	20-25	4.00-14.00	0.15-0.17	1.0-3.0	5.0-8.0		
	5-11	22-40	4.00-14.00	0.11-0.21	1.0-9.0	3.0-6.0		
	11-18	35-55	4.00-11.00	0.10-0.19	6.0-9.0	1.0-3.0		
	18-31	35-65	4.00-11.00	0.10-0.19	6.0-9.0	1.0-3.0		
	31-43	35-65	4.00-11.00	0.10-0.19	6.0-9.0	1.0-3.0		
	43-54	35-65	4.00-11.00	0.05-0.19	6.0-9.0	1.0-3.0		
	54-67	25-35	4.00-11.00	0.10-0.21	2.6-6.0	0.1-1.0		
Griffgulch very gravelly silt loam-----	0-2	---	---	---	---	---		
	2-3	---	---	---	---	---		
	3-7	18-27	4.00-9.00	0.08-0.17	1.0-3.0	6.0-9.0		
	7-11	27-35	2.00-4.00	0.06-0.15	3.0-6.0	3.0-7.0		
	11-20	27-35	2.00-4.00	0.06-0.15	3.0-6.0	3.0-7.0		
	20-33	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0		
	33-47	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0		
	47-58	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0		
	58	---	---	---	---	---		
584: Flanly loam-----	0-2	12-18	12.00-18.00	0.10-0.15	0.7-1.0	3.0-5.0		
	2-5	15-20	12.00-17.00	0.10-0.16	0.7-1.0	1.0-3.0		
	5-10	18-28	3.00-14.00	0.11-0.21	0.9-3.5	1.0-3.0		
	10-23	22-35	2.00-12.00	0.14-0.17	1.5-6.0	0.5-2.0		
	23-26	---	---	---	---	0.0-0.0		

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility		Organic matter
	In	Pct				um/sec	In/in	
584:								
Swedesflat cobbly fine sandy loam-----	0-2	12-20	12.00-20.00	0.08-0.17	0.6-1.0	2.0-8.0		
	2-8	13-20	12.00-19.00	0.07-0.16	0.6-1.0	1.5-3.0		
	8-12	18-25	4.00-14.00	0.09-0.18	0.9-2.6	0.2-1.5		
	12-18	---	---	---	---	---		
	---	---	---	---	---	---		
Rackerby very gravelly sandy loam-----	0-2	8-16	16.00-42.00	0.06-0.14	0.0-1.0	3.0-5.0		
	2-5	10-20	12.00-30.00	0.06-0.13	0.5-1.0	1.5-3.0		
	5-13	10-20	12.00-30.00	0.02-0.10	0.5-1.0	0.2-1.0		
	13	---	---	---	---	---		
585:								
Flanly loam-----	0-2	12-18	12.00-18.00	0.10-0.15	0.7-1.0	3.0-5.0		
	2-5	15-20	12.00-17.00	0.10-0.16	0.7-1.0	1.0-3.0		
	5-10	18-28	3.00-14.00	0.11-0.21	0.9-3.5	1.0-3.0		
	10-23	22-35	2.00-12.00	0.14-0.17	1.5-6.0	0.5-2.0		
	23-26	---	---	---	---	0.0-0.0		
Sommeysflat loam-----	0-2	15-20	12.00-14.00	0.12-0.17	0.7-1.0	4.0-8.0		
	2-9	14-21	12.00-14.00	0.11-0.17	0.7-1.5	1.0-4.0		
	9-14	18-30	3.00-14.00	0.14-0.21	0.9-4.5	0.4-1.5		
	14-24	22-33	2.50-12.00	0.15-0.21	1.6-5.0	0.2-1.0		
	24-31	18-30	2.50-14.00	0.15-0.21	0.9-4.5	0.0-0.5		
	31-62	16-22	4.00-16.00	0.11-0.17	0.8-2.0	0.0-0.0		
	62-70	16-22	4.00-16.00	0.11-0.17	0.8-2.0	0.0-0.0		
586:								
Sommeysflat loam-----	0-2	15-20	12.00-14.00	0.12-0.17	0.7-1.0	4.0-8.0		
	2-9	14-21	12.00-14.00	0.11-0.17	0.7-1.5	1.0-4.0		
	9-14	18-30	3.00-14.00	0.14-0.21	0.9-4.5	0.4-1.5		
	14-24	22-33	2.50-12.00	0.15-0.21	1.6-5.0	0.2-1.0		
	24-31	18-30	2.50-14.00	0.15-0.21	0.9-4.5	0.0-0.5		
	31-62	16-22	4.00-16.00	0.11-0.17	0.8-2.0	0.0-0.0		
	62-70	16-22	4.00-16.00	0.11-0.17	0.8-2.0	0.0-0.0		
Mounthope loam-----	0-1	---	---	---	---	---		
	1-3	17-25	4.00-14.00	0.11-0.18	1.0-3.0	1.0-3.5		
	3-7	20-27	4.00-14.00	0.15-0.18	1.0-3.0	1.0-3.0		
	7-15	20-27	3.00-14.00	0.15-0.18	1.0-3.0	1.0-3.0		
	15-22	27-35	2.00-4.00	0.12-0.20	3.0-6.0	0.8-2.0		
	22-26	27-35	2.00-4.00	0.12-0.20	3.0-6.0	0.5-1.0		
	26-31	27-35	2.00-4.00	0.09-0.20	3.0-6.0	0.5-1.0		
	31-42	27-35	2.00-4.00	0.09-0.20	3.0-6.0	0.2-1.0		
	42-52	20-35	2.00-14.00	0.09-0.20	1.0-6.0	0.2-1.0		
	52	---	---	---	---	---		
587:								
Sommeysflat loam-----	0-2	15-20	12.00-14.00	0.12-0.17	0.7-1.0	4.0-8.0		
	2-9	14-21	12.00-14.00	0.11-0.17	0.7-1.5	1.0-4.0		
	9-14	18-30	3.00-14.00	0.14-0.21	0.9-4.5	0.4-1.5		
	14-24	22-33	2.50-12.00	0.15-0.21	1.6-5.0	0.2-1.0		
	24-31	18-30	2.50-14.00	0.15-0.21	0.9-4.5	0.0-0.5		
	31-62	16-22	4.00-16.00	0.11-0.17	0.8-2.0	0.0-0.0		
	62-70	16-22	4.00-16.00	0.11-0.17	0.8-2.0	0.0-0.0		

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
590:						
Haploxererts gravelly silty clay-----	0-2	30-45	0.90-3.00	0.14-0.18	4.2-9.0	1.0-3.0
	2-10	45-60	0.42-0.90	0.12-0.14	9.0-13.7	0.5-1.5
	10-30	50-65	0.30-0.80	0.11-0.14	10.0-15.2	0.5-1.5
	30-33	40-55	0.60-1.40	0.13-0.16	7.0-12.0	0.0-0.5
	33-41	40-55	0.60-1.40	0.13-0.16	7.0-12.0	0.0-0.5
	41-44	---	---	---	---	---
603:						
Oroville gravelly fine sandy loam-----	0-2	15-24	10.00-17.00	0.10-0.14	0.7-2.5	0.5-2.0
	2-6	18-25	8.00-14.00	0.10-0.17	0.9-2.5	0.2-0.8
	6-13	22-35	2.00-12.00	0.08-0.20	1.5-6.0	0.1-0.5
	13-17	45-52	0.80-1.00	0.07-0.16	6.0-9.0	0.1-0.3
	17-23	45-52	0.80-1.00	0.07-0.16	6.0-9.0	0.0-0.3
	23-31	---	0.00-0.01	---	---	---
	31-60	---	0.00-0.01	---	---	---
Thermalito sandy loam-----	0-2	12-20	14.00-30.00	0.08-0.16	0.5-1.0	0.5-2.0
	2-6	18-33	1.00-14.00	0.09-0.16	0.9-5.0	0.1-0.5
	6-12	18-33	1.00-14.00	0.10-0.17	0.9-5.0	0.1-0.5
	12-18	18-33	1.00-14.00	0.10-0.20	0.9-5.0	0.1-0.5
	18-23	18-33	1.00-14.00	0.10-0.20	0.9-5.0	0.1-0.5
	23-25	18-33	1.00-14.00	0.10-0.20	0.9-5.0	0.1-0.5
	25-29	43-50	0.90-1.40	0.09-0.16	8.0-9.0	0.0-0.3
	29-32	43-50	0.90-1.40	0.09-0.16	8.0-9.0	0.0-0.3
	32-60	---	0.00-0.01	---	---	---
Fernandez sandy loam-----	0-2	15-18	14.00-17.00	0.09-0.15	0.7-3.0	0.5-1.2
	2-6	18-30	3.00-14.00	0.09-0.17	0.9-4.0	0.1-0.5
	6-18	18-30	3.00-14.00	0.09-0.17	0.9-4.0	0.1-0.5
	18-28	35-50	1.40-2.00	0.10-0.19	6.0-9.0	0.1-0.3
	28-44	35-50	1.40-2.00	0.10-0.19	6.0-9.0	0.1-0.3
	44-57	35-50	0.90-1.40	0.08-0.19	6.0-9.0	0.1-0.3
	57-65	35-50	0.90-1.40	0.08-0.19	6.0-9.0	0.1-0.3
	65-73	35-50	0.90-1.80	0.08-0.19	6.0-9.0	0.1-0.3
	73-85	---	0.01-0.42	---	---	---
Thompsonflat fine sandy loam	0-3	12-22	12.00-20.00	0.09-0.17	0.6-1.6	0.5-1.2
	3-7	18-38	1.60-14.00	0.11-0.18	0.9-7.0	0.1-0.5
	7-11	18-38	1.60-14.00	0.09-0.17	0.9-7.0	0.1-0.5
	11-15	18-38	1.60-14.00	0.11-0.17	0.9-7.0	0.1-0.5
	15-22	38-55	0.60-1.60	0.05-0.16	6.0-9.0	0.1-0.5
	22-35	5-38	1.40-4.00	0.02-0.17	0.0-7.0	0.0-0.3
	35-45	5-38	1.40-4.00	0.02-0.11	0.0-7.0	0.0-0.3
	45-53	5-38	1.40-4.00	0.02-0.11	0.0-7.0	0.0-0.3
	53-66	5-38	1.40-4.00	0.02-0.11	0.0-7.0	0.0-0.3
	66-80	5-38	1.40-4.00	0.01-0.11	0.0-7.0	0.0-0.3
605:						
Duric Xerarents fine sandy loam, leveled-----	0-5	10-35	2.00-30.00	0.07-0.19	0.5-6.0	0.0-2.0
	5-12	12-50	0.90-20.00	0.06-0.15	0.6-9.0	0.0-2.0
	12-18	---	0.00-0.01	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility		Organic matter
	In	Pct				um/sec	In/in	
605:								
Oroville gravelly fine sandy loam-----	0-2	15-24		10.00-17.00	0.10-0.14	0.7-2.5	0.5-2.0	
	2-6	18-25		8.00-14.00	0.10-0.17	0.9-2.5	0.2-0.8	
	6-13	22-35		2.00-12.00	0.08-0.20	1.5-6.0	0.1-0.5	
	13-17	45-52		0.80-1.00	0.07-0.16	6.0-9.0	0.1-0.3	
	17-23	45-52		0.80-1.00	0.07-0.16	6.0-9.0	0.0-0.3	
	23-31	---		0.00-0.01	---	---	---	
	31-60	---		0.00-0.01	---	---	---	
606:								
Redtough loam-----	0-1	15-22		6.00-10.00	0.10-0.17	1.0-2.0	1.0-4.0	
	1-7	18-27		4.00-9.00	0.10-0.17	1.0-4.0	0.5-1.0	
	7-13	18-27		4.00-9.00	0.10-0.17	1.0-4.0	0.5-1.0	
	13	---		0.00-0.01	---	---	---	
Fallager loam-----	0-1	20-30		2.00-8.00	0.14-0.20	2.0-4.5	3.0-8.0	
	1-3	35-40		1.40-3.00	0.14-0.18	6.0-7.7	0.5-3.0	
	3-7	40-60		0.42-1.40	0.09-0.14	7.5-13.0	0.5-3.0	
	7	---		0.00-0.01	---	---	---	
Anita, gravelly duripan-----	0-3	40-60		0.42-1.40	0.10-0.15	9.0-13.5	2.0-5.0	
	3-8	40-60		0.42-1.40	0.10-0.14	9.0-13.5	0.5-2.0	
	8-15	40-60		0.42-1.40	0.10-0.14	9.0-13.5	0.5-2.0	
	15	---		0.00-0.01	---	---	---	
609:								
Anita, gravelly duripan-----	0-3	40-60		0.42-1.40	0.10-0.15	9.0-13.5	2.0-5.0	
	3-8	40-60		0.42-1.40	0.10-0.14	9.0-13.5	0.5-2.0	
	8-15	40-60		0.42-1.40	0.10-0.14	9.0-13.5	0.5-2.0	
	15	---		0.00-0.01	---	---	---	
Tuscan taxadjunct gravelly clay loam-----	0-2	18-30		2.50-14.00	0.10-0.19	0.9-6.0	2.0-5.0	
	2-5	25-46		1.20-8.00	0.10-0.19	2.0-9.0	0.8-1.2	
	5-13	35-46		1.20-2.00	0.10-0.17	6.0-9.0	0.5-0.8	
	13-23	35-46		1.20-2.00	0.10-0.17	6.0-9.0	0.5-0.8	
	23-29	35-46		1.20-2.00	0.03-0.16	6.0-9.0	0.0-0.5	
	29	---		0.00-0.01	---	---	---	
614:								
Doemill gravelly loam-----	0-1	15-24		5.00-10.00	0.11-0.17	1.0-3.0	3.0-6.0	
	1-5	18-30		3.00-9.00	0.09-0.21	2.0-4.5	0.5-1.0	
	5-9	18-30		3.00-9.00	0.09-0.21	2.0-4.5	0.5-1.0	
	9-14	18-30		3.00-9.00	0.09-0.21	2.0-4.5	0.5-1.0	
	14	---		---	---	---	---	
Jokerst very cobbly loam-----	0-1	12-21		6.00-12.00	0.06-0.14	1.0-2.0	2.0-5.0	
	1-4	16-25		5.00-8.00	0.10-0.16	1.0-3.0	0.5-2.0	
	4	---		---	---	---	---	
615:								
Doemill gravelly loam-----	0-1	15-24		5.00-10.00	0.11-0.17	1.0-3.0	3.0-6.0	
	1-5	18-30		3.00-9.00	0.09-0.21	2.0-4.5	0.5-1.0	
	5-9	18-30		3.00-9.00	0.09-0.21	2.0-4.5	0.5-1.0	
	9-14	18-30		3.00-9.00	0.09-0.21	2.0-4.5	0.5-1.0	
	14	---		---	---	---	---	
Jokerst very cobbly loam-----	0-1	12-21		6.00-12.00	0.06-0.14	1.0-2.0	2.0-5.0	
	1-4	16-25		5.00-8.00	0.10-0.16	1.0-3.0	0.5-2.0	
	4	---		---	---	---	---	

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct		um/sec	In/in	Pct	Pct
616:							
Jokerst very cobbly loam-----	0-1	12-21		6.00-12.00	0.06-0.14	1.0-2.0	2.0-5.0
	1-4	16-25		5.00-8.00	0.10-0.16	1.0-3.0	0.5-2.0
	4	---		---	---	---	---
Doemill gravelly loam-----	0-1	15-24		5.00-10.00	0.11-0.17	1.0-3.0	3.0-6.0
	1-5	18-30		3.00-9.00	0.09-0.21	2.0-4.5	0.5-1.0
	5-9	18-30		3.00-9.00	0.09-0.21	2.0-4.5	0.5-1.0
	9-14	18-30		3.00-9.00	0.09-0.21	2.0-4.5	0.5-1.0
	14	---		---	---	---	---
Typic Haploxeralfs gravelly loam-----	0-2	20-30		2.00-8.00	0.09-0.20	2.0-4.5	2.0-6.0
	2-8	27-50		0.42-4.00	0.05-0.20	3.5-10.0	1.0-3.0
	8-16	27-50		0.42-4.00	0.05-0.20	3.5-10.0	1.0-3.0
	16-27	27-50		0.42-4.00	0.05-0.20	3.5-10.0	0.5-1.0
	27-40	27-50		0.42-4.00	0.05-0.20	3.5-10.0	0.5-1.0
	40	---		---	---	---	---
617:							
Doemill gravelly loam-----	0-1	15-24		5.00-10.00	0.11-0.17	1.0-3.0	3.0-6.0
	1-5	18-30		3.00-9.00	0.09-0.21	2.0-4.5	0.5-1.0
	5-9	18-30		3.00-9.00	0.09-0.21	2.0-4.5	0.5-1.0
	9-14	18-30		3.00-9.00	0.09-0.21	2.0-4.5	0.5-1.0
	14	---		---	---	---	---
Jokerst very cobbly loam-----	0-1	12-21		6.00-12.00	0.06-0.14	1.0-2.0	2.0-5.0
	1-4	16-25		5.00-8.00	0.10-0.16	1.0-3.0	0.5-2.0
	4	---		---	---	---	---
Typic Haploxeralfs gravelly loam-----	0-2	20-30		2.00-8.00	0.09-0.20	2.0-4.5	2.0-6.0
	2-8	27-50		0.42-4.00	0.05-0.20	3.5-10.0	1.0-3.0
	8-16	27-50		0.42-4.00	0.05-0.20	3.5-10.0	1.0-3.0
	16-27	27-50		0.42-4.00	0.05-0.20	3.5-10.0	0.5-1.0
	27-40	27-50		0.42-4.00	0.05-0.20	3.5-10.0	0.5-1.0
	40	---		---	---	---	---
619:							
Carhart taxadjunct clay-----	0-4	50-60		0.42-1.40	0.08-0.14	10.5-13.5	2.0-5.0
	4-11	40-60		0.42-1.40	0.04-0.15	7.5-13.5	0.5-2.0
	11-17	40-60		0.42-1.40	0.04-0.15	7.5-13.5	0.5-2.0
	17	---		---	---	---	---
620:							
Doemill gravelly loam-----	0-1	15-24		5.00-10.00	0.11-0.17	1.0-3.0	3.0-6.0
	1-5	18-30		3.00-9.00	0.09-0.21	2.0-4.5	0.5-1.0
	5-9	18-30		3.00-9.00	0.09-0.21	2.0-4.5	0.5-1.0
	9-14	18-30		3.00-9.00	0.09-0.21	2.0-4.5	0.5-1.0
	14	---		---	---	---	---
Jokerst very cobbly loam-----	0-1	12-21		6.00-12.00	0.06-0.14	1.0-2.0	2.0-5.0
	1-4	16-25		5.00-8.00	0.10-0.16	1.0-3.0	0.5-2.0
	4	---		---	---	---	---
Ultic Haploxeralfs, thermic, gravelly loam-----	0-2	18-27		4.00-7.00	0.10-0.16	2.0-3.0	5.0-10
	2-6	20-39		1.40-6.00	0.04-0.16	2.0-7.5	1.0-3.0
	6-13	20-39		1.40-6.00	0.04-0.16	2.0-7.5	1.0-3.0
	13-21	20-39		1.40-6.00	0.04-0.16	2.0-7.5	1.0-3.0
	21-31	20-39		1.40-6.00	0.04-0.16	2.0-7.5	0.5-1.0
	31	---		---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility		Organic matter
	In	Pct				um/sec	In/in	
621:								
Doemill gravelly loam-----	0-1	15-24		5.00-10.00	0.11-0.17	1.0-3.0	3.0-6.0	
	1-5	18-30		3.00-9.00	0.09-0.21	2.0-4.5	0.5-1.0	
	5-9	18-30		3.00-9.00	0.09-0.21	2.0-4.5	0.5-1.0	
	9-14	18-30		3.00-9.00	0.09-0.21	2.0-4.5	0.5-1.0	
	14	---		---	---	---	---	
Jokerst very cobbly loam-----	0-1	12-21		6.00-12.00	0.06-0.14	1.0-2.0	2.0-5.0	
	1-4	16-25		5.00-8.00	0.10-0.16	1.0-3.0	0.5-2.0	
	4	---		---	---	---	---	
Ultic Haploxeralfs, thermic, gravelly loam-----	0-2	18-27		4.00-7.00	0.10-0.16	2.0-3.0	5.0-10	
	2-6	20-39		1.40-6.00	0.04-0.16	2.0-7.5	1.0-3.0	
	6-13	20-39		1.40-6.00	0.04-0.16	2.0-7.5	1.0-3.0	
	13-21	20-39		1.40-6.00	0.04-0.16	2.0-7.5	1.0-3.0	
	21-31	20-39		1.40-6.00	0.04-0.16	2.0-7.5	0.5-1.0	
	31	---		---	---	---	---	
622:								
Xerorthents, shallow-----	0-2	18-35		1.40-14.00	0.08-0.21	2.0-6.0	2.0-6.0	
	2-5	23-42		1.40-5.00	0.07-0.21	2.0-8.0	0.4-4.0	
	5-8	23-42		1.40-5.00	0.07-0.21	2.0-8.0	0.4-4.0	
	8	---		---	---	---	---	
Typic Haploxeralfs gravelly loam-----	0-2	20-30		2.00-8.00	0.09-0.20	2.0-4.5	2.0-6.0	
	2-8	27-50		0.42-4.00	0.05-0.20	3.5-10.0	1.0-3.0	
	8-16	27-50		0.42-4.00	0.05-0.20	3.5-10.0	1.0-3.0	
	16-27	27-50		0.42-4.00	0.05-0.20	3.5-10.0	0.5-1.0	
	27-40	27-50		0.42-4.00	0.05-0.20	3.5-10.0	0.5-1.0	
	40	---		---	---	---	---	
Rock outcrop, mudflow-breccia cliffs.								
623:								
Xerorthents, shallow-----	0-2	18-35		1.40-14.00	0.08-0.21	2.0-6.0	2.0-6.0	
	2-5	23-42		1.40-5.00	0.07-0.21	2.0-8.0	0.4-4.0	
	5-8	23-42		1.40-5.00	0.07-0.21	2.0-8.0	0.4-4.0	
	8	---		---	---	---	---	
Typic Haploxeralfs gravelly loam-----	0-2	20-30		2.00-8.00	0.09-0.20	2.0-4.5	2.0-6.0	
	2-8	27-50		0.42-4.00	0.05-0.20	3.5-10.0	1.0-3.0	
	8-16	27-50		0.42-4.00	0.05-0.20	3.5-10.0	1.0-3.0	
	16-27	27-50		0.42-4.00	0.05-0.20	3.5-10.0	0.5-1.0	
	27-40	27-50		0.42-4.00	0.05-0.20	3.5-10.0	0.5-1.0	
	40	---		---	---	---	---	
Rock outcrop, mudflow-breccia cliffs.								
624:								
Ultic Haploxeralfs, mesic, gravelly loam-----	0-1	---		---	---	---	---	
	1-4	20-26		4.00-8.00	0.10-0.18	2.0-3.0	5.0-10	
	4-9	25-35		1.40-4.00	0.10-0.21	3.0-6.0	1.0-4.0	
	9-23	25-35		1.40-4.00	0.10-0.21	3.0-6.0	1.0-4.0	
	23-32	25-35		1.40-4.00	0.10-0.21	3.0-6.0	1.0-4.0	
	32-42	35-50		0.42-2.00	0.04-0.18	6.0-10.0	0.5-2.0	
	42	---		---	---	---	---	

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility		Organic matter
	In	Pct				um/sec	In/in	
628:								
Rockstripe very gravelly loam-----	0-2	15-25		4.00-21.00	0.06-0.12	1.0-3.0	2.0-8.0	
	2-6	17-27		4.00-20.00	0.03-0.14	1.0-3.0	0.5-3.0	
	6-9	17-27		4.00-20.00	0.03-0.14	1.0-3.0	0.5-3.0	
	9	---		---	---	---	---	
Ultic Haploxeralfs gravelly loam-----	0-4	20-26		4.00-8.00	0.10-0.15	2.0-3.0	5.0-10	
	4-10	23-35		1.40-7.00	0.10-0.20	2.0-6.0	1.0-5.0	
	10-18	23-35		1.40-7.00	0.10-0.20	2.0-6.0	1.0-5.0	
	18-35	35-50		0.42-2.00	0.07-0.16	6.0-10.0	1.0-2.0	
	35-48	35-50		0.42-2.00	0.07-0.16	6.0-10.0	1.0-2.0	
	48	---		---	---	---	---	
Rock outcrop, mudflow-breccia cliffs.								
629:								
Slideland gravelly loam-----	0-2	18-27		4.00-16.00	0.11-0.18	2.0-3.0	5.0-14	
	2-9	20-35		2.00-6.00	0.12-0.20	2.0-6.0	1.0-6.0	
	9-14	20-35		2.00-6.00	0.12-0.20	2.0-6.0	1.0-6.0	
	14-21	20-35		2.00-6.00	0.12-0.20	2.0-6.0	1.0-6.0	
	21-28	20-35		2.00-6.00	0.12-0.20	2.0-6.0	1.0-6.0	
	28-38	35-50		0.50-2.00	0.08-0.18	6.0-10.5	0.2-1.0	
	38-51	35-50		0.50-2.00	0.08-0.18	6.0-10.5	0.2-1.0	
	51-69	35-50		0.50-2.00	0.08-0.18	6.0-10.5	0.2-1.0	
	69-80	35-50		0.50-2.00	0.08-0.18	6.0-10.5	0.2-1.0	
630:								
Slideland gravelly loam-----	0-2	18-27		4.00-16.00	0.11-0.18	2.0-3.0	5.0-14	
	2-9	20-35		2.00-6.00	0.12-0.20	2.0-6.0	1.0-6.0	
	9-14	20-35		2.00-6.00	0.12-0.20	2.0-6.0	1.0-6.0	
	14-21	20-35		2.00-6.00	0.12-0.20	2.0-6.0	1.0-6.0	
	21-28	20-35		2.00-6.00	0.12-0.20	2.0-6.0	1.0-6.0	
	28-38	35-50		0.50-2.00	0.08-0.18	6.0-10.5	0.2-1.0	
	38-51	35-50		0.50-2.00	0.08-0.18	6.0-10.5	0.2-1.0	
	51-69	35-50		0.50-2.00	0.08-0.18	6.0-10.5	0.2-1.0	
	69-80	35-50		0.50-2.00	0.08-0.18	6.0-10.5	0.2-1.0	
631:								
Slideland gravelly loam-----	0-2	18-27		4.00-16.00	0.11-0.18	2.0-3.0	5.0-14	
	2-9	20-35		2.00-6.00	0.12-0.20	2.0-6.0	1.0-6.0	
	9-14	20-35		2.00-6.00	0.12-0.20	2.0-6.0	1.0-6.0	
	14-21	20-35		2.00-6.00	0.12-0.20	2.0-6.0	1.0-6.0	
	21-28	20-35		2.00-6.00	0.12-0.20	2.0-6.0	1.0-6.0	
	28-38	35-50		0.50-2.00	0.08-0.18	6.0-10.5	0.2-1.0	
	38-51	35-50		0.50-2.00	0.08-0.18	6.0-10.5	0.2-1.0	
	51-69	35-50		0.50-2.00	0.08-0.18	6.0-10.5	0.2-1.0	
	69-80	35-50		0.50-2.00	0.08-0.18	6.0-10.5	0.2-1.0	
632:								
Ultic Haploxeralfs, conglomerate, very deep-----	0-2	---		---	---	---	---	
	2-6	23-30		1.40-6.00	0.08-0.18	2.0-4.5	5.0-10	
	6-10	25-40		1.40-4.00	0.05-0.19	3.0-7.5	1.0-5.0	
	10-17	25-40		1.40-4.00	0.05-0.19	3.0-7.5	1.0-5.0	
	17-28	25-40		1.40-4.00	0.05-0.19	3.0-7.5	1.0-5.0	
	28-40	25-40		1.40-4.00	0.05-0.19	3.0-7.5	1.0-5.0	
	40-50	29-50		0.42-3.00	0.04-0.17	4.5-10.0	0.2-1.0	
	50-71	29-50		0.42-3.00	0.04-0.17	4.5-10.0	0.2-1.0	
	71-84	29-50		0.42-3.00	0.04-0.17	4.5-10.0	0.2-1.0	

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility		Organic matter
	In	Pct				um/sec	In/in	
632: Ultic Haploxeralfs, conglomerate, moderately deep-----	0-2	---	---	---	---	---	---	---
	2-5	23-27	4.00-6.00	0.07-0.12	2.0-4.0	5.0-10		
	5-10	27-35	1.40-4.00	0.04-0.14	4.0-6.0	0.5-5.0		
	10-25	27-35	1.40-4.00	0.04-0.14	4.0-6.0	0.5-5.0		
	25	---	---	---	---	---		
633: Ultic Haploxeralfs, conglomerate, very deep-----	0-2	---	---	---	---	---	---	---
	2-6	23-30	1.40-6.00	0.08-0.18	2.0-4.5	5.0-10		
	6-10	25-40	1.40-4.00	0.05-0.19	3.0-7.5	1.0-5.0		
	10-17	25-40	1.40-4.00	0.05-0.19	3.0-7.5	1.0-5.0		
	17-28	25-40	1.40-4.00	0.05-0.19	3.0-7.5	1.0-5.0		
	28-40	25-40	1.40-4.00	0.05-0.19	3.0-7.5	1.0-5.0		
	40-50	29-50	0.42-3.00	0.04-0.17	4.5-10.0	0.2-1.0		
	50-71	29-50	0.42-3.00	0.04-0.17	4.5-10.0	0.2-1.0		
	71-84	29-50	0.42-3.00	0.04-0.17	4.5-10.0	0.2-1.0		
Ultic Haploxeralfs, conglomerate, moderately deep-----	0-2	---	---	---	---	---	---	---
	2-5	23-27	4.00-6.00	0.07-0.12	2.0-4.0	5.0-10		
	5-10	27-35	1.40-4.00	0.04-0.14	4.0-6.0	0.5-5.0		
	10-25	27-35	1.40-4.00	0.04-0.14	4.0-6.0	0.5-5.0		
	25	---	---	---	---	---		
634: Ultic Haploxeralfs, conglomerate, very deep-----	0-2	---	---	---	---	---	---	---
	2-6	23-30	1.40-6.00	0.08-0.18	2.0-4.5	5.0-10		
	6-10	25-40	1.40-4.00	0.05-0.19	3.0-7.5	1.0-5.0		
	10-17	25-40	1.40-4.00	0.05-0.19	3.0-7.5	1.0-5.0		
	17-28	25-40	1.40-4.00	0.05-0.19	3.0-7.5	1.0-5.0		
	28-40	25-40	1.40-4.00	0.05-0.19	3.0-7.5	1.0-5.0		
	40-50	29-50	0.42-3.00	0.04-0.17	4.5-10.0	0.2-1.0		
	50-71	29-50	0.42-3.00	0.04-0.17	4.5-10.0	0.2-1.0		
	71-84	29-50	0.42-3.00	0.04-0.17	4.5-10.0	0.2-1.0		
Ultic Haploxeralfs, conglomerate, moderately deep-----	0-2	---	---	---	---	---	---	---
	2-5	23-27	4.00-6.00	0.07-0.12	2.0-4.0	5.0-10		
	5-10	27-35	1.40-4.00	0.04-0.14	4.0-6.0	0.5-5.0		
	10-25	27-35	1.40-4.00	0.04-0.14	4.0-6.0	0.5-5.0		
	25	---	---	---	---	---		
635: Ultic Haploxeralfs, conglomerate, very deep-----	0-2	---	---	---	---	---	---	---
	2-6	23-30	1.40-6.00	0.08-0.18	2.0-4.5	5.0-10		
	6-10	25-40	1.40-4.00	0.05-0.19	3.0-7.5	1.0-5.0		
	10-17	25-40	1.40-4.00	0.05-0.19	3.0-7.5	1.0-5.0		
	17-28	25-40	1.40-4.00	0.05-0.19	3.0-7.5	1.0-5.0		
	28-40	25-40	1.40-4.00	0.05-0.19	3.0-7.5	1.0-5.0		
	40-50	29-50	0.42-3.00	0.04-0.17	4.5-10.0	0.2-1.0		
	50-71	29-50	0.42-3.00	0.04-0.17	4.5-10.0	0.2-1.0		
	71-84	29-50	0.42-3.00	0.04-0.17	4.5-10.0	0.2-1.0		

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
639: Ultic Haploxeralfs, sandstone	0-0.5	---	---	---	---	---
	0.5-2	10-26	4.00-14.00	0.09-0.18	0.5-3.0	2.0-6.0
	2-6	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	6-11	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	11-17	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	17-24	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	24-32	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	32-53	10-30	4.00-14.00	0.01-0.13	0.5-3.0	0.1-0.5
	53-65	---	---	---	---	---
	65	---	---	---	---	---
640: Ultic Haploxeralfs, sandstone	0-0.5	---	---	---	---	---
	0.5-2	10-26	4.00-14.00	0.09-0.18	0.5-3.0	2.0-6.0
	2-6	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	6-11	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	11-17	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	17-24	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	24-32	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	32-53	10-30	4.00-14.00	0.01-0.13	0.5-3.0	0.1-0.5
	53-65	---	---	---	---	---
	65	---	---	---	---	---
641: Ultic Haploxeralfs, sandstone	0-0.5	---	---	---	---	---
	0.5-2	10-26	4.00-14.00	0.09-0.18	0.5-3.0	2.0-6.0
	2-6	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	6-11	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	11-17	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	17-24	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	24-32	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	32-53	10-30	4.00-14.00	0.01-0.13	0.5-3.0	0.1-0.5
	53-65	---	---	---	---	---
	65	---	---	---	---	---
642: Chinacamp gravelly loam-----	0-1	---	---	---	---	---
	1-5	20-26	1.40-14.00	0.05-0.15	3.0-6.0	8.0-14
	5-15	27-42	0.42-4.00	0.03-0.15	3.0-6.0	1.0-8.0
	15-29	27-42	0.42-4.00	0.03-0.15	3.0-6.0	0.2-2.0
	29-38	27-42	0.42-4.00	0.03-0.15	6.0-9.0	0.2-2.0
	38-44	27-42	0.42-4.00	0.03-0.15	6.0-9.0	0.2-2.0
	44-61	27-42	0.42-4.00	0.03-0.15	6.0-9.0	0.2-2.0
	61-72	27-42	0.42-4.00	0.03-0.15	3.0-6.0	0.2-2.0
643: Chinacamp gravelly loam-----	0-1	---	---	---	---	---
	1-5	20-26	1.40-14.00	0.05-0.15	3.0-6.0	8.0-14
	5-15	27-42	0.42-4.00	0.03-0.15	3.0-6.0	1.0-8.0
	15-29	27-42	0.42-4.00	0.03-0.15	3.0-6.0	0.2-2.0
	29-38	27-42	0.42-4.00	0.03-0.15	6.0-9.0	0.2-2.0
	38-44	27-42	0.42-4.00	0.03-0.15	6.0-9.0	0.2-2.0
	44-61	27-42	0.42-4.00	0.03-0.15	6.0-9.0	0.2-2.0
	61-72	27-42	0.42-4.00	0.03-0.15	3.0-6.0	0.2-2.0

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility		Organic matter
	In	Pct				um/sec	In/in	
644: Chinacamp gravelly loam-----	0-1	---	---	---	---	---	---	---
	1-5	20-26	1.40-14.00	0.05-0.15	3.0-6.0	8.0-14		
	5-15	27-42	0.42-4.00	0.03-0.15	3.0-6.0	1.0-8.0		
	15-29	27-42	0.42-4.00	0.03-0.15	3.0-6.0	0.2-2.0		
	29-38	27-42	0.42-4.00	0.03-0.15	6.0-9.0	0.2-2.0		
	38-44	27-42	0.42-4.00	0.03-0.15	6.0-9.0	0.2-2.0		
	44-61	27-42	0.42-4.00	0.03-0.15	6.0-9.0	0.2-2.0		
	61-72	27-42	0.42-4.00	0.03-0.15	3.0-6.0	0.2-2.0		
645: Chinacamp gravelly loam-----	0-1	---	---	---	---	---	---	---
	1-5	20-26	1.40-14.00	0.05-0.15	3.0-6.0	8.0-14		
	5-15	27-42	0.42-4.00	0.03-0.15	3.0-6.0	1.0-8.0		
	15-29	27-42	0.42-4.00	0.03-0.15	3.0-6.0	0.2-2.0		
	29-38	27-42	0.42-4.00	0.03-0.15	6.0-9.0	0.2-2.0		
	38-44	27-42	0.42-4.00	0.03-0.15	6.0-9.0	0.2-2.0		
	44-61	27-42	0.42-4.00	0.03-0.15	6.0-9.0	0.2-2.0		
	61-72	27-42	0.42-4.00	0.03-0.15	3.0-6.0	0.2-2.0		
646: Coalcanyon taxadjunct very gravelly loam-----	0-2	20-27	4.00-8.00	0.03-0.12	2.0-4.0	4.0-10		
	2-6	23-35	2.00-6.00	0.03-0.14	2.0-6.0	0.5-5.0		
	6-14	23-35	2.00-6.00	0.03-0.14	2.0-6.0	0.5-5.0		
	14-24	23-35	2.00-6.00	0.03-0.14	2.0-6.0	0.5-5.0		
	24-42	23-35	2.00-6.00	0.03-0.14	2.0-6.0	0.5-5.0		
	42-54	30-50	0.50-3.00	0.03-0.12	4.5-10.0	0.3-1.0		
	54-72	30-50	0.50-3.00	0.03-0.12	4.5-10.0	0.3-1.0		
647: Coalcanyon taxadjunct very gravelly loam-----	0-2	20-27	4.00-8.00	0.03-0.12	2.0-4.0	4.0-10		
	2-6	23-35	2.00-6.00	0.03-0.14	2.0-6.0	0.5-5.0		
	6-14	23-35	2.00-6.00	0.03-0.14	2.0-6.0	0.5-5.0		
	14-24	23-35	2.00-6.00	0.03-0.14	2.0-6.0	0.5-5.0		
	24-42	23-35	2.00-6.00	0.03-0.14	2.0-6.0	0.5-5.0		
	42-54	30-50	0.50-3.00	0.03-0.12	4.5-10.0	0.3-1.0		
	54-72	30-50	0.50-3.00	0.03-0.12	4.5-10.0	0.3-1.0		
648: Coalcanyon taxadjunct very gravelly loam-----	0-2	20-27	4.00-8.00	0.03-0.12	2.0-4.0	4.0-10		
	2-6	23-35	2.00-6.00	0.03-0.14	2.0-6.0	0.5-5.0		
	6-14	23-35	2.00-6.00	0.03-0.14	2.0-6.0	0.5-5.0		
	14-24	23-35	2.00-6.00	0.03-0.14	2.0-6.0	0.5-5.0		
	24-42	23-35	2.00-6.00	0.03-0.14	2.0-6.0	0.5-5.0		
	42-54	30-50	0.50-3.00	0.03-0.12	4.5-10.0	0.3-1.0		
	54-72	30-50	0.50-3.00	0.03-0.12	4.5-10.0	0.3-1.0		
649: Coalcanyon taxadjunct very gravelly loam-----	0-2	20-27	4.00-8.00	0.03-0.12	2.0-4.0	4.0-10		
	2-6	23-35	2.00-6.00	0.03-0.14	2.0-6.0	0.5-5.0		
	6-14	23-35	2.00-6.00	0.03-0.14	2.0-6.0	0.5-5.0		
	14-24	23-35	2.00-6.00	0.03-0.14	2.0-6.0	0.5-5.0		
	24-42	23-35	2.00-6.00	0.03-0.14	2.0-6.0	0.5-5.0		
	42-54	30-50	0.50-3.00	0.03-0.12	4.5-10.0	0.3-1.0		
	54-72	30-50	0.50-3.00	0.03-0.12	4.5-10.0	0.3-1.0		

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
659:						
Bonneyr ridge sandy loam-----	0-1	---	---	---	---	---
	1-3	5-15	14.00-42.00	0.11-0.12	0.0-1.0	2.0-8.0
	3-6	5-15	14.00-42.00	0.10-0.11	0.0-1.0	2.0-8.0
	6-16	5-18	14.00-42.00	0.09-0.10	0.0-1.0	0.6-6.0
	16-22	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0
	22-31	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0
	31-39	5-18	14.00-42.00	0.09-0.13	0.0-3.0	0.6-6.0
	39-56	5-10	42.00-141.00	0.06-0.09	0.0-3.0	0.1-0.6
	56-76	5-10	42.00-141.00	0.05-0.09	0.0-3.0	0.1-0.6
Chawanakee gravelly sandy loam-----	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-5	2-6	30.00-141.00	0.04-0.10	0.0-0.0	1.0-5.0
	5-11	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	11-19	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	19	---	---	---	---	---
Rock outcrop, quartz diorite.						
660:						
Bonneyr ridge sandy loam-----	0-1	---	---	---	---	---
	1-3	5-15	14.00-42.00	0.11-0.12	0.0-1.0	2.0-8.0
	3-6	5-15	14.00-42.00	0.10-0.11	0.0-1.0	2.0-8.0
	6-16	5-18	14.00-42.00	0.09-0.10	0.0-1.0	0.6-6.0
	16-22	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0
	22-31	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0
	31-39	5-18	14.00-42.00	0.09-0.13	0.0-3.0	0.6-6.0
	39-56	5-10	42.00-141.00	0.06-0.09	0.0-3.0	0.1-0.6
	56-76	5-10	42.00-141.00	0.05-0.09	0.0-3.0	0.1-0.6
Chawanakee gravelly sandy loam-----	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-5	2-6	30.00-141.00	0.04-0.10	0.0-0.0	1.0-5.0
	5-11	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	11-19	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	19	---	---	---	---	---
Rock outcrop, quartz diorite.						
661:						
Millerridge gravelly sandy clay loam-----	0-2	20-27	2.70-7.00	0.10-0.15	2.0-3.0	5.0-8.0
	2-6	27-35	1.40-4.00	0.09-0.18	3.0-6.0	1.0-5.0
	6-12	27-35	1.40-4.00	0.09-0.18	3.0-6.0	1.0-5.0
	12-20	30-50	0.90-3.00	0.08-0.17	4.5-10.0	0.5-2.0
	20-26	30-50	0.90-3.00	0.08-0.17	4.5-10.0	0.5-2.0
	26	---	---	---	---	---
Boxrobber cobbly sandy clay loam-----	0-2	22-30	1.40-14.00	0.10-0.15	1.0-3.0	5.0-8.0
	2-8	27-35	1.40-4.00	0.06-0.14	3.0-6.0	1.0-5.0
	8-16	27-35	1.40-4.00	0.06-0.14	3.0-6.0	1.0-5.0
	16-30	---	---	---	---	---
	30	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility		Organic matter
	In	Pct				um/sec	In/in	
662:								
Millerridge gravelly sandy clay loam-----	0-2	20-27		2.70-7.00	0.10-0.15	2.0-3.0	5.0-8.0	
	2-6	27-35		1.40-4.00	0.09-0.18	3.0-6.0	1.0-5.0	
	6-12	27-35		1.40-4.00	0.09-0.18	3.0-6.0	1.0-5.0	
	12-20	30-50		0.90-3.00	0.08-0.17	4.5-10.0	0.5-2.0	
	20-26	30-50		0.90-3.00	0.08-0.17	4.5-10.0	0.5-2.0	
	26	---		---	---	---	---	
Boxrobber cobbly sandy clay loam-----	0-2	22-30		1.40-14.00	0.10-0.15	1.0-3.0	5.0-8.0	
	2-8	27-35		1.40-4.00	0.06-0.14	3.0-6.0	1.0-5.0	
	8-16	27-35		1.40-4.00	0.06-0.14	3.0-6.0	1.0-5.0	
	16-30	---		---	---	---	---	
	30	---		---	---	---	---	
663:								
Millerridge gravelly sandy clay loam-----	0-2	20-27		2.70-7.00	0.10-0.15	2.0-3.0	5.0-8.0	
	2-6	27-35		1.40-4.00	0.09-0.18	3.0-6.0	1.0-5.0	
	6-12	27-35		1.40-4.00	0.09-0.18	3.0-6.0	1.0-5.0	
	12-20	30-50		0.90-3.00	0.08-0.17	4.5-10.0	0.5-2.0	
	20-26	30-50		0.90-3.00	0.08-0.17	4.5-10.0	0.5-2.0	
	26	---		---	---	---	---	
Boxrobber cobbly sandy clay loam-----	0-2	22-30		1.40-14.00	0.10-0.15	1.0-3.0	5.0-8.0	
	2-8	27-35		1.40-4.00	0.06-0.14	3.0-6.0	1.0-5.0	
	8-16	27-35		1.40-4.00	0.06-0.14	3.0-6.0	1.0-5.0	
	16-30	---		---	---	---	---	
	30	---		---	---	---	---	
664:								
Millerridge gravelly sandy clay loam-----	0-2	20-27		2.70-7.00	0.10-0.15	2.0-3.0	5.0-8.0	
	2-6	27-35		1.40-4.00	0.09-0.18	3.0-6.0	1.0-5.0	
	6-12	27-35		1.40-4.00	0.09-0.18	3.0-6.0	1.0-5.0	
	12-20	30-50		0.90-3.00	0.08-0.17	4.5-10.0	0.5-2.0	
	20-26	30-50		0.90-3.00	0.08-0.17	4.5-10.0	0.5-2.0	
	26	---		---	---	---	---	
Boxrobber cobbly sandy clay loam-----	0-2	22-30		1.40-14.00	0.10-0.15	1.0-3.0	5.0-8.0	
	2-8	27-35		1.40-4.00	0.06-0.14	3.0-6.0	1.0-5.0	
	8-16	27-35		1.40-4.00	0.06-0.14	3.0-6.0	1.0-5.0	
	16-30	---		---	---	---	---	
	30	---		---	---	---	---	
665:								
Surnuf gravelly loam-----	0-1	---		---	---	---	---	
	1-4	22-30		3.00-7.00	0.11-0.20	2.0-4.5	6.0-9.0	
	4-9	27-40		1.40-4.00	0.12-0.21	3.5-7.5	2.0-6.0	
	9-16	27-40		1.40-4.00	0.12-0.21	3.5-7.5	2.0-6.0	
	16-27	35-55		1.40-2.00	0.08-0.19	6.0-9.0	0.5-2.0	
	27-29	35-55		1.40-2.00	0.08-0.19	6.0-9.0	0.5-2.0	
	29-56	35-55		1.40-2.00	0.05-0.17	6.0-9.0	0.2-1.0	
	56-72	35-55		1.40-2.00	0.05-0.17	6.0-9.0	0.2-1.0	

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility		Organic matter
	In	Pct				um/sec	In/in	
665: Bigridge loam-----	0-1	---	---	---	---	---	---	---
	1-5	15-25	4.00-20.00	0.11-0.17	1.0-3.0	1.0-4.0	1.0-4.0	1.0-4.0
	5-9	19-30	3.00-14.00	0.11-0.16	1.0-4.5	1.0-4.0	1.0-4.0	1.0-4.0
	9-15	18-35	2.00-14.00	0.10-0.20	1.0-6.0	1.0-4.0	1.0-4.0	1.0-4.0
	15-20	18-35	2.00-14.00	0.10-0.20	1.0-6.0	0.5-1.0	0.5-1.0	0.5-1.0
	20-27	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.3-1.0	0.3-1.0	0.3-1.0
	27-36	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.1-1.0	0.1-1.0	0.1-1.0
	36-51	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.1-1.0	0.1-1.0	0.1-1.0
	51-62	---	---	---	---	---	---	---
666: Surnuf gravelly loam-----	0-1	---	---	---	---	---	---	---
	1-4	22-30	3.00-7.00	0.11-0.20	2.0-4.5	6.0-9.0	6.0-9.0	6.0-9.0
	4-9	27-40	1.40-4.00	0.12-0.21	3.5-7.5	2.0-6.0	2.0-6.0	2.0-6.0
	9-16	27-40	1.40-4.00	0.12-0.21	3.5-7.5	2.0-6.0	2.0-6.0	2.0-6.0
	16-27	35-55	1.40-2.00	0.08-0.19	6.0-9.0	0.5-2.0	0.5-2.0	0.5-2.0
	27-29	35-55	1.40-2.00	0.08-0.19	6.0-9.0	0.5-2.0	0.5-2.0	0.5-2.0
	29-56	35-55	1.40-2.00	0.05-0.17	6.0-9.0	0.2-1.0	0.2-1.0	0.2-1.0
	56-72	35-55	1.40-2.00	0.05-0.17	6.0-9.0	0.2-1.0	0.2-1.0	0.2-1.0
Bigridge loam-----	0-1	---	---	---	---	---	---	---
	1-5	15-25	4.00-20.00	0.11-0.17	1.0-3.0	1.0-4.0	1.0-4.0	1.0-4.0
	5-9	19-30	3.00-14.00	0.11-0.16	1.0-4.5	1.0-4.0	1.0-4.0	1.0-4.0
	9-15	18-35	2.00-14.00	0.10-0.20	1.0-6.0	1.0-4.0	1.0-4.0	1.0-4.0
	15-20	18-35	2.00-14.00	0.10-0.20	1.0-6.0	0.5-1.0	0.5-1.0	0.5-1.0
	20-27	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.3-1.0	0.3-1.0	0.3-1.0
	27-36	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.1-1.0	0.1-1.0	0.1-1.0
	36-51	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.1-1.0	0.1-1.0	0.1-1.0
	51-62	---	---	---	---	---	---	---
667: Surnuf gravelly loam-----	0-1	---	---	---	---	---	---	---
	1-4	22-30	3.00-7.00	0.11-0.20	2.0-4.5	6.0-9.0	6.0-9.0	6.0-9.0
	4-9	27-40	1.40-4.00	0.12-0.21	3.5-7.5	2.0-6.0	2.0-6.0	2.0-6.0
	9-16	27-40	1.40-4.00	0.12-0.21	3.5-7.5	2.0-6.0	2.0-6.0	2.0-6.0
	16-27	35-55	1.40-2.00	0.08-0.19	6.0-9.0	0.5-2.0	0.5-2.0	0.5-2.0
	27-29	35-55	1.40-2.00	0.08-0.19	6.0-9.0	0.5-2.0	0.5-2.0	0.5-2.0
	29-56	35-55	1.40-2.00	0.05-0.17	6.0-9.0	0.2-1.0	0.2-1.0	0.2-1.0
	56-72	35-55	1.40-2.00	0.05-0.17	6.0-9.0	0.2-1.0	0.2-1.0	0.2-1.0
Bigridge loam-----	0-1	---	---	---	---	---	---	---
	1-5	15-25	4.00-20.00	0.11-0.17	1.0-3.0	1.0-4.0	1.0-4.0	1.0-4.0
	5-9	19-30	3.00-14.00	0.11-0.16	1.0-4.5	1.0-4.0	1.0-4.0	1.0-4.0
	9-15	18-35	2.00-14.00	0.10-0.20	1.0-6.0	1.0-4.0	1.0-4.0	1.0-4.0
	15-20	18-35	2.00-14.00	0.10-0.20	1.0-6.0	0.5-1.0	0.5-1.0	0.5-1.0
	20-27	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.3-1.0	0.3-1.0	0.3-1.0
	27-36	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.1-1.0	0.1-1.0	0.1-1.0
	36-51	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.1-1.0	0.1-1.0	0.1-1.0
	51-62	---	---	---	---	---	---	---
668: Surnuf gravelly loam-----	0-1	---	---	---	---	---	---	---
	1-4	22-30	3.00-7.00	0.11-0.20	2.0-4.5	6.0-9.0	6.0-9.0	6.0-9.0
	4-9	27-40	1.40-4.00	0.12-0.21	3.5-7.5	2.0-6.0	2.0-6.0	2.0-6.0
	9-16	27-40	1.40-4.00	0.12-0.21	3.5-7.5	2.0-6.0	2.0-6.0	2.0-6.0
	16-27	35-55	1.40-2.00	0.08-0.19	6.0-9.0	0.5-2.0	0.5-2.0	0.5-2.0
	27-29	35-55	1.40-2.00	0.08-0.19	6.0-9.0	0.5-2.0	0.5-2.0	0.5-2.0
	29-56	35-55	1.40-2.00	0.05-0.17	6.0-9.0	0.2-1.0	0.2-1.0	0.2-1.0
	56-72	35-55	1.40-2.00	0.05-0.17	6.0-9.0	0.2-1.0	0.2-1.0	0.2-1.0

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
671:						
Oroshore gravelly loam-----	0-2	20-27	4.00-7.00	0.09-0.16	2.0-4.0	2.0-6.0
	2-15	27-39	1.40-4.00	0.04-0.18	4.0-7.5	0.5-2.0
	15-28	27-39	1.40-4.00	0.04-0.18	4.0-7.5	0.5-2.0
	28-34	27-39	1.40-4.00	0.04-0.18	4.0-7.5	0.5-2.0
	34	---	---	---	---	---
Mounthope loam-----	0-1	---	---	---	---	---
	1-3	17-25	4.00-14.00	0.11-0.18	1.0-3.0	1.0-3.5
	3-7	20-27	4.00-14.00	0.15-0.18	1.0-3.0	1.0-3.0
	7-15	20-27	3.00-14.00	0.15-0.18	1.0-3.0	1.0-3.0
	15-22	27-35	2.00-4.00	0.12-0.20	3.0-6.0	0.8-2.0
	22-26	27-35	2.00-4.00	0.12-0.20	3.0-6.0	0.5-1.0
	26-31	27-35	2.00-4.00	0.09-0.20	3.0-6.0	0.5-1.0
	31-42	27-35	2.00-4.00	0.09-0.20	3.0-6.0	0.2-1.0
	42-52	20-35	2.00-14.00	0.09-0.20	1.0-6.0	0.2-1.0
	52	---	---	---	---	---
Dunstone gravelly loam-----	0-4	12-20	12.00-20.00	0.12-0.17	0.6-1.0	5.0-8.0
	4-6	14-22	12.00-18.00	0.11-0.17	0.7-2.0	1.0-2.0
	6-10	15-27	4.00-13.00	0.10-0.20	0.7-3.0	1.0-2.0
	10-15	18-35	2.00-14.00	0.10-0.20	0.9-6.0	0.5-1.5
	15-37	---	---	---	---	---
	37	---	---	---	---	---
672:						
Oroshore gravelly loam-----	0-2	20-27	4.00-7.00	0.09-0.16	2.0-4.0	2.0-6.0
	2-15	27-39	1.40-4.00	0.04-0.18	4.0-7.5	0.5-2.0
	15-28	27-39	1.40-4.00	0.04-0.18	4.0-7.5	0.5-2.0
	28-34	27-39	1.40-4.00	0.04-0.18	4.0-7.5	0.5-2.0
	34	---	---	---	---	---
Mounthope loam-----	0-1	---	---	---	---	---
	1-3	17-25	4.00-14.00	0.11-0.18	1.0-3.0	1.0-3.5
	3-7	20-27	4.00-14.00	0.15-0.18	1.0-3.0	1.0-3.0
	7-15	20-27	3.00-14.00	0.15-0.18	1.0-3.0	1.0-3.0
	15-22	27-35	2.00-4.00	0.12-0.20	3.0-6.0	0.8-2.0
	22-26	27-35	2.00-4.00	0.12-0.20	3.0-6.0	0.5-1.0
	26-31	27-35	2.00-4.00	0.09-0.20	3.0-6.0	0.5-1.0
	31-42	27-35	2.00-4.00	0.09-0.20	3.0-6.0	0.2-1.0
	42-52	20-35	2.00-14.00	0.09-0.20	1.0-6.0	0.2-1.0
	52	---	---	---	---	---
Dunstone gravelly loam-----	0-4	12-20	12.00-20.00	0.12-0.17	0.6-1.0	5.0-8.0
	4-6	14-22	12.00-18.00	0.11-0.17	0.7-2.0	1.0-2.0
	6-10	15-27	4.00-13.00	0.10-0.20	0.7-3.0	1.0-2.0
	10-15	18-35	2.00-14.00	0.10-0.20	0.9-6.0	0.5-1.5
	15-37	---	---	---	---	---
	37	---	---	---	---	---
674:						
Chawanakee gravelly sandy loam-----	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-5	2-6	30.00-141.00	0.04-0.10	0.0-0.0	1.0-5.0
	5-11	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	11-19	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	19	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility		Organic matter
	In	Pct				um/sec	In/in	
685:								
Bosquejo taxadjunct, gravelly substratum-----	0-3	40-60		0.42-1.40	0.13-0.17	8.5-13.0	2.0-5.0	
	3-8	40-60		0.42-1.40	0.13-0.17	8.5-13.0	2.0-5.0	
	8-17	40-60		0.42-1.40	0.13-0.17	8.5-13.0	0.5-2.0	
	17-27	40-60		0.42-1.40	0.13-0.17	8.5-13.0	0.5-2.0	
	27-33	20-55		0.42-4.00	0.01-0.18	1.0-12.0	0.1-0.5	
	33-41	20-55		0.42-4.00	0.01-0.18	1.0-12.0	0.1-0.5	
	41-55	20-55		0.42-4.00	0.01-0.18	1.0-12.0	0.1-0.5	
	55-70	15-40		0.01-0.42	---	0.0-7.5	0.1-0.5	
	70-81	15-40		0.01-0.42	---	0.0-7.5	0.1-0.5	
686:								
Redsluff taxadjunct clay loam	0-4	27-35		1.40-4.00	0.17-0.21	3.0-6.0	2.0-5.0	
	4-10	27-45		0.42-4.00	0.11-0.21	3.0-9.0	0.5-2.0	
	10-21	27-45		0.42-4.00	0.11-0.21	3.0-9.0	0.5-2.0	
	21-32	27-45		0.42-4.00	0.11-0.21	3.0-9.0	0.5-2.0	
	32-42	27-45		0.42-4.00	0.11-0.21	3.0-9.0	0.5-2.0	
	42-53	2-36		1.40-141.00	0.01-0.20	0.0-6.0	0.1-0.5	
	53-68	2-36		1.40-141.00	0.01-0.20	0.0-6.0	0.1-0.5	
	68-75	2-36		1.40-141.00	0.01-0.20	0.0-6.0	0.1-0.5	
	75-80	---		---	---	---	---	
687:								
Xerorthents, shallow-----	0-2	18-35		1.40-14.00	0.08-0.21	2.0-6.0	2.0-6.0	
	2-5	23-42		1.40-5.00	0.07-0.21	2.0-8.0	0.4-4.0	
	5-8	23-42		1.40-5.00	0.07-0.21	2.0-8.0	0.4-4.0	
	8	---		---	---	---	---	
Typic Haploxeralfs gravelly loam-----	0-2	20-30		2.00-8.00	0.09-0.20	2.0-4.5	2.0-6.0	
	2-8	27-50		0.42-4.00	0.05-0.20	3.5-10.0	1.0-3.0	
	8-16	27-50		0.42-4.00	0.05-0.20	3.5-10.0	1.0-3.0	
	16-27	27-50		0.42-4.00	0.05-0.20	3.5-10.0	0.5-1.0	
	27-40	27-50		0.42-4.00	0.05-0.20	3.5-10.0	0.5-1.0	
	40	---		---	---	---	---	
700:								
Retsongulch very gravelly sandy loam-----	0-1	---		---	---	---	---	
	1-3	10-22		4.00-28.00	0.06-0.15	0.5-2.0	2.0-7.0	
	3-12	12-26		4.00-26.00	0.04-0.13	0.5-3.0	1.0-4.0	
	12-21	12-26		4.00-26.00	0.04-0.13	0.5-3.0	0.2-1.0	
	21-30	12-26		4.00-26.00	0.04-0.13	0.5-3.0	0.2-1.0	
	30	---		---	---	---	---	
Flumewall gravelly sandy loam-----	0-0.5	---		---	---	---	---	
	0.5-2	12-20		14.00-28.00	0.08-0.14	0.0-2.0	3.0-7.0	
	2-7	14-27		4.00-26.00	0.04-0.12	1.0-3.0	0.5-3.5	
	7-18	14-27		4.00-26.00	0.04-0.12	1.0-3.0	0.5-3.5	
	18	---		---	---	---	---	

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
701:						
Powellton gravelly loam-----	0-0.5	---	---	---	---	---
	0.5-2	---	---	---	---	---
	2-4	18-27	4.00-15.00	0.07-0.17	1.0-3.5	8.0-13
	4-9	22-35	2.00-6.00	0.12-0.21	2.0-6.0	0.5-7.0
	9-15	22-35	2.00-6.00	0.12-0.21	2.0-6.0	0.5-7.0
	15-24	22-35	2.00-6.00	0.12-0.21	2.0-6.0	0.5-7.0
	24-30	22-35	2.00-6.00	0.12-0.21	2.0-6.0	0.5-7.0
	30-41	17-30	3.00-9.00	0.12-0.21	1.0-4.5	0.1-0.5
	41-61	17-30	3.00-9.00	0.12-0.21	1.0-4.5	0.1-0.5
	61-83	17-30	3.00-9.00	0.12-0.21	1.0-4.5	0.1-0.5
Obstruction gravelly sandy loam-----	0-4	---	---	---	---	---
	4-7	10-20	7.00-28.00	0.05-0.15	0.0-2.0	4.0-8.0
	7-10	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	10-18	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	18-25	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	25-33	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	33-44	5-20	7.00-35.00	0.07-0.17	0.0-2.0	0.1-0.5
	44-64	5-20	7.00-35.00	0.07-0.17	0.0-2.0	0.1-0.5
	64-84	5-20	7.00-35.00	0.07-0.17	0.0-2.0	0.1-0.5
	84	---	---	---	---	---
702:						
Cerpone gravelly loam-----	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-4	16-22	6.00-9.00	0.10-0.15	1.0-2.0	4.0-8.0
	4-9	20-27	4.00-8.00	0.10-0.16	2.0-3.0	1.0-4.0
	9-17	20-27	4.00-8.00	0.10-0.16	2.0-3.0	1.0-4.0
	17-26	25-35	2.00-5.00	0.06-0.16	3.0-6.0	0.2-1.0
	26-41	25-35	2.00-5.00	0.06-0.16	3.0-6.0	0.2-1.0
	41-57	25-35	2.00-5.00	0.06-0.16	3.0-6.0	0.2-1.0
	57	---	---	---	---	---
Typic Haploxeralfs, magnesic, very gravelly loam-----	0-3	22-32	2.00-6.00	0.09-0.17	2.0-5.0	3.0-8.0
	3-7	27-45	1.00-4.00	0.03-0.17	3.0-9.0	0.5-4.0
	7-12	27-45	1.00-4.00	0.03-0.17	3.0-9.0	0.5-4.0
	12-18	27-45	1.00-4.00	0.03-0.17	3.0-9.0	0.5-4.0
	18-24	27-45	1.00-4.00	0.03-0.17	3.0-9.0	0.5-4.0
	24-32	35-50	0.80-2.00	0.03-0.15	6.0-10.5	0.1-1.0
	32-42	35-50	0.80-2.00	0.03-0.15	6.0-10.5	0.1-1.0
	42-54	35-50	0.80-2.00	0.03-0.15	6.0-10.5	0.1-1.0
	54	---	---	---	---	---
Earlral very gravelly loam----	0-3	20-27	4.00-14.00	0.08-0.13	2.0-4.0	4.0-8.0
	3-7	30-40	1.40-4.00	0.03-0.13	4.0-8.0	0.5-4.0
	7-14	30-40	1.40-4.00	0.03-0.13	4.0-8.0	0.5-4.0
	14	---	---	---	---	---
703:						
Cerpone gravelly loam-----	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-4	16-22	6.00-9.00	0.10-0.15	1.0-2.0	4.0-8.0
	4-9	20-27	4.00-8.00	0.10-0.16	2.0-3.0	1.0-4.0
	9-17	20-27	4.00-8.00	0.10-0.16	2.0-3.0	1.0-4.0
	17-26	25-35	2.00-5.00	0.06-0.16	3.0-6.0	0.2-1.0
	26-41	25-35	2.00-5.00	0.06-0.16	3.0-6.0	0.2-1.0
	41-57	25-35	2.00-5.00	0.06-0.16	3.0-6.0	0.2-1.0
	57	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility		Organic matter
	In	Pct				um/sec	In/in	
703:								
Typic Haploxeralfs, magnesian, very gravelly loam-----	0-3	22-32		2.00-6.00	0.09-0.17	2.0-5.0	3.0-8.0	
	3-7	27-45		1.00-4.00	0.03-0.17	3.0-9.0	0.5-4.0	
	7-12	27-45		1.00-4.00	0.03-0.17	3.0-9.0	0.5-4.0	
	12-18	27-45		1.00-4.00	0.03-0.17	3.0-9.0	0.5-4.0	
	18-24	27-45		1.00-4.00	0.03-0.17	3.0-9.0	0.5-4.0	
	24-32	35-50		0.80-2.00	0.03-0.15	6.0-10.5	0.1-1.0	
	32-42	35-50		0.80-2.00	0.03-0.15	6.0-10.5	0.1-1.0	
	42-54	35-50		0.80-2.00	0.03-0.15	6.0-10.5	0.1-1.0	
	54	---		---	---	---	---	
Earlal very gravelly loam----	0-3	20-27		4.00-14.00	0.08-0.13	2.0-4.0	4.0-8.0	
	3-7	30-40		1.40-4.00	0.03-0.13	4.0-8.0	0.5-4.0	
	7-14	30-40		1.40-4.00	0.03-0.13	4.0-8.0	0.5-4.0	
	14	---		---	---	---	---	
Rock outcrop, serpentinite.								
704:								
Typic Haploxeralfs, magnesian, very gravelly loam-----	0-3	22-32		2.00-6.00	0.09-0.17	2.0-5.0	3.0-8.0	
	3-7	27-45		1.00-4.00	0.03-0.17	3.0-9.0	0.5-4.0	
	7-12	27-45		1.00-4.00	0.03-0.17	3.0-9.0	0.5-4.0	
	12-18	27-45		1.00-4.00	0.03-0.17	3.0-9.0	0.5-4.0	
	18-24	27-45		1.00-4.00	0.03-0.17	3.0-9.0	0.5-4.0	
	24-32	35-50		0.80-2.00	0.03-0.15	6.0-10.5	0.1-1.0	
	32-42	35-50		0.80-2.00	0.03-0.15	6.0-10.5	0.1-1.0	
	42-54	35-50		0.80-2.00	0.03-0.15	6.0-10.5	0.1-1.0	
	54	---		---	---	---	---	
Earlal very gravelly loam----	0-3	20-27		4.00-14.00	0.08-0.13	2.0-4.0	4.0-8.0	
	3-7	30-40		1.40-4.00	0.03-0.13	4.0-8.0	0.5-4.0	
	7-14	30-40		1.40-4.00	0.03-0.13	4.0-8.0	0.5-4.0	
	14	---		---	---	---	---	
Cerpone gravelly loam-----	0-1	---		---	---	---	---	
	1-2	---		---	---	---	---	
	2-4	16-22		6.00-9.00	0.10-0.15	1.0-2.0	4.0-8.0	
	4-9	20-27		4.00-8.00	0.10-0.16	2.0-3.0	1.0-4.0	
	9-17	20-27		4.00-8.00	0.10-0.16	2.0-3.0	1.0-4.0	
	17-26	25-35		2.00-5.00	0.06-0.16	3.0-6.0	0.2-1.0	
	26-41	25-35		2.00-5.00	0.06-0.16	3.0-6.0	0.2-1.0	
	41-57	25-35		2.00-5.00	0.06-0.16	3.0-6.0	0.2-1.0	
	57	---		---	---	---	---	
Rock outcrop, serpentinite.								
705:								
Typic Haploxeralfs, magnesian, very gravelly loam-----	0-3	22-32		2.00-6.00	0.09-0.17	2.0-5.0	3.0-8.0	
	3-7	27-45		1.00-4.00	0.03-0.17	3.0-9.0	0.5-4.0	
	7-12	27-45		1.00-4.00	0.03-0.17	3.0-9.0	0.5-4.0	
	12-18	27-45		1.00-4.00	0.03-0.17	3.0-9.0	0.5-4.0	
	18-24	27-45		1.00-4.00	0.03-0.17	3.0-9.0	0.5-4.0	
	24-32	35-50		0.80-2.00	0.03-0.15	6.0-10.5	0.1-1.0	
	32-42	35-50		0.80-2.00	0.03-0.15	6.0-10.5	0.1-1.0	
	42-54	35-50		0.80-2.00	0.03-0.15	6.0-10.5	0.1-1.0	
	54	---		---	---	---	---	

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility		Organic matter
	In	Pct				um/sec	In/in	
705:								
Earlal very gravelly loam----	0-3	20-27		4.00-14.00	0.08-0.13	2.0-4.0	4.0-8.0	
	3-7	30-40		1.40-4.00	0.03-0.13	4.0-8.0	0.5-4.0	
	7-14	30-40		1.40-4.00	0.03-0.13	4.0-8.0	0.5-4.0	
	14	---		---	---	---	---	
Cerpone gravelly loam-----	0-1	---		---	---	---	---	
	1-2	---		---	---	---	---	
	2-4	16-22		6.00-9.00	0.10-0.15	1.0-2.0	4.0-8.0	
	4-9	20-27		4.00-8.00	0.10-0.16	2.0-3.0	1.0-4.0	
	9-17	20-27		4.00-8.00	0.10-0.16	2.0-3.0	1.0-4.0	
	17-26	25-35		2.00-5.00	0.06-0.16	3.0-6.0	0.2-1.0	
	26-41	25-35		2.00-5.00	0.06-0.16	3.0-6.0	0.2-1.0	
	41-57	25-35		2.00-5.00	0.06-0.16	3.0-6.0	0.2-1.0	
	57	---		---	---	---	---	
Rock outcrop, serpentinite.								
711:								
Dixmine very gravelly loam---	0-1	---		---	---	---	---	
	1-2	---		---	---	---	---	
	2-6	18-27		4.00-8.00	0.08-0.15	1.0-3.0	4.0-8.0	
	6-11	20-30		3.00-7.00	0.07-0.18	2.0-4.5	2.0-5.0	
	11-17	20-30		3.00-7.00	0.07-0.18	2.0-4.5	2.0-5.0	
	17-30	27-35		2.00-4.00	0.06-0.14	3.0-6.0	0.2-2.0	
	30-41	27-35		2.00-4.00	0.06-0.14	3.0-6.0	0.2-2.0	
	41-54	27-35		2.00-4.00	0.06-0.14	3.0-6.0	0.2-2.0	
	54	---		---	---	---	---	
Toadtown loam-----	0-2	---		---	---	---	---	
	2-3	---		---	---	---	---	
	3-5	20-27		4.00-14.00	0.09-0.17	2.0-3.5	10-15	
	5-8	25-35		3.00-14.00	0.12-0.20	3.0-6.0	3.0-8.0	
	8-13	25-35		3.00-14.00	0.12-0.20	3.0-6.0	3.0-8.0	
	13-18	35-45		1.00-8.00	0.10-0.19	6.0-9.0	0.8-3.0	
	18-27	35-45		1.00-8.00	0.10-0.19	6.0-9.0	0.8-3.0	
	27-51	18-35		2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3	
	51-65	18-35		2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3	
	65-75	18-35		2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3	
	75-79	---		---	---	---	0.1-0.3	
712:								
Dixmine very gravelly loam---	0-1	---		---	---	---	---	
	1-2	---		---	---	---	---	
	2-6	18-27		4.00-8.00	0.08-0.15	1.0-3.0	4.0-8.0	
	6-11	20-30		3.00-7.00	0.07-0.18	2.0-4.5	2.0-5.0	
	11-17	20-30		3.00-7.00	0.07-0.18	2.0-4.5	2.0-5.0	
	17-30	27-35		2.00-4.00	0.06-0.14	3.0-6.0	0.2-2.0	
	30-41	27-35		2.00-4.00	0.06-0.14	3.0-6.0	0.2-2.0	
	41-54	27-35		2.00-4.00	0.06-0.14	3.0-6.0	0.2-2.0	
	54	---		---	---	---	---	

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility		Organic matter
	In	Pct				um/sec	In/in	
712:								
Toadtown loam-----	0-2	---	---	---	---	---	---	---
	2-3	---	---	---	---	---	---	---
	3-5	20-27	4.00-14.00	0.09-0.17	2.0-3.5	10-15		
	5-8	25-35	3.00-14.00	0.12-0.20	3.0-6.0	3.0-8.0		
	8-13	25-35	3.00-14.00	0.12-0.20	3.0-6.0	3.0-8.0		
	13-18	35-45	1.00-8.00	0.10-0.19	6.0-9.0	0.8-3.0		
	18-27	35-45	1.00-8.00	0.10-0.19	6.0-9.0	0.8-3.0		
	27-51	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3		
	51-65	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3		
	65-75	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3		
	75-79	---	---	---	---	0.1-0.3		
713:								
Dixmine very gravelly loam---	0-1	---	---	---	---	---	---	---
	1-2	---	---	---	---	---	---	---
	2-6	18-27	4.00-8.00	0.08-0.15	1.0-3.0	4.0-8.0		
	6-11	20-30	3.00-7.00	0.07-0.18	2.0-4.5	2.0-5.0		
	11-17	20-30	3.00-7.00	0.07-0.18	2.0-4.5	2.0-5.0		
	17-30	27-35	2.00-4.00	0.06-0.14	3.0-6.0	0.2-2.0		
	30-41	27-35	2.00-4.00	0.06-0.14	3.0-6.0	0.2-2.0		
	41-54	27-35	2.00-4.00	0.06-0.14	3.0-6.0	0.2-2.0		
	54	---	---	---	---	---	---	---
Toadtown loam-----	0-2	---	---	---	---	---	---	---
	2-3	---	---	---	---	---	---	---
	3-5	20-27	4.00-14.00	0.09-0.17	2.0-3.5	10-15		
	5-8	25-35	3.00-14.00	0.12-0.20	3.0-6.0	3.0-8.0		
	8-13	25-35	3.00-14.00	0.12-0.20	3.0-6.0	3.0-8.0		
	13-18	35-45	1.00-8.00	0.10-0.19	6.0-9.0	0.8-3.0		
	18-27	35-45	1.00-8.00	0.10-0.19	6.0-9.0	0.8-3.0		
	27-51	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3		
	51-65	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3		
	65-75	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3		
	75-79	---	---	---	---	0.1-0.3		
714:								
Dixmine very gravelly loam---	0-1	---	---	---	---	---	---	---
	1-2	---	---	---	---	---	---	---
	2-6	18-27	4.00-8.00	0.08-0.15	1.0-3.0	4.0-8.0		
	6-11	20-30	3.00-7.00	0.07-0.18	2.0-4.5	2.0-5.0		
	11-17	20-30	3.00-7.00	0.07-0.18	2.0-4.5	2.0-5.0		
	17-30	27-35	2.00-4.00	0.06-0.14	3.0-6.0	0.2-2.0		
	30-41	27-35	2.00-4.00	0.06-0.14	3.0-6.0	0.2-2.0		
	41-54	27-35	2.00-4.00	0.06-0.14	3.0-6.0	0.2-2.0		
	54	---	---	---	---	---	---	---
Toadtown loam-----	0-2	---	---	---	---	---	---	---
	2-3	---	---	---	---	---	---	---
	3-5	20-27	4.00-14.00	0.09-0.17	2.0-3.5	10-15		
	5-8	25-35	3.00-14.00	0.12-0.20	3.0-6.0	3.0-8.0		
	8-13	25-35	3.00-14.00	0.12-0.20	3.0-6.0	3.0-8.0		
	13-18	35-45	1.00-8.00	0.10-0.19	6.0-9.0	0.8-3.0		
	18-27	35-45	1.00-8.00	0.10-0.19	6.0-9.0	0.8-3.0		
	27-51	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3		
	51-65	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3		
	65-75	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3		
	75-79	---	---	---	---	0.1-0.3		

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
715:						
Logtrain gravelly loam-----	0-1	---	---	---	---	---
	1-3	10-22	6.00-28.00	0.04-0.13	1.0-2.0	7.0-18
	3-9	12-27	3.00-26.00	0.02-0.13	1.0-3.0	2.0-7.0
	9-21	12-27	3.00-26.00	0.02-0.13	1.0-3.0	0.5-2.0
	21-38	12-27	3.00-26.00	0.02-0.13	1.0-3.0	0.5-2.0
	38-54	12-27	3.00-26.00	0.02-0.13	1.0-3.0	0.5-2.0
	54	---	---	---	---	---
Bottlehill very gravelly loam-----	0-0.5	---	---	---	---	---
	0.5-2	---	---	---	---	---
	2-4	10-20	8.00-28.00	0.04-0.11	0.0-2.0	10-20
	4-9	10-20	8.00-28.00	0.04-0.11	0.0-2.0	10-20
	9-13	15-27	4.00-21.00	0.03-0.12	1.0-3.0	1.5-10
	13-22	15-27	4.00-21.00	0.03-0.12	1.0-3.0	1.5-10
	22-33	18-35	1.40-9.00	0.03-0.10	1.0-6.0	0.5-3.0
	33	---	---	---	---	---
Walkermine very gravelly loam-----	0-1	---	---	---	---	---
	1-3	12-26	4.00-25.00	0.02-0.14	1.0-3.0	10-15
	3-12	12-26	4.00-25.00	0.02-0.14	1.0-3.0	1.0-6.0
	12	---	---	---	---	---
716:						
Griffgulch very gravelly silt loam-----	0-2	---	---	---	---	---
	2-3	---	---	---	---	---
	3-7	18-27	4.00-9.00	0.08-0.17	1.0-3.0	6.0-9.0
	7-11	27-35	2.00-4.00	0.06-0.15	3.0-6.0	3.0-7.0
	11-20	27-35	2.00-4.00	0.06-0.15	3.0-6.0	3.0-7.0
	20-33	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0
	33-47	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0
	47-58	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0
	58	---	---	---	---	---
Surnuf gravelly loam-----	0-1	---	---	---	---	---
	1-4	22-30	3.00-7.00	0.11-0.20	2.0-4.5	6.0-9.0
	4-9	27-40	1.40-4.00	0.12-0.21	3.5-7.5	2.0-6.0
	9-16	27-40	1.40-4.00	0.12-0.21	3.5-7.5	2.0-6.0
	16-27	35-55	1.40-2.00	0.08-0.19	6.0-9.0	0.5-2.0
	27-29	35-55	1.40-2.00	0.08-0.19	6.0-9.0	0.5-2.0
	29-56	35-55	1.40-2.00	0.05-0.17	6.0-9.0	0.2-1.0
	56-72	35-55	1.40-2.00	0.05-0.17	6.0-9.0	0.2-1.0
717:						
Griffgulch very gravelly silt loam-----	0-2	---	---	---	---	---
	2-3	---	---	---	---	---
	3-7	18-27	4.00-9.00	0.08-0.17	1.0-3.0	6.0-9.0
	7-11	27-35	2.00-4.00	0.06-0.15	3.0-6.0	3.0-7.0
	11-20	27-35	2.00-4.00	0.06-0.15	3.0-6.0	3.0-7.0
	20-33	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0
	33-47	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0
	47-58	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0
	---	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
720: Dystroxepts extremely gravelly loam-----	0-1	---	---	---	---	---
	1-4	12-27	4.00-30.00	0.05-0.12	1.0-3.0	2.0-6.0
	4-12	10-30	2.00-30.00	0.01-0.14	1.0-4.5	0.2-2.0
	12-22	10-30	2.00-30.00	0.01-0.14	1.0-4.5	0.2-2.0
	22-28	10-30	2.00-30.00	0.01-0.14	1.0-4.5	0.2-2.0
	28-38	10-30	2.00-30.00	0.01-0.14	1.0-4.5	0.2-2.0
	38	---	---	---	---	---
Haploxeralfs very gravelly loam-----	0-0.5	---	---	---	---	---
	0.5-4	17-27	4.00-30.00	0.05-0.16	1.0-3.0	2.0-8.0
	4-9	20-40	1.40-7.00	0.03-0.15	2.0-7.5	0.1-3.0
	9-13	20-40	1.40-7.00	0.03-0.15	2.0-7.5	0.1-3.0
	13-22	20-40	1.40-7.00	0.03-0.15	2.0-7.5	0.1-3.0
	22-31	20-40	1.40-7.00	0.03-0.15	2.0-7.5	0.1-3.0
	31-47	20-40	1.40-7.00	0.03-0.15	2.0-7.5	0.1-3.0
	47	---	---	---	---	---
Rock outcrop, metavolcanic.						
721: Haploxerands, granitic till, medial sandy loam-----	0-2	---	---	---	---	---
	2-5	4-8	14.00-42.00	0.02-0.11	0.0-0.0	5.0-15
	5-12	4-8	14.00-42.00	0.02-0.11	0.0-0.0	5.0-15
	12-22	3-6	14.00-42.00	0.02-0.09	0.0-0.0	3.0-7.0
	22-41	1-5	30.00-141.00	0.01-0.09	0.0-0.0	0.1-1.0
	41-55	1-5	30.00-141.00	0.01-0.09	0.0-0.0	0.1-1.0
	55-74	1-5	30.00-141.00	0.01-0.09	0.0-0.0	0.1-1.0
	74-87	1-5	30.00-141.00	0.01-0.09	0.0-0.0	0.1-1.0
722: Haploxerands, granitic till, medial sandy loam-----	0-2	---	---	---	---	---
	2-5	4-8	14.00-42.00	0.02-0.11	0.0-0.0	5.0-15
	5-12	4-8	14.00-42.00	0.02-0.11	0.0-0.0	5.0-15
	12-22	3-6	14.00-42.00	0.02-0.09	0.0-0.0	3.0-7.0
	22-41	1-5	30.00-141.00	0.01-0.09	0.0-0.0	0.1-1.0
	41-55	1-5	30.00-141.00	0.01-0.09	0.0-0.0	0.1-1.0
	55-74	1-5	30.00-141.00	0.01-0.09	0.0-0.0	0.1-1.0
	74-87	1-5	30.00-141.00	0.01-0.09	0.0-0.0	0.1-1.0
723: Haploxerands, granitic till, medial sandy loam-----	0-2	---	---	---	---	---
	2-5	4-8	14.00-42.00	0.02-0.11	0.0-0.0	5.0-15
	5-12	4-8	14.00-42.00	0.02-0.11	0.0-0.0	5.0-15
	12-22	3-6	14.00-42.00	0.02-0.09	0.0-0.0	3.0-7.0
	22-41	1-5	30.00-141.00	0.01-0.09	0.0-0.0	0.1-1.0
	41-55	1-5	30.00-141.00	0.01-0.09	0.0-0.0	0.1-1.0
	55-74	1-5	30.00-141.00	0.01-0.09	0.0-0.0	0.1-1.0
	74-87	1-5	30.00-141.00	0.01-0.09	0.0-0.0	0.1-1.0

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
724: Haploxerands, volcanic till, cobble medial sandy loam----	0-2	---	---	---	---	---
	2-4	6-12	14.00-42.00	0.04-0.10	0.0-0.0	10-15
	4-17	8-14	14.00-42.00	0.03-0.10	0.0-0.0	5.0-10
	17-37	10-22	14.00-42.00	0.02-0.15	0.0-2.0	0.5-5.0
	37-41	10-22	14.00-42.00	0.02-0.15	0.0-2.0	0.5-5.0
	41-52	2-8	0.01-0.42	0.01-0.10	0.0-0.0	0.1-0.5
	52-80	2-8	0.01-0.42	0.01-0.10	0.0-0.0	0.1-0.5
725: Haploxerands, volcanic till, cobble medial sandy loam----	0-2	---	---	---	---	---
	2-4	6-12	14.00-42.00	0.04-0.10	0.0-0.0	10-15
	4-17	8-14	14.00-42.00	0.03-0.10	0.0-0.0	5.0-10
	17-37	10-22	14.00-42.00	0.02-0.15	0.0-2.0	0.5-5.0
	37-41	10-22	14.00-42.00	0.02-0.15	0.0-2.0	0.5-5.0
	41-52	2-8	0.01-0.42	0.01-0.10	0.0-0.0	0.1-0.5
	52-80	2-8	0.01-0.42	0.01-0.10	0.0-0.0	0.1-0.5
726: Haploxerands, volcanic till, cobble medial sandy loam----	0-2	---	---	---	---	---
	2-4	6-12	14.00-42.00	0.04-0.10	0.0-0.0	10-15
	4-17	8-14	14.00-42.00	0.03-0.10	0.0-0.0	5.0-10
	17-37	10-22	14.00-42.00	0.02-0.15	0.0-2.0	0.5-5.0
	37-41	10-22	14.00-42.00	0.02-0.15	0.0-2.0	0.5-5.0
	41-52	2-8	0.01-0.42	0.01-0.10	0.0-0.0	0.1-0.5
	52-80	2-8	0.01-0.42	0.01-0.10	0.0-0.0	0.1-0.5
727: Bonneyridge sandy loam-----	0-1	---	---	---	---	---
	1-3	5-15	14.00-42.00	0.11-0.12	0.0-1.0	2.0-8.0
	3-6	5-15	14.00-42.00	0.10-0.11	0.0-1.0	2.0-8.0
	6-16	5-18	14.00-42.00	0.09-0.10	0.0-1.0	0.6-6.0
	16-22	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0
	22-31	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0
	31-39	5-18	14.00-42.00	0.09-0.13	0.0-3.0	0.6-6.0
	39-56	5-10	42.00-141.00	0.06-0.09	0.0-3.0	0.1-0.6
	56-76	5-10	42.00-141.00	0.05-0.09	0.0-3.0	0.1-0.6
728: Bonneyridge sandy loam-----	0-1	---	---	---	---	---
	1-3	5-15	14.00-42.00	0.11-0.12	0.0-1.0	2.0-8.0
	3-6	5-15	14.00-42.00	0.10-0.11	0.0-1.0	2.0-8.0
	6-16	5-18	14.00-42.00	0.09-0.10	0.0-1.0	0.6-6.0
	16-22	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0
	22-31	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0
	31-39	5-18	14.00-42.00	0.09-0.13	0.0-3.0	0.6-6.0
	39-56	5-10	42.00-141.00	0.06-0.09	0.0-3.0	0.1-0.6
	56-76	5-10	42.00-141.00	0.05-0.09	0.0-3.0	0.1-0.6
729: Bonneyridge sandy loam-----	0-1	---	---	---	---	---
	1-3	5-15	14.00-42.00	0.11-0.12	0.0-1.0	2.0-8.0
	3-6	5-15	14.00-42.00	0.10-0.11	0.0-1.0	2.0-8.0
	6-16	5-18	14.00-42.00	0.09-0.10	0.0-1.0	0.6-6.0
	16-22	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0
	22-31	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0
	31-39	5-18	14.00-42.00	0.09-0.13	0.0-3.0	0.6-6.0
	39-56	5-10	42.00-141.00	0.06-0.09	0.0-3.0	0.1-0.6
	56-76	5-10	42.00-141.00	0.05-0.09	0.0-3.0	0.1-0.6

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
730:						
Tusccoll gravelly loam-----	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-6	17-25	4.00-16.00	0.09-0.17	2.0-3.0	6.0-10
	6-14	20-39	1.40-8.00	0.08-0.21	2.0-7.0	2.0-6.0
	14-23	20-39	1.40-8.00	0.08-0.21	2.0-7.0	2.0-6.0
	23-33	20-39	1.40-8.00	0.08-0.21	2.0-7.0	0.5-2.0
	33-41	20-39	1.40-8.00	0.08-0.21	2.0-7.0	0.5-2.0
	41-49	20-39	1.40-8.00	0.08-0.21	2.0-7.0	0.5-2.0
	49-70	20-39	1.40-8.00	0.08-0.21	2.0-7.0	0.5-2.0
Schott very gravelly loam----	0-2	---	---	---	---	---
	2-6	15-25	4.00-21.00	0.07-0.16	1.0-3.0	6.0-10
	6-13	18-35	1.40-20.00	0.03-0.14	1.0-6.0	2.0-6.0
	13-22	18-35	1.40-20.00	0.03-0.14	1.0-6.0	2.0-6.0
	22-40	18-35	1.40-20.00	0.03-0.14	1.0-6.0	0.5-2.0
	40-50	18-35	1.40-20.00	0.03-0.14	1.0-6.0	0.5-2.0
	50	---	---	---	---	---
731:						
Tusccoll gravelly loam-----	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-6	17-25	4.00-16.00	0.09-0.17	2.0-3.0	6.0-10
	6-14	20-39	1.40-8.00	0.08-0.21	2.0-7.0	2.0-6.0
	14-23	20-39	1.40-8.00	0.08-0.21	2.0-7.0	2.0-6.0
	23-33	20-39	1.40-8.00	0.08-0.21	2.0-7.0	0.5-2.0
	33-41	20-39	1.40-8.00	0.08-0.21	2.0-7.0	0.5-2.0
	41-49	20-39	1.40-8.00	0.08-0.21	2.0-7.0	0.5-2.0
	49-70	20-39	1.40-8.00	0.08-0.21	2.0-7.0	0.5-2.0
Schott very gravelly loam----	0-2	---	---	---	---	---
	2-6	15-25	4.00-21.00	0.07-0.16	1.0-3.0	6.0-10
	6-13	18-35	1.40-20.00	0.03-0.14	1.0-6.0	2.0-6.0
	13-22	18-35	1.40-20.00	0.03-0.14	1.0-6.0	2.0-6.0
	22-40	18-35	1.40-20.00	0.03-0.14	1.0-6.0	0.5-2.0
	40-50	18-35	1.40-20.00	0.03-0.14	1.0-6.0	0.5-2.0
	50	---	---	---	---	---
732:						
Bonepile taxadjunct, duripan substratum-----	0-1	---	---	---	---	---
	1-4	10-20	14.00-23.00	0.02-0.12	0.0-2.0	10-15
	4-7	10-20	14.00-23.00	0.02-0.12	0.0-2.0	10-15
	7-15	10-20	7.00-23.00	0.02-0.12	0.0-2.0	5.0-10
	15-30	10-25	3.00-23.00	0.02-0.11	0.0-3.0	1.0-5.0
	30-37	10-25	3.00-23.00	0.02-0.11	0.0-3.0	1.0-5.0
	37-47	15-35	2.00-21.00	0.02-0.09	1.0-6.0	0.5-3.0
	47	---	---	---	---	---
733:						
Haploxeralfs, terrace, gravelly loam-----	0-5	15-26	4.00-20.00	0.10-0.18	1.0-3.0	1.0-5.0
	5-11	18-35	1.40-7.00	0.02-0.20	2.0-6.0	0.2-2.0
	11-18	18-35	1.40-7.00	0.02-0.20	2.0-6.0	0.2-2.0
	18-32	18-35	1.40-7.00	0.02-0.20	2.0-6.0	0.2-2.0
	32-48	18-35	1.40-7.00	0.02-0.20	2.0-6.0	0.2-2.0
	48-63	18-35	1.40-7.00	0.02-0.20	2.0-6.0	0.2-2.0

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
734:						
Haploxerands medial sandy loam-----	0-0.5	---	---	---	---	---
	0.5-2	3-18	14.00-42.00	0.07-0.12	0.0-0.0	5.0-10
	2-5	3-18	14.00-42.00	0.07-0.12	0.0-0.0	5.0-10
	5-12	1-20	14.00-141.00	0.03-0.13	0.0-0.0	0.1-3.0
	12-23	1-20	14.00-141.00	0.03-0.13	0.0-0.0	0.1-3.0
	23-30	1-20	14.00-141.00	0.03-0.13	0.0-0.0	0.1-3.0
	30-42	1-20	14.00-141.00	0.03-0.13	0.0-0.0	0.1-3.0
	42-60	1-20	14.00-141.00	0.03-0.13	0.0-0.0	0.1-3.0
	60-80	1-20	14.00-141.00	0.03-0.13	0.0-0.0	0.1-3.0
Aquic Xerofluvents peaty very fine sandy loam-----	0-3	2-6	10.00-42.00	0.17-0.20	0.0-0.0	10-15
	3-7	2-6	10.00-42.00	0.17-0.20	0.0-0.0	10-15
	7-16	2-6	30.00-141.00	0.03-0.09	0.0-0.0	0.1-1.0
	16-19	2-6	10.00-42.00	0.12-0.20	0.0-0.0	6.0-15
	19-23	2-6	30.00-141.00	0.03-0.09	0.0-0.0	0.1-1.0
	23-35	2-6	10.00-42.00	0.12-0.20	0.0-0.0	6.0-15
	35-49	2-6	30.00-141.00	0.03-0.09	0.0-0.0	0.1-1.0
	49-63	2-6	10.00-42.00	0.12-0.20	0.0-0.0	6.0-15
	63-71	2-6	30.00-141.00	0.03-0.09	0.0-0.0	0.1-1.0
	71-80	2-6	10.00-42.00	0.12-0.20	0.0-0.0	6.0-15
735:						
Fluvaquents, loamy-----	0-0.5	---	---	---	---	---
	0.5-2	12-27	4.00-25.00	0.12-0.18	1.0-3.0	2.0-5.0
	2-9	12-27	4.00-25.00	0.12-0.18	1.0-3.0	2.0-5.0
	9-18	12-27	2.00-25.00	0.10-0.20	1.0-3.0	1.0-3.0
	18-24	12-27	2.00-25.00	0.10-0.20	1.0-3.0	1.0-3.0
	24-27	10-20	4.00-35.00	0.10-0.18	0.5-2.0	0.2-1.5
	27-37	10-20	4.00-35.00	0.10-0.18	0.5-2.0	0.2-1.5
	37-45	12-27	4.00-30.00	0.10-0.18	1.0-3.0	2.0-6.0
	45-65	12-27	4.00-30.00	0.10-0.18	1.0-3.0	2.0-6.0
	65-70	12-27	4.00-30.00	0.10-0.18	1.0-3.0	2.0-6.0
	70-85	5-30	2.00-40.00	0.07-0.18	0.2-4.0	0.2-1.5
801:						
Obstruction gravelly sandy loam-----	0-4	---	---	---	---	---
	4-7	10-20	7.00-28.00	0.05-0.15	0.0-2.0	4.0-8.0
	7-10	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	10-18	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	18-25	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	25-33	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	33-44	5-20	7.00-35.00	0.07-0.17	0.0-2.0	0.1-0.5
	44-64	5-20	7.00-35.00	0.07-0.17	0.0-2.0	0.1-0.5
	64-84	5-20	7.00-35.00	0.07-0.17	0.0-2.0	0.1-0.5
	84	---	---	---	---	---
802:						
Obskel very gravelly sandy loam-----	0-0.5	---	---	---	---	---
	0.5-1	---	---	---	---	---
	1-4	8-16	14.00-30.00	0.05-0.11	0.0-1.0	4.0-8.0
	4-9	10-24	4.00-28.00	0.03-0.16	0.0-3.0	0.3-4.0
	9-19	10-24	4.00-28.00	0.03-0.16	0.0-3.0	0.3-4.0
	19-30	10-24	4.00-28.00	0.03-0.16	0.0-3.0	0.3-4.0
	30-56	10-24	4.00-28.00	0.03-0.16	0.0-3.0	0.3-4.0
	56	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
802: Obstruction gravelly sandy loam-----	0-4	---	---	---	---	---
	4-7	10-20	7.00-28.00	0.05-0.15	0.0-2.0	4.0-8.0
	7-10	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	10-18	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	18-25	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	25-33	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	33-44	5-20	7.00-35.00	0.07-0.17	0.0-2.0	0.1-0.5
	44-64	5-20	7.00-35.00	0.07-0.17	0.0-2.0	0.1-0.5
	64-84	5-20	7.00-35.00	0.07-0.17	0.0-2.0	0.1-0.5
	84	---	---	---	---	---
803: Obskel very gravelly sandy loam-----	0-0.5	---	---	---	---	---
	0.5-1	---	---	---	---	---
	1-4	8-16	14.00-30.00	0.05-0.11	0.0-1.0	4.0-8.0
	4-9	10-24	4.00-28.00	0.03-0.16	0.0-3.0	0.3-4.0
	9-19	10-24	4.00-28.00	0.03-0.16	0.0-3.0	0.3-4.0
	19-30	10-24	4.00-28.00	0.03-0.16	0.0-3.0	0.3-4.0
	30-56	10-24	4.00-28.00	0.03-0.16	0.0-3.0	0.3-4.0
	56	---	---	---	---	---
Obstruction gravelly sandy loam-----	0-4	---	---	---	---	---
	4-7	10-20	7.00-28.00	0.05-0.15	0.0-2.0	4.0-8.0
	7-10	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	10-18	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	18-25	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	25-33	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	33-44	5-20	7.00-35.00	0.07-0.17	0.0-2.0	0.1-0.5
	44-64	5-20	7.00-35.00	0.07-0.17	0.0-2.0	0.1-0.5
	64-84	5-20	7.00-35.00	0.07-0.17	0.0-2.0	0.1-0.5
	84	---	---	---	---	---
804: Obskel very gravelly sandy loam-----	0-0.5	---	---	---	---	---
	0.5-1	---	---	---	---	---
	1-4	8-16	14.00-30.00	0.05-0.11	0.0-1.0	4.0-8.0
	4-9	10-24	4.00-28.00	0.03-0.16	0.0-3.0	0.3-4.0
	9-19	10-24	4.00-28.00	0.03-0.16	0.0-3.0	0.3-4.0
	19-30	10-24	4.00-28.00	0.03-0.16	0.0-3.0	0.3-4.0
	30-56	10-24	4.00-28.00	0.03-0.16	0.0-3.0	0.3-4.0
	56	---	---	---	---	---
Obstruction gravelly sandy loam-----	0-4	---	---	---	---	---
	4-7	10-20	7.00-28.00	0.05-0.15	0.0-2.0	4.0-8.0
	7-10	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	10-18	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	18-25	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	25-33	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	33-44	5-20	7.00-35.00	0.07-0.17	0.0-2.0	0.1-0.5
	44-64	5-20	7.00-35.00	0.07-0.17	0.0-2.0	0.1-0.5
	64-84	5-20	7.00-35.00	0.07-0.17	0.0-2.0	0.1-0.5
	84	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
807:						
Bottlehill very gravelly loam-----	0-0.5	---	---	---	---	---
	0.5-2	---	---	---	---	---
	2-4	10-20	8.00-28.00	0.04-0.11	0.0-2.0	10-20
	4-9	10-20	8.00-28.00	0.04-0.11	0.0-2.0	10-20
	9-13	15-27	4.00-21.00	0.03-0.12	1.0-3.0	1.5-10
	13-22	15-27	4.00-21.00	0.03-0.12	1.0-3.0	1.5-10
	22-33	18-35	1.40-9.00	0.03-0.10	1.0-6.0	0.5-3.0
	33	---	---	---	---	---
Logtrain gravelly loam-----	0-1	---	---	---	---	---
	1-3	10-22	6.00-28.00	0.04-0.13	1.0-2.0	7.0-18
	3-9	12-27	3.00-26.00	0.02-0.13	1.0-3.0	2.0-7.0
	9-21	12-27	3.00-26.00	0.02-0.13	1.0-3.0	0.5-2.0
	21-38	12-27	3.00-26.00	0.02-0.13	1.0-3.0	0.5-2.0
	38-54	12-27	3.00-26.00	0.02-0.13	1.0-3.0	0.5-2.0
	54	---	---	---	---	---
Walkermine very gravelly loam-----	0-1	---	---	---	---	---
	1-3	12-26	4.00-25.00	0.02-0.14	1.0-3.0	10-15
	3-12	12-26	4.00-25.00	0.02-0.14	1.0-3.0	1.0-6.0
	12	---	---	---	---	---
808:						
Bottlehill very gravelly loam-----	0-0.5	---	---	---	---	---
	0.5-2	---	---	---	---	---
	2-4	10-20	8.00-28.00	0.04-0.11	0.0-2.0	10-20
	4-9	10-20	8.00-28.00	0.04-0.11	0.0-2.0	10-20
	9-13	15-27	4.00-21.00	0.03-0.12	1.0-3.0	1.5-10
	13-22	15-27	4.00-21.00	0.03-0.12	1.0-3.0	1.5-10
	22-33	18-35	1.40-9.00	0.03-0.10	1.0-6.0	0.5-3.0
	33	---	---	---	---	---
Walkermine very gravelly loam-----	0-1	---	---	---	---	---
	1-3	12-26	4.00-25.00	0.02-0.14	1.0-3.0	10-15
	3-12	12-26	4.00-25.00	0.02-0.14	1.0-3.0	1.0-6.0
	12	---	---	---	---	---
Logtrain gravelly loam-----	0-1	---	---	---	---	---
	1-3	10-22	6.00-28.00	0.04-0.13	1.0-2.0	7.0-18
	3-9	12-27	3.00-26.00	0.02-0.13	1.0-3.0	2.0-7.0
	9-21	12-27	3.00-26.00	0.02-0.13	1.0-3.0	0.5-2.0
	21-38	12-27	3.00-26.00	0.02-0.13	1.0-3.0	0.5-2.0
	38-54	12-27	3.00-26.00	0.02-0.13	1.0-3.0	0.5-2.0
	54	---	---	---	---	---
809:						
Walkermine very gravelly loam-----	0-1	---	---	---	---	---
	1-3	12-26	4.00-25.00	0.02-0.14	1.0-3.0	10-15
	3-12	12-26	4.00-25.00	0.02-0.14	1.0-3.0	1.0-6.0
	12	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
809:						
Bottlehill very gravelly loam-----	0-0.5	---	---	---	---	---
	0.5-2	---	---	---	---	---
	2-4	10-20	8.00-28.00	0.04-0.11	0.0-2.0	10-20
	4-9	10-20	8.00-28.00	0.04-0.11	0.0-2.0	10-20
	9-13	15-27	4.00-21.00	0.03-0.12	1.0-3.0	1.5-10
	13-22	15-27	4.00-21.00	0.03-0.12	1.0-3.0	1.5-10
	22-33	18-35	1.40-9.00	0.03-0.10	1.0-6.0	0.5-3.0
	33	---	---	---	---	---
Logtrain gravelly loam-----	0-1	---	---	---	---	---
	1-3	10-22	6.00-28.00	0.04-0.13	1.0-2.0	7.0-18
	3-9	12-27	3.00-26.00	0.02-0.13	1.0-3.0	2.0-7.0
	9-21	12-27	3.00-26.00	0.02-0.13	1.0-3.0	0.5-2.0
	21-38	12-27	3.00-26.00	0.02-0.13	1.0-3.0	0.5-2.0
	38-54	12-27	3.00-26.00	0.02-0.13	1.0-3.0	0.5-2.0
	54	---	---	---	---	---
Rock outcrop, metavolcanic.						
810:						
Dixmine very gravelly loam---	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-6	18-27	4.00-8.00	0.08-0.15	1.0-3.0	4.0-8.0
	6-11	20-30	3.00-7.00	0.07-0.18	2.0-4.5	2.0-5.0
	11-17	20-30	3.00-7.00	0.07-0.18	2.0-4.5	2.0-5.0
	17-30	27-35	2.00-4.00	0.06-0.14	3.0-6.0	0.2-2.0
	30-41	27-35	2.00-4.00	0.06-0.14	3.0-6.0	0.2-2.0
	41-54	27-35	2.00-4.00	0.06-0.14	3.0-6.0	0.2-2.0
	54	---	---	---	---	---
Mac gravelly loam-----	0-1	---	---	---	---	---
	1-4	15-25	5.00-20.00	0.07-0.15	1.0-4.0	5.0-12
	4-9	17-35	2.00-18.00	0.07-0.19	1.0-6.0	2.0-7.0
	9-15	17-35	2.00-18.00	0.07-0.19	1.0-6.0	1.0-4.0
	15-23	17-35	2.00-18.00	0.07-0.19	1.0-6.0	0.5-2.0
	23-37	16-27	2.60-9.00	0.03-0.14	1.0-4.0	0.5-2.0
	37	---	---	---	---	---
Spine very gravelly loam-----	0-1	---	---	---	---	---
	1-3	12-22	5.00-28.00	0.05-0.13	0.0-2.0	4.0-8.0
	3-9	15-35	2.00-26.00	0.03-0.15	1.0-6.0	0.5-2.0
	9-16	15-35	2.00-26.00	0.03-0.15	1.0-6.0	0.5-2.0
	16	---	---	---	---	---
811:						
Powellton gravelly loam-----	0-0.5	---	---	---	---	---
	0.5-2	---	---	---	---	---
	2-4	18-27	4.00-15.00	0.07-0.17	1.0-3.5	8.0-13
	4-9	22-35	2.00-6.00	0.12-0.21	2.0-6.0	0.5-7.0
	9-15	22-35	2.00-6.00	0.12-0.21	2.0-6.0	0.5-7.0
	15-24	22-35	2.00-6.00	0.12-0.21	2.0-6.0	0.5-7.0
	24-30	22-35	2.00-6.00	0.12-0.21	2.0-6.0	0.5-7.0
	30-41	17-30	3.00-9.00	0.12-0.21	1.0-4.5	0.1-0.5
	41-61	17-30	3.00-9.00	0.12-0.21	1.0-4.5	0.1-0.5
	61-83	17-30	3.00-9.00	0.12-0.21	1.0-4.5	0.1-0.5

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility		Organic matter
	In	Pct				um/sec	In/in	
811:								
Toadtown loam-----	0-2	---	---	---	---	---	---	---
	2-3	---	---	---	---	---	---	---
	3-5	20-27	4.00-14.00	0.09-0.17	2.0-3.5	10-15		
	5-8	25-35	3.00-14.00	0.12-0.20	3.0-6.0	3.0-8.0		
	8-13	25-35	3.00-14.00	0.12-0.20	3.0-6.0	3.0-8.0		
	13-18	35-45	1.00-8.00	0.10-0.19	6.0-9.0	0.8-3.0		
	18-27	35-45	1.00-8.00	0.10-0.19	6.0-9.0	0.8-3.0		
	27-51	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3		
	51-65	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3		
	65-75	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3		
	75-79	---	---	---	---	0.1-0.3		
812:								
Powellton gravelly loam-----	0-0.5	---	---	---	---	---		
	0.5-2	---	---	---	---	---		
	2-4	18-27	4.00-15.00	0.07-0.17	1.0-3.5	8.0-13		
	4-9	22-35	2.00-6.00	0.12-0.21	2.0-6.0	0.5-7.0		
	9-15	22-35	2.00-6.00	0.12-0.21	2.0-6.0	0.5-7.0		
	15-24	22-35	2.00-6.00	0.12-0.21	2.0-6.0	0.5-7.0		
	24-30	22-35	2.00-6.00	0.12-0.21	2.0-6.0	0.5-7.0		
	30-41	17-30	3.00-9.00	0.12-0.21	1.0-4.5	0.1-0.5		
	41-61	17-30	3.00-9.00	0.12-0.21	1.0-4.5	0.1-0.5		
	61-83	17-30	3.00-9.00	0.12-0.21	1.0-4.5	0.1-0.5		
Toadtown loam-----	0-2	---	---	---	---	---		
	2-3	---	---	---	---	---		
	3-5	20-27	4.00-14.00	0.09-0.17	2.0-3.5	10-15		
	5-8	25-35	3.00-14.00	0.12-0.20	3.0-6.0	3.0-8.0		
	8-13	25-35	3.00-14.00	0.12-0.20	3.0-6.0	3.0-8.0		
	13-18	35-45	1.00-8.00	0.10-0.19	6.0-9.0	0.8-3.0		
	18-27	35-45	1.00-8.00	0.10-0.19	6.0-9.0	0.8-3.0		
	27-51	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3		
	51-65	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3		
	65-75	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3		
	75-79	---	---	---	---	0.1-0.3		
813:								
Powellton gravelly loam-----	0-0.5	---	---	---	---	---		
	0.5-2	---	---	---	---	---		
	2-4	18-27	4.00-15.00	0.07-0.17	1.0-3.5	8.0-13		
	4-9	22-35	2.00-6.00	0.12-0.21	2.0-6.0	0.5-7.0		
	9-15	22-35	2.00-6.00	0.12-0.21	2.0-6.0	0.5-7.0		
	15-24	22-35	2.00-6.00	0.12-0.21	2.0-6.0	0.5-7.0		
	24-30	22-35	2.00-6.00	0.12-0.21	2.0-6.0	0.5-7.0		
	30-41	17-30	3.00-9.00	0.12-0.21	1.0-4.5	0.1-0.5		
	41-61	17-30	3.00-9.00	0.12-0.21	1.0-4.5	0.1-0.5		
	61-83	17-30	3.00-9.00	0.12-0.21	1.0-4.5	0.1-0.5		
Toadtown loam-----	0-2	---	---	---	---	---		
	2-3	---	---	---	---	---		
	3-5	20-27	4.00-14.00	0.09-0.17	2.0-3.5	10-15		
	5-8	25-35	3.00-14.00	0.12-0.20	3.0-6.0	3.0-8.0		
	8-13	25-35	3.00-14.00	0.12-0.20	3.0-6.0	3.0-8.0		
	13-18	35-45	1.00-8.00	0.10-0.19	6.0-9.0	0.8-3.0		
	18-27	35-45	1.00-8.00	0.10-0.19	6.0-9.0	0.8-3.0		
	27-51	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3		
	51-65	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3		
	65-75	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3		
	75-79	---	---	---	---	0.1-0.3		

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
820: Lydon very gravelly medial coarse sandy loam-----	0-0.5	---	---	---	---	---
	0.5-1	---	---	---	---	---
	1-3	10-18	14.00-28.00	0.03-0.10	0.0-1.0	10-18
	3-6	10-18	14.00-28.00	0.02-0.11	0.0-1.0	3.0-13
	6-13	10-18	14.00-28.00	0.02-0.11	0.0-1.0	3.0-13
	13-21	12-20	14.00-26.00	0.01-0.09	0.0-1.0	1.0-5.0
	21-35	12-20	14.00-26.00	0.01-0.09	0.0-1.0	1.0-5.0
	35	---	---	---	---	---
Rock outcrop, mudflow breccia.						
821: Lydon very gravelly medial coarse sandy loam-----	0-0.5	---	---	---	---	---
	0.5-1	---	---	---	---	---
	1-3	10-18	14.00-28.00	0.03-0.10	0.0-1.0	10-18
	3-6	10-18	14.00-28.00	0.02-0.11	0.0-1.0	3.0-13
	6-13	10-18	14.00-28.00	0.02-0.11	0.0-1.0	3.0-13
	13-21	12-20	14.00-26.00	0.01-0.09	0.0-1.0	1.0-5.0
	21-35	12-20	14.00-26.00	0.01-0.09	0.0-1.0	1.0-5.0
	35	---	---	---	---	---
Rock outcrop, mudflow breccia.						
822: Bonpile gravelly medial loam	0-1	---	---	---	---	---
	1-3	10-20	8.00-28.00	0.08-0.15	0.0-1.0	10-15
	3-9	10-20	8.00-28.00	0.08-0.15	0.0-1.0	10-15
	9-18	10-20	8.00-28.00	0.08-0.15	0.0-1.0	5.0-10
	18-30	12-20	7.00-28.00	0.05-0.14	0.0-1.0	3.0-5.0
	30-44	15-25	4.00-18.00	0.03-0.14	1.0-3.0	0.5-3.0
	44	---	---	---	---	---
823: Bonpile gravelly medial loam	0-1	---	---	---	---	---
	1-3	10-20	8.00-28.00	0.08-0.15	0.0-1.0	10-15
	3-9	10-20	8.00-28.00	0.08-0.15	0.0-1.0	10-15
	9-18	10-20	8.00-28.00	0.08-0.15	0.0-1.0	5.0-10
	18-30	12-20	7.00-28.00	0.05-0.14	0.0-1.0	3.0-5.0
	30-44	15-25	4.00-18.00	0.03-0.14	1.0-3.0	0.5-3.0
	44	---	---	---	---	---
824: Beecee very gravelly medial loam-----	0-0.5	---	---	---	---	---
	0.5-1	---	---	---	---	---
	1-4	8-20	8.00-28.00	0.04-0.13	0.0-1.0	10-15
	4-8	10-20	8.00-28.00	0.03-0.14	0.0-1.0	3.0-8.0
	8-15	10-20	8.00-28.00	0.03-0.14	0.0-1.0	3.0-8.0
	15-22	10-20	8.00-28.00	0.03-0.14	0.0-1.0	3.0-8.0
	22-31	12-22	7.00-26.00	0.03-0.14	0.0-2.0	1.0-3.0
	31-44	12-22	7.00-26.00	0.03-0.14	0.0-2.0	1.0-3.0
	44-59	18-27	2.70-16.00	0.03-0.14	1.0-3.0	0.2-1.0
	59-68	18-27	2.70-16.00	0.03-0.14	1.0-3.0	0.2-1.0
	68-86	18-27	2.70-16.00	0.03-0.14	1.0-3.0	0.2-1.0

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
825: Beecee very gravelly medial loam-----	0-0.5	---	---	---	---	---
	0.5-1	---	---	---	---	---
	1-4	8-20	8.00-28.00	0.04-0.13	0.0-1.0	10-15
	4-8	10-20	8.00-28.00	0.03-0.14	0.0-1.0	3.0-8.0
	8-15	10-20	8.00-28.00	0.03-0.14	0.0-1.0	3.0-8.0
	15-22	10-20	8.00-28.00	0.03-0.14	0.0-1.0	3.0-8.0
	22-31	12-22	7.00-26.00	0.03-0.14	0.0-2.0	1.0-3.0
	31-44	12-22	7.00-26.00	0.03-0.14	0.0-2.0	1.0-3.0
	44-59	18-27	2.70-16.00	0.03-0.14	1.0-3.0	0.2-1.0
	59-68	18-27	2.70-16.00	0.03-0.14	1.0-3.0	0.2-1.0
	68-86	18-27	2.70-16.00	0.03-0.14	1.0-3.0	0.2-1.0
Lydon very gravelly medial coarse sandy loam-----	0-0.5	---	---	---	---	---
	0.5-1	---	---	---	---	---
	1-3	10-18	14.00-28.00	0.03-0.10	0.0-1.0	10-18
	3-6	10-18	14.00-28.00	0.02-0.11	0.0-1.0	3.0-13
	6-13	10-18	14.00-28.00	0.02-0.11	0.0-1.0	3.0-13
	13-21	12-20	14.00-26.00	0.01-0.09	0.0-1.0	1.0-5.0
	21-35	12-20	14.00-26.00	0.01-0.09	0.0-1.0	1.0-5.0
	35	---	---	---	---	---
826: Redbone gravelly medial sandy loam-----	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-4	10-16	20.00-28.00	0.08-0.13	0.0-1.0	8.0-12
	4-7	12-18	9.00-26.00	0.08-0.15	0.0-1.0	2.0-6.0
	7-17	12-18	9.00-26.00	0.08-0.15	0.0-1.0	2.0-6.0
	17-28	15-22	4.00-21.00	0.06-0.12	1.0-2.0	0.5-2.0
	28-41	15-22	4.00-21.00	0.06-0.12	1.0-2.0	0.5-2.0
	41-54	15-22	4.00-21.00	0.06-0.12	1.0-2.0	0.5-2.0
	54	---	---	---	---	---
827: Redbone gravelly medial sandy loam-----	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-4	10-16	20.00-28.00	0.08-0.13	0.0-1.0	8.0-12
	4-7	12-18	9.00-26.00	0.08-0.15	0.0-1.0	2.0-6.0
	7-17	12-18	9.00-26.00	0.08-0.15	0.0-1.0	2.0-6.0
	17-28	15-22	4.00-21.00	0.06-0.12	1.0-2.0	0.5-2.0
	28-41	15-22	4.00-21.00	0.06-0.12	1.0-2.0	0.5-2.0
	41-54	15-22	4.00-21.00	0.06-0.12	1.0-2.0	0.5-2.0
	54	---	---	---	---	---
829: Paradiso loam-----	0-2	---	---	---	---	---
	2-4	17-27	4.00-9.00	0.14-0.18	1.0-3.0	5.0-15
	4-9	24-35	2.00-5.00	0.16-0.21	3.0-6.0	2.0-8.0
	9-16	25-40	1.40-5.00	0.16-0.21	3.0-7.0	1.0-5.0
	16-25	35-55	0.45-2.00	0.14-0.19	6.0-9.0	0.5-3.0
	25-45	35-55	0.45-2.00	0.14-0.19	6.0-9.0	0.5-3.0
	45-58	17-35	2.00-9.00	0.12-0.21	1.0-6.0	0.1-0.5
	58-74	17-35	2.00-9.00	0.12-0.21	1.0-6.0	0.1-0.5
	74-84	17-27	4.00-9.00	0.10-0.18	1.0-3.0	0.1-0.5

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
830: Paradiso loam-----	0-2	---	---	---	---	---
	2-4	17-27	4.00-9.00	0.14-0.18	1.0-3.0	5.0-15
	4-9	24-35	2.00-5.00	0.16-0.21	3.0-6.0	2.0-8.0
	9-16	25-40	1.40-5.00	0.16-0.21	3.0-7.0	1.0-5.0
	16-25	35-55	0.45-2.00	0.14-0.19	6.0-9.0	0.5-3.0
	25-45	35-55	0.45-2.00	0.14-0.19	6.0-9.0	0.5-3.0
	45-58	17-35	2.00-9.00	0.12-0.21	1.0-6.0	0.1-0.5
	58-74	17-35	2.00-9.00	0.12-0.21	1.0-6.0	0.1-0.5
	74-84	17-27	4.00-9.00	0.10-0.18	1.0-3.0	0.1-0.5
831: Surnuf gravelly loam-----	0-1	---	---	---	---	---
	1-4	22-30	3.00-7.00	0.11-0.20	2.0-4.5	6.0-9.0
	4-9	27-40	1.40-4.00	0.12-0.21	3.5-7.5	2.0-6.0
	9-16	27-40	1.40-4.00	0.12-0.21	3.5-7.5	2.0-6.0
	16-27	35-55	1.40-2.00	0.08-0.19	6.0-9.0	0.5-2.0
	27-29	35-55	1.40-2.00	0.08-0.19	6.0-9.0	0.5-2.0
	29-56	35-55	1.40-2.00	0.05-0.17	6.0-9.0	0.2-1.0
	56-72	35-55	1.40-2.00	0.05-0.17	6.0-9.0	0.2-1.0
Bigridge loam-----	0-1	---	---	---	---	---
	1-5	15-25	4.00-20.00	0.11-0.17	1.0-3.0	1.0-4.0
	5-9	19-30	3.00-14.00	0.11-0.16	1.0-4.5	1.0-4.0
	9-15	18-35	2.00-14.00	0.10-0.20	1.0-6.0	1.0-4.0
	15-20	18-35	2.00-14.00	0.10-0.20	1.0-6.0	0.5-1.0
	20-27	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.3-1.0
	27-36	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.1-1.0
	36-51	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.1-1.0
	51-62	---	---	---	---	---
Spine very gravelly loam-----	0-1	---	---	---	---	---
	1-3	12-22	5.00-28.00	0.05-0.13	0.0-2.0	4.0-8.0
	3-9	15-35	2.00-26.00	0.03-0.15	1.0-6.0	0.5-2.0
	9-16	15-35	2.00-26.00	0.03-0.15	1.0-6.0	0.5-2.0
	16	---	---	---	---	---
832: Surnuf gravelly loam-----	0-1	---	---	---	---	---
	1-4	22-30	3.00-7.00	0.11-0.20	2.0-4.5	6.0-9.0
	4-9	27-40	1.40-4.00	0.12-0.21	3.5-7.5	2.0-6.0
	9-16	27-40	1.40-4.00	0.12-0.21	3.5-7.5	2.0-6.0
	16-27	35-55	1.40-2.00	0.08-0.19	6.0-9.0	0.5-2.0
	27-29	35-55	1.40-2.00	0.08-0.19	6.0-9.0	0.5-2.0
	29-56	35-55	1.40-2.00	0.05-0.17	6.0-9.0	0.2-1.0
	56-72	35-55	1.40-2.00	0.05-0.17	6.0-9.0	0.2-1.0
Bigridge loam-----	0-1	---	---	---	---	---
	1-5	15-25	4.00-20.00	0.11-0.17	1.0-3.0	1.0-4.0
	5-9	19-30	3.00-14.00	0.11-0.16	1.0-4.5	1.0-4.0
	9-15	18-35	2.00-14.00	0.10-0.20	1.0-6.0	1.0-4.0
	15-20	18-35	2.00-14.00	0.10-0.20	1.0-6.0	0.5-1.0
	20-27	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.3-1.0
	27-36	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.1-1.0
	36-51	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.1-1.0
	51-62	---	---	---	---	---
Spine very gravelly loam-----	0-1	---	---	---	---	---
	1-3	12-22	5.00-28.00	0.05-0.13	0.0-2.0	4.0-8.0
	3-9	15-35	2.00-26.00	0.03-0.15	1.0-6.0	0.5-2.0
	9-16	15-35	2.00-26.00	0.03-0.15	1.0-6.0	0.5-2.0
	16	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
836:						
Hietanen gravelly loam-----	0-1	---	---	---	---	---
	1-3	18-27	4.00-7.00	0.10-0.19	2.0-4.0	5.0-12
	3-8	22-35	2.00-5.00	0.11-0.21	2.0-6.0	2.0-7.0
	8-19	22-35	2.00-5.00	0.11-0.21	2.0-6.0	1.0-4.0
	19-30	22-35	2.00-5.00	0.11-0.21	2.0-6.0	0.5-2.0
	30-53	22-35	2.00-5.00	0.11-0.21	2.0-6.0	0.5-2.0
	53	---	---	---	---	---
Mac gravelly loam-----	0-1	---	---	---	---	---
	1-4	15-25	5.00-20.00	0.07-0.15	1.0-4.0	5.0-12
	4-9	17-35	2.00-18.00	0.07-0.19	1.0-6.0	2.0-7.0
	9-15	17-35	2.00-18.00	0.07-0.19	1.0-6.0	1.0-4.0
	15-23	17-35	2.00-18.00	0.07-0.19	1.0-6.0	0.5-2.0
	23-37	16-27	2.60-9.00	0.03-0.14	1.0-4.0	0.5-2.0
	37	---	---	---	---	---
Spine very gravelly loam-----	0-1	---	---	---	---	---
	1-3	12-22	5.00-28.00	0.05-0.13	0.0-2.0	4.0-8.0
	3-9	15-35	2.00-26.00	0.03-0.15	1.0-6.0	0.5-2.0
	9-16	15-35	2.00-26.00	0.03-0.15	1.0-6.0	0.5-2.0
	16	---	---	---	---	---
837:						
Hietanen gravelly loam-----	0-1	---	---	---	---	---
	1-3	18-27	4.00-7.00	0.10-0.19	2.0-4.0	5.0-12
	3-8	22-35	2.00-5.00	0.11-0.21	2.0-6.0	2.0-7.0
	8-19	22-35	2.00-5.00	0.11-0.21	2.0-6.0	1.0-4.0
	19-30	22-35	2.00-5.00	0.11-0.21	2.0-6.0	0.5-2.0
	30-53	22-35	2.00-5.00	0.11-0.21	2.0-6.0	0.5-2.0
	53	---	---	---	---	---
Spine very gravelly loam-----	0-1	---	---	---	---	---
	1-3	12-22	5.00-28.00	0.05-0.13	0.0-2.0	4.0-8.0
	3-9	15-35	2.00-26.00	0.03-0.15	1.0-6.0	0.5-2.0
	9-16	15-35	2.00-26.00	0.03-0.15	1.0-6.0	0.5-2.0
	16	---	---	---	---	---
Mac gravelly loam-----	0-1	---	---	---	---	---
	1-4	15-25	5.00-20.00	0.07-0.15	1.0-4.0	5.0-12
	4-9	17-35	2.00-18.00	0.07-0.19	1.0-6.0	2.0-7.0
	9-15	17-35	2.00-18.00	0.07-0.19	1.0-6.0	1.0-4.0
	15-23	17-35	2.00-18.00	0.07-0.19	1.0-6.0	0.5-2.0
	23-37	16-27	2.60-9.00	0.03-0.14	1.0-4.0	0.5-2.0
	37	---	---	---	---	---
838:						
Dixmine very gravelly loam---	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-6	18-27	4.00-8.00	0.08-0.15	1.0-3.0	4.0-8.0
	6-11	20-30	3.00-7.00	0.07-0.18	2.0-4.5	2.0-5.0
	11-17	20-30	3.00-7.00	0.07-0.18	2.0-4.5	2.0-5.0
	17-30	27-35	2.00-4.00	0.06-0.14	3.0-6.0	0.2-2.0
	30-41	27-35	2.00-4.00	0.06-0.14	3.0-6.0	0.2-2.0
	41-54	27-35	2.00-4.00	0.06-0.14	3.0-6.0	0.2-2.0
	54	---	---	---	---	---
Spine very gravelly loam-----	0-1	---	---	---	---	---
	1-3	12-22	5.00-28.00	0.05-0.13	0.0-2.0	4.0-8.0
	3-9	15-35	2.00-26.00	0.03-0.15	1.0-6.0	0.5-2.0
	9-16	15-35	2.00-26.00	0.03-0.15	1.0-6.0	0.5-2.0
	16	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
838: Mac gravelly loam-----	0-1	---	---	---	---	---
	1-4	15-25	5.00-20.00	0.07-0.15	1.0-4.0	5.0-12
	4-9	17-35	2.00-18.00	0.07-0.19	1.0-6.0	2.0-7.0
	9-15	17-35	2.00-18.00	0.07-0.19	1.0-6.0	1.0-4.0
	15-23	17-35	2.00-18.00	0.07-0.19	1.0-6.0	0.5-2.0
	23-37	16-27	2.60-9.00	0.03-0.14	1.0-4.0	0.5-2.0
	37	---	---	---	---	---
839: Chawanakee gravelly sandy loam-----	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-5	2-6	30.00-141.00	0.04-0.10	0.0-0.0	1.0-5.0
	5-11	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	11-19	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	19	---	---	---	---	---
Billscabin gravelly sandy loam-----	0-2	---	---	---	---	---
	2-5	5-15	14.00-42.00	0.08-0.11	0.0-1.0	2.0-4.0
	5-14	5-15	14.00-42.00	0.04-0.11	0.0-1.0	1.0-2.0
	14-27	5-15	14.00-42.00	0.02-0.08	0.0-1.0	0.3-1.0
	27-37	3-12	14.00-141.00	0.01-0.08	0.0-1.0	0.1-1.0
	37-57	3-12	14.00-141.00	0.01-0.08	0.0-1.0	0.1-1.0
	57-82	3-12	14.00-141.00	0.01-0.08	0.0-1.0	0.1-1.0
841: Billscabin gravelly sandy loam-----	0-2	---	---	---	---	---
	2-5	5-15	14.00-42.00	0.08-0.11	0.0-1.0	2.0-4.0
	5-14	5-15	14.00-42.00	0.04-0.11	0.0-1.0	1.0-2.0
	14-27	5-15	14.00-42.00	0.02-0.08	0.0-1.0	0.3-1.0
	27-37	3-12	14.00-141.00	0.01-0.08	0.0-1.0	0.1-1.0
	37-57	3-12	14.00-141.00	0.01-0.08	0.0-1.0	0.1-1.0
	57-82	3-12	14.00-141.00	0.01-0.08	0.0-1.0	0.1-1.0
Bonneyr ridge sandy loam-----	0-1	---	---	---	---	---
	1-3	5-15	14.00-42.00	0.11-0.12	0.0-1.0	2.0-8.0
	3-6	5-15	14.00-42.00	0.10-0.11	0.0-1.0	2.0-8.0
	6-16	5-18	14.00-42.00	0.09-0.10	0.0-1.0	0.6-6.0
	16-22	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0
	22-31	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0
	31-39	5-18	14.00-42.00	0.09-0.13	0.0-3.0	0.6-6.0
	39-56	5-10	42.00-141.00	0.06-0.09	0.0-3.0	0.1-0.6
	56-76	5-10	42.00-141.00	0.05-0.09	0.0-3.0	0.1-0.6
842: Billscabin gravelly sandy loam-----	0-2	---	---	---	---	---
	2-5	5-15	14.00-42.00	0.08-0.11	0.0-1.0	2.0-4.0
	5-14	5-15	14.00-42.00	0.04-0.11	0.0-1.0	1.0-2.0
	14-27	5-15	14.00-42.00	0.02-0.08	0.0-1.0	0.3-1.0
	27-37	3-12	14.00-141.00	0.01-0.08	0.0-1.0	0.1-1.0
	37-57	3-12	14.00-141.00	0.01-0.08	0.0-1.0	0.1-1.0
	57-82	3-12	14.00-141.00	0.01-0.08	0.0-1.0	0.1-1.0

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	Pct	um/sec	In/in	Pct	Pct
842: Bonneyridge sandy loam-----	0-1	---	---	---	---	---	---
	1-3	5-15	14.00-42.00	0.11-0.12	0.0-1.0	2.0-8.0	
	3-6	5-15	14.00-42.00	0.10-0.11	0.0-1.0	2.0-8.0	
	6-16	5-18	14.00-42.00	0.09-0.10	0.0-1.0	0.6-6.0	
	16-22	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0	
	22-31	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0	
	31-39	5-18	14.00-42.00	0.09-0.13	0.0-3.0	0.6-6.0	
	39-56	5-10	42.00-141.00	0.06-0.09	0.0-3.0	0.1-0.6	
	56-76	5-10	42.00-141.00	0.05-0.09	0.0-3.0	0.1-0.6	
846: Bonneyridge sandy loam-----	0-1	---	---	---	---	---	---
	1-3	5-15	14.00-42.00	0.11-0.12	0.0-1.0	2.0-8.0	
	3-6	5-15	14.00-42.00	0.10-0.11	0.0-1.0	2.0-8.0	
	6-16	5-18	14.00-42.00	0.09-0.10	0.0-1.0	0.6-6.0	
	16-22	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0	
	22-31	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0	
	31-39	5-18	14.00-42.00	0.09-0.13	0.0-3.0	0.6-6.0	
	39-56	5-10	42.00-141.00	0.06-0.09	0.0-3.0	0.1-0.6	
	56-76	5-10	42.00-141.00	0.05-0.09	0.0-3.0	0.1-0.6	
Lewisflat loam-----	0-3	---	---	---	---	---	---
	3-5	5-18	14.00-42.00	0.13-0.15	0.0-1.0	8.0-10	
	5-9	5-18	14.00-42.00	0.10-0.15	0.0-1.0	1.0-2.0	
	9-18	18-27	4.00-14.00	0.13-0.18	0.9-3.0	1.0-2.0	
	18-33	18-27	4.00-14.00	0.13-0.18	0.9-3.0	0.1-0.6	
	33-49	18-27	4.00-14.00	0.13-0.18	0.9-3.0	0.1-0.6	
	49-65	8-27	4.00-42.00	0.09-0.18	0.0-3.0	0.1-0.6	
	65-75	8-27	4.00-42.00	0.09-0.18	0.0-3.0	0.1-0.6	
847: Bonneyridge sandy loam-----	0-1	---	---	---	---	---	---
	1-3	5-15	14.00-42.00	0.11-0.12	0.0-1.0	2.0-8.0	
	3-6	5-15	14.00-42.00	0.10-0.11	0.0-1.0	2.0-8.0	
	6-16	5-18	14.00-42.00	0.09-0.10	0.0-1.0	0.6-6.0	
	16-22	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0	
	22-31	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0	
	31-39	5-18	14.00-42.00	0.09-0.13	0.0-3.0	0.6-6.0	
	39-56	5-10	42.00-141.00	0.06-0.09	0.0-3.0	0.1-0.6	
	56-76	5-10	42.00-141.00	0.05-0.09	0.0-3.0	0.1-0.6	
Lewisflat loam-----	0-3	---	---	---	---	---	---
	3-5	5-18	14.00-42.00	0.13-0.15	0.0-1.0	8.0-10	
	5-9	5-18	14.00-42.00	0.10-0.15	0.0-1.0	1.0-2.0	
	9-18	18-27	4.00-14.00	0.13-0.18	0.9-3.0	1.0-2.0	
	18-33	18-27	4.00-14.00	0.13-0.18	0.9-3.0	0.1-0.6	
	33-49	18-27	4.00-14.00	0.13-0.18	0.9-3.0	0.1-0.6	
	49-65	8-27	4.00-42.00	0.09-0.18	0.0-3.0	0.1-0.6	
	65-75	8-27	4.00-42.00	0.09-0.18	0.0-3.0	0.1-0.6	
848: Bonneyridge sandy loam-----	0-1	---	---	---	---	---	---
	1-3	5-15	14.00-42.00	0.11-0.12	0.0-1.0	2.0-8.0	
	3-6	5-15	14.00-42.00	0.10-0.11	0.0-1.0	2.0-8.0	
	6-16	5-18	14.00-42.00	0.09-0.10	0.0-1.0	0.6-6.0	
	16-22	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0	
	22-31	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0	
	31-39	5-18	14.00-42.00	0.09-0.13	0.0-3.0	0.6-6.0	
	39-56	5-10	42.00-141.00	0.06-0.09	0.0-3.0	0.1-0.6	
	56-76	5-10	42.00-141.00	0.05-0.09	0.0-3.0	0.1-0.6	

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility		Organic matter
	In	Pct				um/sec	In/in	
848:								
Lewisflat loam-----	0-3	---	---	---	---	---	---	---
	3-5	5-18	14.00-42.00	0.13-0.15	0.0-1.0	8.0-10		
	5-9	5-18	14.00-42.00	0.10-0.15	0.0-1.0	1.0-2.0		
	9-18	18-27	4.00-14.00	0.13-0.18	0.9-3.0	1.0-2.0		
	18-33	18-27	4.00-14.00	0.13-0.18	0.9-3.0	0.1-0.6		
	33-49	18-27	4.00-14.00	0.13-0.18	0.9-3.0	0.1-0.6		
	49-65	8-27	4.00-42.00	0.09-0.18	0.0-3.0	0.1-0.6		
	65-75	8-27	4.00-42.00	0.09-0.18	0.0-3.0	0.1-0.6		
850:								
Lewisflat loam-----	0-3	---	---	---	---	---		
	3-5	5-18	14.00-42.00	0.13-0.15	0.0-1.0	8.0-10		
	5-9	5-18	14.00-42.00	0.10-0.15	0.0-1.0	1.0-2.0		
	9-18	18-27	4.00-14.00	0.13-0.18	0.9-3.0	1.0-2.0		
	18-33	18-27	4.00-14.00	0.13-0.18	0.9-3.0	0.1-0.6		
	33-49	18-27	4.00-14.00	0.13-0.18	0.9-3.0	0.1-0.6		
	49-65	8-27	4.00-42.00	0.09-0.18	0.0-3.0	0.1-0.6		
	65-75	8-27	4.00-42.00	0.09-0.18	0.0-3.0	0.1-0.6		
851:								
Lewisflat loam-----	0-3	---	---	---	---	---		
	3-5	5-18	14.00-42.00	0.13-0.15	0.0-1.0	8.0-10		
	5-9	5-18	14.00-42.00	0.10-0.15	0.0-1.0	1.0-2.0		
	9-18	18-27	4.00-14.00	0.13-0.18	0.9-3.0	1.0-2.0		
	18-33	18-27	4.00-14.00	0.13-0.18	0.9-3.0	0.1-0.6		
	33-49	18-27	4.00-14.00	0.13-0.18	0.9-3.0	0.1-0.6		
	49-65	8-27	4.00-42.00	0.09-0.18	0.0-3.0	0.1-0.6		
	65-75	8-27	4.00-42.00	0.09-0.18	0.0-3.0	0.1-0.6		
852:								
Lewisflat loam-----	0-3	---	---	---	---	---		
	3-5	5-18	14.00-42.00	0.13-0.15	0.0-1.0	8.0-10		
	5-9	5-18	14.00-42.00	0.10-0.15	0.0-1.0	1.0-2.0		
	9-18	18-27	4.00-14.00	0.13-0.18	0.9-3.0	1.0-2.0		
	18-33	18-27	4.00-14.00	0.13-0.18	0.9-3.0	0.1-0.6		
	33-49	18-27	4.00-14.00	0.13-0.18	0.9-3.0	0.1-0.6		
	49-65	8-27	4.00-42.00	0.09-0.18	0.0-3.0	0.1-0.6		
	65-75	8-27	4.00-42.00	0.09-0.18	0.0-3.0	0.1-0.6		
860:								
Toadtown gravelly loam-----	0-1	---	---	---	---	---		
	1-6	15-25	4.00-25.00	0.08-0.17	1.0-3.0	10-15		
	6-15	22-37	1.00-11.00	0.11-0.21	2.0-6.5	3.0-8.0		
	15-32	40-60	1.00-4.00	0.11-0.17	7.5-9.0	0.8-3.0		
	32-43	40-60	1.00-4.00	0.11-0.17	7.5-9.0	0.8-3.0		
	43-55	18-37	1.00-1.40	0.10-0.20	1.0-6.5	0.1-0.3		
	55-80	18-37	1.00-1.40	0.10-0.20	1.0-6.5	0.1-0.3		
Powellton silt loam-----	0-1	---	---	---	---	---		
	1-3	18-24	4.00-14.00	0.12-0.19	1.0-3.0	8.0-13		
	3-9	18-24	4.00-14.00	0.12-0.19	1.0-3.0	4.6-13		
	9-19	22-35	2.00-11.00	0.11-0.20	2.0-6.0	0.5-7.0		
	19-28	22-35	2.00-11.00	0.11-0.20	2.0-6.0	0.5-7.0		
	28-33	22-35	2.00-11.00	0.11-0.20	2.0-6.0	0.5-7.0		
	33-48	18-35	2.00-14.00	0.13-0.19	1.0-6.0	0.1-1.0		
	48-66	18-35	2.00-14.00	0.13-0.19	1.0-6.0	0.1-1.0		
	66-73	16-35	2.00-14.00	0.11-0.19	1.0-6.0	0.1-0.5		
	73-83	11-27	4.00-20.00	0.14-0.14	0.0-3.5	0.1-0.5		
	83-109	11-27	4.00-20.00	0.14-0.14	0.0-3.5	0.1-0.5		

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
861:						
Toadtown gravelly loam-----	0-1	---	---	---	---	---
	1-6	15-25	4.00-25.00	0.08-0.17	1.0-3.0	10-15
	6-15	22-37	1.00-11.00	0.11-0.21	2.0-6.5	3.0-8.0
	15-32	40-60	1.00-4.00	0.11-0.17	7.5-9.0	0.8-3.0
	32-43	40-60	1.00-4.00	0.11-0.17	7.5-9.0	0.8-3.0
	43-55	18-37	1.00-1.40	0.10-0.20	1.0-6.5	0.1-0.3
	55-80	18-37	1.00-1.40	0.10-0.20	1.0-6.5	0.1-0.3
Powellton silt loam-----	0-1	---	---	---	---	---
	1-3	18-24	4.00-14.00	0.12-0.19	1.0-3.0	8.0-13
	3-9	18-24	4.00-14.00	0.12-0.19	1.0-3.0	4.6-13
	9-19	22-35	2.00-11.00	0.11-0.20	2.0-6.0	0.5-7.0
	19-28	22-35	2.00-11.00	0.11-0.20	2.0-6.0	0.5-7.0
	28-33	22-35	2.00-11.00	0.11-0.20	2.0-6.0	0.5-7.0
	33-48	18-35	2.00-14.00	0.13-0.19	1.0-6.0	0.1-1.0
	48-66	18-35	2.00-14.00	0.13-0.19	1.0-6.0	0.1-1.0
	66-73	16-35	2.00-14.00	0.11-0.19	1.0-6.0	0.1-0.5
	73-83	11-27	4.00-20.00	0.14-0.14	0.0-3.5	0.1-0.5
	83-109	11-27	4.00-20.00	0.14-0.14	0.0-3.5	0.1-0.5
862:						
Toadtown gravelly loam-----	0-1	---	---	---	---	---
	1-6	15-25	4.00-25.00	0.08-0.17	1.0-3.0	10-15
	6-15	22-37	1.00-11.00	0.11-0.21	2.0-6.5	3.0-8.0
	15-32	40-60	1.00-4.00	0.11-0.17	7.5-9.0	0.8-3.0
	32-43	40-60	1.00-4.00	0.11-0.17	7.5-9.0	0.8-3.0
	43-55	18-37	1.00-1.40	0.10-0.20	1.0-6.5	0.1-0.3
	55-80	18-37	1.00-1.40	0.10-0.20	1.0-6.5	0.1-0.3
Powellton silt loam-----	0-1	---	---	---	---	---
	1-3	18-24	4.00-14.00	0.12-0.19	1.0-3.0	8.0-13
	3-9	18-24	4.00-14.00	0.12-0.19	1.0-3.0	4.6-13
	9-19	22-35	2.00-11.00	0.11-0.20	2.0-6.0	0.5-7.0
	19-28	22-35	2.00-11.00	0.11-0.20	2.0-6.0	0.5-7.0
	28-33	22-35	2.00-11.00	0.11-0.20	2.0-6.0	0.5-7.0
	33-48	18-35	2.00-14.00	0.13-0.19	1.0-6.0	0.1-1.0
	48-66	18-35	2.00-14.00	0.13-0.19	1.0-6.0	0.1-1.0
	66-73	16-35	2.00-14.00	0.11-0.19	1.0-6.0	0.1-0.5
	73-83	11-27	4.00-20.00	0.14-0.14	0.0-3.5	0.1-0.5
	83-109	11-27	4.00-20.00	0.14-0.14	0.0-3.5	0.1-0.5
863:						
Toadtown gravelly loam-----	0-1	---	---	---	---	---
	1-6	15-25	4.00-25.00	0.08-0.17	1.0-3.0	10-15
	6-15	22-37	1.00-11.00	0.11-0.21	2.0-6.5	3.0-8.0
	15-32	40-60	1.00-4.00	0.11-0.17	7.5-9.0	0.8-3.0
	32-43	40-60	1.00-4.00	0.11-0.17	7.5-9.0	0.8-3.0
	43-55	18-37	1.00-1.40	0.10-0.20	1.0-6.5	0.1-0.3
	55-80	18-37	1.00-1.40	0.10-0.20	1.0-6.5	0.1-0.3
Powellton silt loam-----	0-1	---	---	---	---	---
	1-3	18-24	4.00-14.00	0.12-0.19	1.0-3.0	8.0-13
	3-9	18-24	4.00-14.00	0.12-0.19	1.0-3.0	4.6-13
	9-19	22-35	2.00-11.00	0.11-0.20	2.0-6.0	0.5-7.0
	19-28	22-35	2.00-11.00	0.11-0.20	2.0-6.0	0.5-7.0
	28-33	22-35	2.00-11.00	0.11-0.20	2.0-6.0	0.5-7.0
	33-48	18-35	2.00-14.00	0.13-0.19	1.0-6.0	0.1-1.0
	48-66	18-35	2.00-14.00	0.13-0.19	1.0-6.0	0.1-1.0
	66-73	16-35	2.00-14.00	0.11-0.19	1.0-6.0	0.1-0.5
	73-83	11-27	4.00-20.00	0.14-0.14	0.0-3.5	0.1-0.5
	83-109	11-27	4.00-20.00	0.14-0.14	0.0-3.5	0.1-0.5

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
902: Lava flows, Lovejoy basalt.						
Lumpkin gravelly medial sandy loam-----	0-3	8-12	14.00-42.00	0.04-0.10	0.0-0.6	5.0-15
	3-8	9-18	14.00-42.00	0.02-0.14	0.0-1.0	5.0-15
	8-14	9-18	14.00-42.00	0.02-0.14	0.0-1.0	5.0-15
	14	---	---	---	---	---
903: Mudwash gravelly medial sandy loam-----	0-1	---	---	---	---	---
	1-4	---	---	---	---	---
	4-8	8-18	14.00-42.00	0.08-0.15	0.0-1.0	5.0-10
	8-13	8-18	14.00-42.00	0.08-0.15	0.0-1.0	5.0-10
	13-26	12-22	14.00-42.00	0.08-0.16	0.0-2.0	3.0-9.0
	26-35	18-38	4.00-14.00	0.12-0.18	1.0-6.0	0.8-5.0
	35-52	18-38	4.00-14.00	0.09-0.18	1.0-6.0	0.8-5.0
	52-72	15-28	4.00-14.00	0.02-0.21	1.0-4.0	0.8-1.0
	72-89	---	---	---	---	---
Timberisland very gravelly medial sandy loam-----	0-2	---	---	---	---	---
	2-3	---	---	---	---	---
	3-6	5-18	14.00-42.00	0.04-0.12	0.0-1.0	15-52
	6-14	5-18	14.00-42.00	0.04-0.12	0.0-1.0	10-20
	14-25	8-18	14.00-42.00	0.02-0.11	0.0-1.0	10-18
	25-35	10-22	14.00-42.00	0.02-0.10	0.0-1.6	2.0-10
	35-48	10-22	14.00-42.00	0.01-0.10	0.0-1.6	2.0-10
	48	---	---	---	---	---
Lavatop gravelly medial fine sandy loam-----	0-0.5	---	---	---	---	---
	0.5-4	18-20	14.00-42.00	0.05-0.15	0.9-1.0	10-15
	4-15	18-20	14.00-42.00	0.02-0.08	0.9-1.0	8.0-12
	15-26	18-20	14.00-42.00	0.02-0.08	0.9-1.0	5.0-10
	26	---	---	---	---	---
904: Lava flows, Lovejoy basalt.						
Lavatop gravelly medial fine sandy loam-----	0-0.5	---	---	---	---	---
	0.5-4	18-20	14.00-42.00	0.05-0.15	0.9-1.0	10-15
	4-15	18-20	14.00-42.00	0.02-0.08	0.9-1.0	8.0-12
	15-26	18-20	14.00-42.00	0.02-0.08	0.9-1.0	5.0-10
	26	---	---	---	---	---
905: Lava flows, Lovejoy basalt.						
Lumpkin gravelly medial sandy loam-----	0-3	8-12	14.00-42.00	0.04-0.10	0.0-0.6	5.0-15
	3-8	9-18	14.00-42.00	0.02-0.14	0.0-1.0	5.0-15
	8-14	9-18	14.00-42.00	0.02-0.14	0.0-1.0	5.0-15
	14	---	---	---	---	---
906: Lava flows, Lovejoy basalt.						

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct		um/sec	In/in	Pct	Pct
906: Lumpkin gravelly medial sandy loam-----	0-3	8-12	14.00-42.00	0.04-0.10	0.0-0.6	5.0-15	
	3-8	9-18	14.00-42.00	0.02-0.14	0.0-1.0	5.0-15	
	8-14	9-18	14.00-42.00	0.02-0.14	0.0-1.0	5.0-15	
	14	---	---	---	---	---	
911: Endoaquolls loam-----	0-3	16-30	2.00-18.00	0.14-0.21	0.5-4.5	3.0-8.0	
	3-8	16-30	2.00-18.00	0.14-0.21	0.5-4.5	3.0-8.0	
	8-17	16-30	2.00-18.00	0.14-0.21	0.5-4.5	3.0-8.0	
	17-28	35-50	0.50-2.00	0.14-0.19	6.0-10.0	2.0-6.0	
	28-43	35-50	0.50-2.00	0.14-0.19	6.0-10.0	3.0-8.0	
	43-58	20-50	0.50-8.00	0.13-0.21	2.0-10.0	0.5-1.5	
	58-73	20-50	0.50-8.00	0.13-0.21	2.0-10.0	0.5-1.5	
923: Powderhouse medial sandy loam	0-2	---	---	---	---	---	
	2-4	8-12	14.00-42.00	0.09-0.11	0.0-0.6	12-45	
	4-11	8-12	14.00-42.00	0.04-0.11	0.0-0.6	12-16	
	11-27	10-18	14.00-42.00	0.02-0.09	0.0-1.0	9.0-12	
	27-36	10-12	14.00-42.00	0.02-0.08	0.0-0.6	4.0-9.0	
	36-82	---	---	---	---	---	
McNair medial coarse sandy loam-----	0-3	---	---	---	---	---	
	3-6	5-12	14.00-42.00	0.09-0.12	0.0-0.6	9.0-45	
	6-16	5-12	14.00-42.00	0.04-0.10	0.0-0.6	9.0-45	
	16-25	10-18	14.00-42.00	0.04-0.09	0.0-1.0	6.0-16	
	25-33	10-25	4.00-42.00	0.04-0.11	0.0-3.0	6.0-16	
	33-48	10-25	4.00-42.00	0.04-0.11	0.0-3.0	6.0-9.0	
	48-57	8-25	4.00-42.00	0.02-0.11	0.0-3.0	4.0-6.0	
	57-88	---	---	---	---	---	
Greenwell medial sandy loam--	0-2	---	---	---	---	---	
	2-3	---	---	---	---	---	
	3-5	8-11	30.00-42.00	0.11-0.12	0.0-0.5	12-45	
	5-10	8-11	30.00-42.00	0.11-0.12	0.0-0.5	12-45	
	10-18	10-15	20.00-42.00	0.10-0.12	0.0-0.7	9.0-16	
	18-23	12-18	14.00-42.00	0.11-0.12	0.0-1.0	4.0-9.0	
	23-32	12-18	14.00-42.00	0.07-0.13	0.0-1.0	4.0-9.0	
	---	---	---	---	---	---	
924: Powderhouse medial sandy loam	0-2	---	---	---	---	---	
	2-4	8-12	14.00-42.00	0.09-0.11	0.0-0.6	12-45	
	4-11	8-12	14.00-42.00	0.04-0.11	0.0-0.6	12-16	
	11-27	10-18	14.00-42.00	0.02-0.09	0.0-1.0	9.0-12	
	27-36	10-12	14.00-42.00	0.02-0.08	0.0-0.6	4.0-9.0	
	36-82	---	---	---	---	---	
McNair medial coarse sandy loam-----	0-3	---	---	---	---	---	
	3-6	5-12	14.00-42.00	0.09-0.12	0.0-0.6	9.0-45	
	6-16	5-12	14.00-42.00	0.04-0.10	0.0-0.6	9.0-45	
	16-25	10-18	14.00-42.00	0.04-0.09	0.0-1.0	6.0-16	
	25-33	10-25	4.00-42.00	0.04-0.11	0.0-3.0	6.0-16	
	33-48	10-25	4.00-42.00	0.04-0.11	0.0-3.0	6.0-9.0	
	48-57	8-25	4.00-42.00	0.02-0.11	0.0-3.0	4.0-6.0	
	57-88	---	---	---	---	---	

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
924:						
Greenwell medial sandy loam--	0-2	---	---	---	---	---
	2-3	---	---	---	---	---
	3-5	8-11	30.00-42.00	0.11-0.12	0.0-0.5	12-45
	5-10	8-11	30.00-42.00	0.11-0.12	0.0-0.5	12-45
	10-18	10-15	20.00-42.00	0.10-0.12	0.0-0.7	9.0-16
	18-23	12-18	14.00-42.00	0.11-0.12	0.0-1.0	4.0-9.0
	23-32	12-18	14.00-42.00	0.07-0.13	0.0-1.0	4.0-9.0
	32	---	---	---	---	---
925:						
Powderhouse medial sandy loam	0-2	---	---	---	---	---
	2-4	8-12	14.00-42.00	0.09-0.11	0.0-0.6	12-45
	4-11	8-12	14.00-42.00	0.04-0.11	0.0-0.6	12-16
	11-27	10-18	14.00-42.00	0.02-0.09	0.0-1.0	9.0-12
	27-36	10-12	14.00-42.00	0.02-0.08	0.0-0.6	4.0-9.0
	36-82	---	---	---	---	---
McNair medial coarse sandy loam-----	0-3	---	---	---	---	---
	3-6	5-12	14.00-42.00	0.09-0.12	0.0-0.6	9.0-45
	6-16	5-12	14.00-42.00	0.04-0.10	0.0-0.6	9.0-45
	16-25	10-18	14.00-42.00	0.04-0.09	0.0-1.0	6.0-16
	25-33	10-25	4.00-42.00	0.04-0.11	0.0-3.0	6.0-16
	33-48	10-25	4.00-42.00	0.04-0.11	0.0-3.0	6.0-9.0
	48-57	8-25	4.00-42.00	0.02-0.11	0.0-3.0	4.0-6.0
	57-88	---	---	---	---	---
Greenwell medial sandy loam--	0-2	---	---	---	---	---
	2-3	---	---	---	---	---
	3-5	8-11	30.00-42.00	0.11-0.12	0.0-0.5	12-45
	5-10	8-11	30.00-42.00	0.11-0.12	0.0-0.5	12-45
	10-18	10-15	20.00-42.00	0.10-0.12	0.0-0.7	9.0-16
	18-23	12-18	14.00-42.00	0.11-0.12	0.0-1.0	4.0-9.0
	23-32	12-18	14.00-42.00	0.07-0.13	0.0-1.0	4.0-9.0
	32	---	---	---	---	---
930:						
Shakeridge gravelly medial coarse sandy loam-----	0-2	---	---	---	---	---
	2-4	5-12	14.00-42.00	0.04-0.10	0.0-0.6	5.0-12
	4-7	5-12	14.00-42.00	0.03-0.10	0.0-0.6	5.0-12
	7-19	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	19-25	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	25-36	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	36-55	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	55-71	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	71-87	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
Timberisland very gravelly medial sandy loam-----	0-2	---	---	---	---	---
	2-3	---	---	---	---	---
	3-6	5-18	14.00-42.00	0.04-0.12	0.0-1.0	15-52
	6-14	5-18	14.00-42.00	0.04-0.12	0.0-1.0	10-20
	14-25	8-18	14.00-42.00	0.02-0.11	0.0-1.0	10-18
	25-35	10-22	14.00-42.00	0.02-0.10	0.0-1.6	2.0-10
	35-48	10-22	14.00-42.00	0.01-0.10	0.0-1.6	2.0-10
	48	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
931:						
Shakeridge gravelly medial coarse sandy loam-----	0-2	---	---	---	---	---
	2-4	5-12	14.00-42.00	0.04-0.10	0.0-0.6	5.0-12
	4-7	5-12	14.00-42.00	0.03-0.10	0.0-0.6	5.0-12
	7-19	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	19-25	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	25-36	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	36-55	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	55-71	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	71-87	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
Mudwash gravelly medial sandy loam-----	0-1	---	---	---	---	---
	1-4	---	---	---	---	---
	4-8	8-18	14.00-42.00	0.08-0.15	0.0-1.0	5.0-10
	8-13	8-18	14.00-42.00	0.08-0.15	0.0-1.0	5.0-10
	13-26	12-22	14.00-42.00	0.08-0.16	0.0-2.0	3.0-9.0
	26-35	18-38	4.00-14.00	0.12-0.18	1.0-6.0	0.8-5.0
	35-52	18-38	4.00-14.00	0.09-0.18	1.0-6.0	0.8-5.0
	52-72	15-28	4.00-14.00	0.02-0.21	1.0-4.0	0.8-1.0
	72-89	---	---	---	---	---
Timberisland very gravelly medial sandy loam-----	0-2	---	---	---	---	---
	2-3	---	---	---	---	---
	3-6	5-18	14.00-42.00	0.04-0.12	0.0-1.0	15-52
	6-14	5-18	14.00-42.00	0.04-0.12	0.0-1.0	10-20
	14-25	8-18	14.00-42.00	0.02-0.11	0.0-1.0	10-18
	25-35	10-22	14.00-42.00	0.02-0.10	0.0-1.6	2.0-10
	35-48	10-22	14.00-42.00	0.01-0.10	0.0-1.6	2.0-10
	48	---	---	---	---	---
932:						
Shakeridge gravelly medial coarse sandy loam-----	0-2	---	---	---	---	---
	2-4	5-12	14.00-42.00	0.04-0.10	0.0-0.6	5.0-12
	4-7	5-12	14.00-42.00	0.03-0.10	0.0-0.6	5.0-12
	7-19	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	19-25	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	25-36	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	36-55	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	55-71	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	71-87	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
Mudwash gravelly medial sandy loam-----	0-1	---	---	---	---	---
	1-4	---	---	---	---	---
	4-8	8-18	14.00-42.00	0.08-0.15	0.0-1.0	5.0-10
	8-13	8-18	14.00-42.00	0.08-0.15	0.0-1.0	5.0-10
	13-26	12-22	14.00-42.00	0.08-0.16	0.0-2.0	3.0-9.0
	26-35	18-38	4.00-14.00	0.12-0.18	1.0-6.0	0.8-5.0
	35-52	18-38	4.00-14.00	0.09-0.18	1.0-6.0	0.8-5.0
	52-72	15-28	4.00-14.00	0.02-0.21	1.0-4.0	0.8-1.0
	72-89	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
933: Shakeridge gravelly medial coarse sandy loam-----	0-2	---	---	---	---	---
	2-4	5-12	14.00-42.00	0.04-0.10	0.0-0.6	5.0-12
	4-7	5-12	14.00-42.00	0.03-0.10	0.0-0.6	5.0-12
	7-19	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	19-25	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	25-36	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	36-55	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	55-71	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	71-87	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
934: Mudwash gravelly medial sandy loam-----	0-1	---	---	---	---	---
	1-4	---	---	---	---	---
	4-8	8-18	14.00-42.00	0.08-0.15	0.0-1.0	5.0-10
	8-13	8-18	14.00-42.00	0.08-0.15	0.0-1.0	5.0-10
	13-26	12-22	14.00-42.00	0.08-0.16	0.0-2.0	3.0-9.0
	26-35	18-38	4.00-14.00	0.12-0.18	1.0-6.0	0.8-5.0
	35-52	18-38	4.00-14.00	0.09-0.18	1.0-6.0	0.8-5.0
	52-72	15-28	4.00-14.00	0.02-0.21	1.0-4.0	0.8-1.0
	72-89	---	---	---	---	---
939: Fluvaquentic Humaquepts very fine sandy loam-----	0-7	12-15	20.00-30.00	0.14-0.17	0.0-1.0	5.0-10
	7-15	12-15	20.00-30.00	0.14-0.17	0.0-1.0	5.0-10
	15-22	20-25	4.00-14.00	0.16-0.18	1.0-3.0	1.0-5.0
	22-29	20-25	4.00-14.00	0.16-0.18	1.0-3.0	1.0-2.0
	29-36	20-25	4.00-14.00	0.16-0.18	1.0-3.0	0.5-1.0
	36-45	27-30	3.00-14.00	0.14-0.17	3.0-4.5	0.5-1.0
	45-60	20-27	4.00-14.00	0.09-0.13	1.0-3.0	0.4-0.6
940: Dejonah gravelly loam-----	0-1	---	---	---	---	---
	1-4	10-18	4.00-42.00	0.07-0.16	0.0-1.0	5.0-17
	4-10	18-25	4.00-42.00	0.09-0.16	0.7-3.0	2.0-10
	10-16	15-27	4.00-14.00	0.09-0.18	0.7-3.0	2.0-5.0
	16-28	15-27	4.00-14.00	0.09-0.18	0.7-3.0	1.0-2.0
	28-37	15-27	4.00-14.00	0.09-0.18	0.7-3.0	1.0-2.0
	37-53	8-20	4.00-42.00	0.02-0.17	0.0-1.0	1.0-2.0
	53-60	8-20	4.00-42.00	0.02-0.17	0.0-1.0	0.5-1.0
Stagpoint loam-----	0-0.5	---	---	---	---	---
	0.5-4	8-18	14.00-42.00	0.06-0.15	0.0-1.0	8.0-17
	4-10	10-25	4.00-42.00	0.06-0.15	0.0-3.0	8.0-17
	10-17	10-25	4.00-42.00	0.03-0.12	0.0-5.0	2.0-5.0
	17-23	15-32	4.00-42.00	0.03-0.12	1.0-5.0	2.0-5.0
	23-34	15-32	4.00-14.00	0.03-0.12	0.9-5.0	1.0-2.0
	34-49	12-18	4.00-14.00	0.03-0.12	0.0-1.0	1.0-2.0
	49-64	12-18	4.00-42.00	0.02-0.10	0.0-1.0	1.0-2.0
	64-86	9-15	14.00-42.00	0.02-0.10	0.0-1.0	0.5-1.0

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
941:						
Dejonah gravelly loam-----	0-1	---	---	---	---	---
	1-4	10-18	4.00-42.00	0.07-0.16	0.0-1.0	5.0-17
	4-10	18-25	4.00-42.00	0.09-0.16	0.7-3.0	2.0-10
	10-16	15-27	4.00-14.00	0.09-0.18	0.7-3.0	2.0-5.0
	16-28	15-27	4.00-14.00	0.09-0.18	0.7-3.0	1.0-2.0
	28-37	15-27	4.00-14.00	0.09-0.18	0.7-3.0	1.0-2.0
	37-53	8-20	4.00-42.00	0.02-0.17	0.0-1.0	1.0-2.0
	53-60	8-20	4.00-42.00	0.02-0.17	0.0-1.0	0.5-1.0
Stagpoint loam-----	0-0.5	---	---	---	---	---
	0.5-4	8-18	14.00-42.00	0.06-0.15	0.0-1.0	8.0-17
	4-10	10-25	4.00-42.00	0.06-0.15	0.0-3.0	8.0-17
	10-17	10-25	4.00-42.00	0.03-0.12	0.0-5.0	2.0-5.0
	17-23	15-32	4.00-42.00	0.03-0.12	1.0-5.0	2.0-5.0
	23-34	15-32	4.00-14.00	0.03-0.12	0.9-5.0	1.0-2.0
	34-49	12-18	4.00-14.00	0.03-0.12	0.0-1.0	1.0-2.0
	49-64	12-18	4.00-42.00	0.02-0.10	0.0-1.0	1.0-2.0
	64-86	9-15	14.00-42.00	0.02-0.10	0.0-1.0	0.5-1.0
942:						
Stagpoint loam-----	0-0.5	---	---	---	---	---
	0.5-4	8-18	14.00-42.00	0.06-0.15	0.0-1.0	8.0-17
	4-10	10-25	4.00-42.00	0.06-0.15	0.0-3.0	8.0-17
	10-17	10-25	4.00-42.00	0.03-0.12	0.0-5.0	2.0-5.0
	17-23	15-32	4.00-42.00	0.03-0.12	1.0-5.0	2.0-5.0
	23-34	15-32	4.00-14.00	0.03-0.12	0.9-5.0	1.0-2.0
	34-49	12-18	4.00-14.00	0.03-0.12	0.0-1.0	1.0-2.0
	49-64	12-18	4.00-42.00	0.02-0.10	0.0-1.0	1.0-2.0
	64-86	9-15	14.00-42.00	0.02-0.10	0.0-1.0	0.5-1.0
Dejonah gravelly loam-----	0-1	---	---	---	---	---
	1-4	10-18	4.00-42.00	0.07-0.16	0.0-1.0	5.0-17
	4-10	18-25	4.00-42.00	0.09-0.16	0.7-3.0	2.0-10
	10-16	15-27	4.00-14.00	0.09-0.18	0.7-3.0	2.0-5.0
	16-28	15-27	4.00-14.00	0.09-0.18	0.7-3.0	1.0-2.0
	28-37	15-27	4.00-14.00	0.09-0.18	0.7-3.0	1.0-2.0
	37-53	8-20	4.00-42.00	0.02-0.17	0.0-1.0	1.0-2.0
	53-60	8-20	4.00-42.00	0.02-0.17	0.0-1.0	0.5-1.0
948:						
Stagpoint loam-----	0-0.5	---	---	---	---	---
	0.5-4	8-18	14.00-42.00	0.06-0.15	0.0-1.0	8.0-17
	4-10	10-25	4.00-42.00	0.06-0.15	0.0-3.0	8.0-17
	10-17	10-25	4.00-42.00	0.03-0.12	0.0-5.0	2.0-5.0
	17-23	15-32	4.00-42.00	0.03-0.12	1.0-5.0	2.0-5.0
	23-34	15-32	4.00-14.00	0.03-0.12	0.9-5.0	1.0-2.0
	34-49	12-18	4.00-14.00	0.03-0.12	0.0-1.0	1.0-2.0
	49-64	12-18	4.00-42.00	0.02-0.10	0.0-1.0	1.0-2.0
	64-86	9-15	14.00-42.00	0.02-0.10	0.0-1.0	0.5-1.0
Dejonah gravelly loam-----	0-1	---	---	---	---	---
	1-4	10-18	4.00-42.00	0.07-0.16	0.0-1.0	5.0-17
	4-10	18-25	4.00-42.00	0.09-0.16	0.7-3.0	2.0-10
	10-16	15-27	4.00-14.00	0.09-0.18	0.7-3.0	2.0-5.0
	16-28	15-27	4.00-14.00	0.09-0.18	0.7-3.0	1.0-2.0
	28-37	15-27	4.00-14.00	0.09-0.18	0.7-3.0	1.0-2.0
	37-53	8-20	4.00-42.00	0.02-0.17	0.0-1.0	1.0-2.0
	53-60	8-20	4.00-42.00	0.02-0.17	0.0-1.0	0.5-1.0

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
949: Rogerville taxadjunct fine sandy loam-----	0-2	---	---	---	---	---
	2-4	8-12	20.00-42.00	0.09-0.14	0.0-0.0	5.0-10
	4-7	15-22	12.00-15.00	0.08-0.10	0.0-2.0	5.0-10
	7-21	15-22	12.00-15.00	0.05-0.09	0.0-2.0	3.0-10
	21-26	15-22	12.00-15.00	0.06-0.12	0.0-2.0	3.0-10
	26-33	24-28	4.00-10.00	0.13-0.18	2.0-3.5	1.0-5.0
	33-44	24-28	4.00-10.00	0.13-0.18	2.0-3.5	1.0-5.0
	44-57	24-28	4.00-10.00	0.13-0.19	2.0-3.5	1.0-5.0
	57	---	---	---	---	---
950: Lumpkin taxadjunct very gravelly medial very fine sandy loam-----	0-4	10-15	14.00-42.00	0.06-0.11	0.0-1.0	5.0-12
	4-9	14-18	14.00-42.00	0.06-0.09	0.0-1.0	5.0-12
	9	---	---	---	---	---
Rock outcrop, olivine basalt, andesite, or mudflow.						
Powderhouse medial sandy loam	0-2	---	---	---	---	---
	2-4	8-12	14.00-42.00	0.09-0.11	0.0-0.6	12-45
	4-11	8-12	14.00-42.00	0.04-0.11	0.0-0.6	12-16
	11-27	10-18	14.00-42.00	0.02-0.09	0.0-1.0	9.0-12
	27-36	10-12	14.00-42.00	0.02-0.08	0.0-0.6	4.0-9.0
	36-82	---	---	---	---	---
951: Lumpkin taxadjunct very gravelly medial very fine sandy loam-----	0-4	10-15	14.00-42.00	0.06-0.11	0.0-1.0	5.0-12
	4-9	14-18	14.00-42.00	0.06-0.09	0.0-1.0	5.0-12
	9	---	---	---	---	---
Rock outcrop, andesite.						
Powderhouse medial sandy loam	0-2	---	---	---	---	---
	2-4	8-12	14.00-42.00	0.09-0.11	0.0-0.6	12-45
	4-11	8-12	14.00-42.00	0.04-0.11	0.0-0.6	12-16
	11-27	10-18	14.00-42.00	0.02-0.09	0.0-1.0	9.0-12
	27-36	10-12	14.00-42.00	0.02-0.08	0.0-0.6	4.0-9.0
	36-82	---	---	---	---	---
960: Surnuf gravelly loam, high elevation-----	0-0.5	---	---	---	---	---
	0.5-6	10-18	14.00-30.00	0.11-0.14	0.0-1.0	4.0-6.0
	6-10	18-25	4.00-14.00	0.13-0.17	1.0-3.0	1.0-2.0
	10-20	35-40	1.40-4.00	0.11-0.17	6.0-7.5	0.8-1.0
	20-28	35-40	1.40-4.00	0.11-0.17	6.0-7.5	0.8-1.0
	28-38	40-60	1.10-4.00	0.09-0.14	7.5-9.0	0.3-14
	38-52	40-60	0.90-4.00	0.09-0.14	7.5-9.0	0.3-14
	52-67	40-60	0.60-4.00	0.09-0.14	7.5-9.0	0.3-14
	67-84	40-60	0.42-4.00	0.09-0.14	7.5-9.0	0.3-14

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
961: Surnuf gravelly loam, high elevation-----	0-0.5	---	---	---	---	---
	0.5-6	10-18	14.00-30.00	0.11-0.14	0.0-1.0	4.0-6.0
	6-10	18-25	4.00-14.00	0.13-0.17	1.0-3.0	1.0-2.0
	10-20	35-40	1.40-4.00	0.11-0.17	6.0-7.5	0.8-1.0
	20-28	35-40	1.40-4.00	0.11-0.17	6.0-7.5	0.8-1.0
	28-38	40-60	1.10-4.00	0.09-0.14	7.5-9.0	0.3-14
	38-52	40-60	0.90-4.00	0.09-0.14	7.5-9.0	0.3-14
	52-67	40-60	0.60-4.00	0.09-0.14	7.5-9.0	0.3-14
	67-84	40-60	0.42-4.00	0.09-0.14	7.5-9.0	0.3-14
962: Surnuf gravelly loam, high elevation-----	0-0.5	---	---	---	---	---
	0.5-6	10-18	14.00-30.00	0.11-0.14	0.0-1.0	4.0-6.0
	6-10	18-25	4.00-14.00	0.13-0.17	1.0-3.0	1.0-2.0
	10-20	35-40	1.40-4.00	0.11-0.17	6.0-7.5	0.8-1.0
	20-28	35-40	1.40-4.00	0.11-0.17	6.0-7.5	0.8-1.0
	28-38	40-60	1.10-4.00	0.09-0.14	7.5-9.0	0.3-14
	38-52	40-60	0.90-4.00	0.09-0.14	7.5-9.0	0.3-14
	52-67	40-60	0.60-4.00	0.09-0.14	7.5-9.0	0.3-14
	67-84	40-60	0.42-4.00	0.09-0.14	7.5-9.0	0.3-14
963: Surnuf gravelly loam, high elevation-----	0-0.5	---	---	---	---	---
	0.5-6	10-18	14.00-30.00	0.11-0.14	0.0-1.0	4.0-6.0
	6-10	18-25	4.00-14.00	0.13-0.17	1.0-3.0	1.0-2.0
	10-20	35-40	1.40-4.00	0.11-0.17	6.0-7.5	0.8-1.0
	20-28	35-40	1.40-4.00	0.11-0.17	6.0-7.5	0.8-1.0
	28-38	40-60	1.10-4.00	0.09-0.14	7.5-9.0	0.3-14
	38-52	40-60	0.90-4.00	0.09-0.14	7.5-9.0	0.3-14
	52-67	40-60	0.60-4.00	0.09-0.14	7.5-9.0	0.3-14
	67-84	40-60	0.42-4.00	0.09-0.14	7.5-9.0	0.3-14
990. Riverwash, frequently flooded						
991: Xerofluvents sandy loam, frequently flooded-----	0-6	2-10	14.00-42.00	0.02-0.11	0.0-0.0	1.0-4.0
	6-14	1-8	14.00-42.00	0.01-0.11	0.0-0.0	0.3-2.0
	14-26	1-8	14.00-42.00	0.01-0.11	0.0-0.0	0.3-2.0
	26-37	1-8	14.00-42.00	0.01-0.11	0.0-0.0	0.3-2.0
	37-43	4-12	14.00-42.00	0.07-0.14	0.0-0.0	1.0-4.0
	43-47	1-8	14.00-42.00	0.01-0.11	0.0-0.0	0.3-2.0
	47-54	1-8	14.00-42.00	0.01-0.11	0.0-0.0	0.3-2.0
	54-72	1-8	14.00-42.00	0.01-0.11	0.0-0.0	0.3-2.0
	72-80	1-8	14.00-42.00	0.01-0.11	0.0-0.0	0.3-2.0
995. Pits, gravel						
996. Dumps, excavated material						
997. Pits						

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
998. Dumps, landfill						
999. Water						
DAM. Dam, manmade						

Table 22.--Erosion Properties of the Soils

(See text for definitions of terms used in this table. Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
100: Anita clay-----	0-1	.28	.28	1	4	86
	1-3	.28	.28			
	3-10	.28	.28			
	10-15	.28	.28			
	15-20	.02	.02			
Galt clay-----	0-3	.24	.24	2	4	86
	3-13	.28	.28			
	13-29	.32	.32			
	29-32	.32	.32			
	32-39	.02	.02			
104: Bosquejo clay-----	0-8	.28	.28	5	4	86
	8-19	.28	.28			
	19-24	.28	.28			
	24-37	.43	.43			
	37-44	.43	.43			
	44-46	.49	.49			
	46-60	.43	.43			
105: Busacca clay loam-----	0-3	.32	.32	5	4	86
	3-8	.32	.32			
	8-16	.32	.32			
	16-28	.37	.37			
	28-43	.37	.37			
	43-60	.32	.32			
	60-72	.32	.32			
108: Tuscan gravelly loam-----	0-2	.17	.28	2	7	48
	2-4	.24	.32			
	4-7	.24	.37			
	7-11	.15	.32			
	11	.02	.02			
Igo gravelly loam-----	0-1	.24	.37	1	7	48
	1-5	.24	.37			
	5-9	.17	.32			
	9	.02	.02			
Anita clay-----	0-1	.28	.28	1	4	86
	1-3	.24	.24			
	3-10	.24	.24			
	10-15	.24	.24			
	15-20	.02	.02			
109: Bosquejo clay loam-----	0-5	.32	.32	5	4	86
	5-24	.28	.28			
	24-40	.28	.28			
	40-60	.49	.49			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
110: Bosquejo silt loam, overwash, occasionally flooded-----	0-8	.28	.28	5	6	48
	8-22	.28	.28			
	22-40	.32	.32			
	40-55	.32	.37			
	55-70	.43	.43			
111yu: Auburn loam-----	0-17	.32	.37	1	5	56
	17	---	---			
Sobrante loam-----	0-5	.32	.37	2	5	56
	5-27	.32	.37			
	27-39	---	---			
	39	---	---			
114yu: Auburn gravelly loam-----	0-17	.20	.37	1	6	48
	17	---	---			
Sobrante gravelly loam-----	0-5	.24	.37	2	6	48
	5-35	.20	.32			
	35-40	---	---			
	40	---	---			
118: Xerorthents, tailings-----	0-3	.05	.28	5	4L	86
	3-8	.05	.28			
	8-21	.20	.28			
	21-26	.24	.28			
	26-35	.28	.28			
	35-48	.28	.28			
	48-59	.28	.28			
	59-81	.28	.28			
118co: Clear Lake clay, frequently flooded----	0-4	.24	.24	5	4	86
	4-10	.24	.24			
	10-20	.24	.24			
	20-34	.24	.24			
	34-47	.24	.24			
	47-59	.24	.24			
	59-79	.24	.24			
119: Xerorthents, tailings-----	0-3	.05	.28	5	4L	86
	3-8	.05	.28			
	8-21	.20	.28			
	21-26	.24	.28			
	26-35	.28	.28			
	35-48	.28	.28			
	48-59	.28	.28			
	59-81	.28	.28			
Urban land.						

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
119yu:						
Auburn gravelly loam-----	0-17	.20	.37	1	6	48
	17	---	---			
Sobrante gravelly loam-----	0-5	.24	.37	2	6	48
	5-35	.20	.32			
	35-40	---	---			
	40	---	---			
Rock outcrop.						
120:						
Gridley taxadjunct clay loam-----	0-4	.32	.32	3	4	86
	4-9	.28	.28			
	9-15	.32	.32			
	15-21	.32	.32			
	21-60	.02	.02			
121:						
Boga loam-----	0-3	.43	.43	5	6	48
	3-6	.37	.37			
	6-14	.32	.32			
	14-29	.32	.32			
	29-53	.32	.32			
	53-73	.37	.37			
	73-80	.02	.02			
Loemstone loam-----	0-2	.43	.43	4	6	48
	2-4	.43	.43			
	4-10	.43	.43			
	10-18	.37	.37			
	18-23	.37	.37			
	23-32	.43	.43			
	32-40	.43	.43			
	40-48	.43	.43			
	48-57	.02	.02			
121su:						
Columbia fine sandy loam, frequently flooded-----	0-14	.32	.32	5	3	86
	14-60	.32	.32			
125:						
Gridley taxadjunct loam-----	0-10	.32	.32	3	5	56
	10-20	.28	.28			
	20-22	.28	.28			
	22-60	.02	.02			
Calcic Haploxerolls sandy loam-----	0-5	.20	.20	4	3	86
	5-17	.20	.20			
	17-20	.24	.24			
	20-33	.24	.24			
	33-44	.24	.24			
	44-72	.02	.02			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
126:						
Liveoak sandy loam-----	0-4	.20	.20	5	3	86
	4-17	.17	.17			
	17-37	.20	.20			
	37-48	.28	.28			
	48-61	.15	.20			
	61-71	.15	.17			
	71-75	.10	.17			
127:						
Gridley taxadjunct loam-----	0-10	.32	.32	3	5	56
	10-20	.28	.28			
	20-22	.28	.28			
	22-60	.02	.02			
130:						
Eastbiggs loam-----	0-3	.37	.37	3	6	48
	3-10	.37	.37			
	10-17	.43	.43			
	17-27	.28	.28			
	27-34	.02	.02			
	34-60	.02	.02			
133:						
Eastbiggs loam-----	0-3	.37	.37	3	6	48
	3-10	.37	.37			
	10-17	.43	.43			
	17-27	.28	.28			
	27-34	.02	.02			
	34-60	.02	.02			
Galt clay loam-----	0-6	.32	.32	2	4	86
	6-20	.37	.37			
	20-27	.37	.37			
	27-30	.37	.37			
	30	.02	.02			
136:						
Duric Xerarents, cut-----	0-3	.37	.37	2	4	86
	3-8	.37	.37			
	8-10	.37	.37			
	10-13	.28	.28			
	13	.02	.02			
Duric Xerarents, fill-----	0-5	.32	.32	4	4	86
	5-12	.37	.37			
	12-16	.28	.28			
	16-30	.32	.32			
	30-38	.28	.28			
	38-48	.28	.28			
	48	.02	.02			
Eastbiggs fine sandy loam, leveled----	0-5	.24	.24	3	3	86
	5-12	.17	.17			
	12-18	.24	.24			
	18-23	.24	.24			
	23-26	.43	.43			
	26-30	.32	.32			
	30	.02	.02			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
138su:						
Liveoak sandy clay loam-----	0-13	.17	.17	5	5	56
	13-53	.17	.17			
	53-60	.20	.17			
139su:						
Liveoak taxadjunct loam, frequently flooded-----	0-6	.37	.37	3	6	48
	6-54	.37	.37			
	54-63	.02	.02			
	63-73	.37	.37			
Galt taxadjunct clay loam, frequently flooded-----	0-21	.32	.32	2	5	56
	21-22	.02	.02			
	22-25	.37	.37			
	25-26	.02	.02			
	26	---	---			
143su:						
Marcum clay loam-----	0-16	.32	.32	4	4	86
	16-28	.37	.37			
	28-40	.28	.28			
	40-43	.32	.32			
	43-62	---	---			
Gridley clay loam-----	0-19	.32	.32	3	6	48
	19-37	.28	.28			
	37	---	---			
149yu:						
Flanly sandy loam-----	0-9	.24	.28	3	3	86
	9-16	.24	.28			
	16-34	.32	.32			
	34-38	---	---			
150:						
Columbia stratified sand to fine sandy loam-----	0-5	.15	.15	5	3	86
	5-10	.24	.24			
	10-29	.49	.49			
	29-37	.37	.37			
	37-46	.15	.15			
	46-60	.43	.43			
150su:						
Olashes sandy loam-----	0-4	.28	.28	4	3	86
	4-52	.32	.37			
	52-60	.20	.17			
151yu:						
Flanly sandy loam-----	0-9	.24	.28	3	3	86
	9-16	.24	.28			
	16-34	.32	.32			
	34-38	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
152: Gianella fine sandy loam, frequently flooded-----	0-6	.28	.28	5	3	86
	6-15	.55	.55			
	15-20	.28	.28			
	20-22	.55	.55			
	22-27	.55	.55			
	27-32	.28	.28			
	32-43	.32	.32			
	43-64	.32	.32			
	64-80	.32	.32			
153: Gianella sandy loam, frequently flooded-----	0-6	.32	.32	5	3	86
	6-17	.43	.43			
	17-24	.43	.43			
	24-29	.37	.37			
	29-32	.28	.28			
	32-43	.37	.37			
	43-57	.37	.37			
	57-67	.37	.37			
	67-68	.37	.37			
	68-71	.43	.43			
	71-80	.43	.43			
	80-84	.43	.43			
154: Gianella silt loam, frequently flooded	0-2	.37	.37	5	5	56
	2-8	.24	.24			
	8-15	.37	.37			
	15-22	.32	.32			
	22-31	.28	.28			
	31-41	.43	.43			
	41-50	.55	.55			
	50-54	.55	.55			
	54-64	.55	.55			
	64-66	.55	.55			
	66-69	.43	.43			
	69-83	.20	.20			
158: Gianella fine sandy loam, occasionally flooded-----	0-3	.24	.24	5	3	86
	3-12	.24	.24			
	12-19	.32	.32			
	19-28	.24	.24			
	28-48	.32	.32			
	48-57	.17	.17			
	57-80	.20	.20			
160: Gianella loam, occasionally flooded----	0-18	.37	.37	5	6	48
	18-42	.32	.32			
	42-52	.32	.32			
	52-70	.32	.32			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
161: Gianella fine sandy loam, rarely flooded-----	0-3	.24	.24	5	3	86
	3-12	.24	.24			
	12-19	.32	.32			
	19-28	.24	.24			
	28-48	.32	.32			
	48-57	.17	.17			
	57-80	.20	.20			
162: Gianella loam, rarely flooded-----	0-18	.37	.37	5	6	48
	18-42	.32	.32			
	42-52	.32	.32			
	52-70	.32	.32			
163yu: Holillipah loamy sand-----	0-6	.17	.20	5	2	134
	6-66	.17	.17			
165yu: Holland loam-----	0-15	.32	.32	5	5	56
	15-65	.24	.24			
Hoda loam-----	0-7	.28	.28	5	5	56
	7-14	.28	.28			
	14-72	.24	.24			
Hotaw loam-----	0-12	.28	.28	3	5	56
	12-34	.24	.37			
	34	---	---			
173yu: Hotaw loam-----	0-12	.28	.28	3	5	56
	12-34	.24	.37			
	34	---	---			
Chawanakee gravelly sandy loam-----	0-1	---	---	2	3	86
	1-2	---	---			
	2-5	.37	.55			
	5-11	.37	.55			
	11-19	.28	.55			
	19	---	---			
Holland loam-----	0-15	.32	.32	5	5	56
	15-65	.24	.24			
175: Farwell clay loam, rarely flooded-----	0-5	.32	.32	5	6	48
	5-9	.32	.32			
	9-18	.37	.37			
	18-26	.37	.37			
	26-33	.37	.37			
	33-43	.32	.32			
	43-57	.37	.37			
	57-72	.37	.37			
	72-81	.43	.43			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
176:						
Farwell loam, occasionally flooded-----	0-6	.32	.32	5	6	48
	6-20	.32	.32			
	20-36	.37	.37			
	36-50	.32	.32			
	50-60	.37	.37			
176yu:						
Jocal loam-----	0-8	.32	.37	5	6	48
	8-73	.32	.43			
177:						
Farwell silt loam, occasionally flooded-----	0-6	.43	.43	5	6	48
	6-11	.37	.37			
	11-22	.49	.49			
	22-33	.37	.37			
	33-39	.37	.37			
	39-49	.49	.49			
	49-62	.43	.43			
178:						
Arbuckle gravelly loam-----	0-4	.28	.43	5	7	38
	4-9	.32	.49			
	9-20	.32	.49			
	20-32	.37	.49			
	32-49	.32	.49			
	49-68	.05	.24			
	68-86	.05	.24			
179:						
Moda taxadjunct loam-----	0-2	.32	.43	2	5	56
	2-6	.32	.43			
	6-13	.37	.49			
	13-22	.32	.32			
	22	.02	.02			
Arbuckle gravelly loam-----	0-4	.28	.43	5	7	38
	4-9	.32	.49			
	9-20	.32	.49			
	20-32	.37	.49			
	32-49	.32	.49			
	49-68	.05	.24			
	68-86	.05	.24			
180:						
Dodgeland silty clay loam, occasionally flooded-----	0-4	.37	.37	5	4	86
	4-8	.37	.37			
	8-18	.37	.37			
	18-33	.37	.37			
	33-45	.37	.37			
	45-53	.43	.43			
	53-60	.43	.43			
	60-70	.43	.43			
	70-80	.43	.43			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
181: Dodgeland silty clay loam, frequently flooded-----	0-4	.37	.37	5	4	86
	4-8	.37	.37			
	8-18	.37	.37			
	18-33	.37	.37			
	33-45	.37	.37			
	45-53	.43	.43			
	53-60	.43	.43			
	60-70	.43	.43			
	70-80	.43	.43			
188yu: Mariposa taxadjunct gravelly loam-----	0-4	.20	.37	2	4	86
	4-23	.20	.37			
	23	---	---			
189: Esquon silt loam, overwash-----	0-4	.49	.49	4	5	56
	4-9	.49	.49			
	9-15	.55	.55			
	15-35	.32	.32			
	35-48	.37	.37			
	48-60	.43	.43			
	60	.02	.02			
189yu: Mariposa taxadjunct gravelly loam-----	0-4	.20	.37	2	4	86
	4-23	.20	.37			
	23	---	---			
196yu: Mildred cobbly loam-----	0-3	.37	.37	3	7	38
	3-9	.32	.43			
	9-23	.28	.37			
	23	---	---			
200: Parrott silt loam, occasionally flooded-----	0-2	.28	.28	5	5	56
	2-8	.43	.43			
	8-20	.43	.43			
	20-37	.43	.43			
	37-49	.49	.49			
	49-63	.49	.49			
	63-89	.55	.55			
201: Parrott silt loam, frequently flooded--	0-2	.28	.28	5	5	56
	2-8	.43	.43			
	8-20	.43	.43			
	20-37	.43	.43			
	37-49	.49	.49			
	49-63	.49	.49			
	63-89	.55	.55			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
203: Kusalslough silty clay loam, occasionally flooded-----	0-4	.43	.43	5	7	86
	4-12	.43	.43			
	12-21	.49	.49			
	21-31	.43	.43			
	31-41	.43	.43			
	41-57	.43	.43			
	57-69	.32	.32			
	69-80	.32	.32			
205: Parrott silt loam, frequently flooded--	0-2	.28	.28	5	5	56
	2-8	.43	.43			
	8-20	.43	.43			
	20-37	.43	.43			
	37-49	.49	.49			
	49-63	.49	.49			
	63-89	.55	.55			
Vermet silt loam, frequently flooded---	0-2	.37	.37	5	5	56
	2-8	.49	.49			
	8-13	.49	.49			
	13-16	.43	.43			
	16-26	.49	.49			
	26-41	.49	.49			
	41-62	.49	.49			
	62-72	.49	.49			
206: Islandbar sandy loam-----	0-2	---	---	5	3	86
	2-5	.49	.55			
	5-9	.49	.55			
	9-27	.49	.55			
	27-36	.49	.55			
	36-47	.49	.55			
	47-58	.55	.55			
	58-62	.55	.55			
	62-72	.55	.55			
Chawanakee gravelly sandy loam-----	0-1	---	---	2	4	86
	1-2	---	---			
	2-5	.37	.55			
	5-11	.37	.55			
	11-19	.28	.55			
	19	---	---			
207: Islandbar sandy loam-----	0-2	---	---	5	3	86
	2-5	.49	.55			
	5-9	.49	.55			
	9-27	.49	.55			
	27-36	.49	.55			
	36-47	.49	.55			
	47-58	.55	.55			
	58-62	.55	.55			
	62-72	.55	.55			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
207:						
Chawanakee gravelly sandy loam-----	0-1	---	---	2	4	86
	1-2	---	---			
	2-5	.37	.55			
	5-11	.37	.55			
	11-19	.28	.55			
	19	---	---			
208:						
Islandbar sandy loam-----	0-2	---	---	5	3	86
	2-5	.49	.55			
	5-9	.49	.55			
	9-27	.49	.55			
	27-36	.49	.55			
	36-47	.49	.55			
	47-58	.55	.55			
	58-62	.55	.55			
	62-72	.55	.55			
Chawanakee gravelly sandy loam-----	0-1	---	---	2	4	86
	1-2	---	---			
	2-5	.37	.55			
	5-11	.37	.55			
	11-19	.28	.55			
	19	---	---			
209:						
Islandbar sandy loam-----	0-2	---	---	5	3	86
	2-5	.49	.55			
	5-9	.49	.55			
	9-27	.49	.55			
	27-36	.49	.55			
	36-47	.49	.55			
	47-58	.55	.55			
	58-62	.55	.55			
	62-72	.55	.55			
Chawanakee gravelly sandy loam-----	0-1	---	---	2	4	86
	1-2	---	---			
	2-5	.37	.55			
	5-11	.37	.55			
	11-19	.28	.55			
	19	---	---			
210:						
Featherfalls sandy loam-----	0-1	---	---	5	3	86
	1-4	.43	.55			
	4-7	.43	.55			
	7-17	.24	.28			
	17-24	.24	.28			
	24-32	.24	.28			
	32-42	.28	.28			
	42-61	.28	.28			
	61-72	.28	.28			
	72-80	.10	.28			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
210: Islandbar sandy loam-----	0-2	---	---	5	3	86
	2-5	.49	.55			
	5-9	.49	.55			
	9-27	.49	.55			
	27-36	.49	.55			
	36-47	.49	.55			
	47-58	.55	.55			
	58-62	.55	.55			
	62-72	.55	.55			
211: Featherfalls sandy loam-----	0-1	---	---	5	3	86
	1-4	.43	.55			
	4-7	.43	.55			
	7-17	.24	.28			
	17-24	.24	.28			
	24-32	.24	.28			
	32-42	.28	.28			
	42-61	.28	.28			
	61-72	.28	.28			
	72-80	.10	.28			
Islandbar sandy loam-----	0-2	---	---	5	3	86
	2-5	.49	.55			
	5-9	.49	.55			
	9-27	.49	.55			
	27-36	.49	.55			
	36-47	.49	.55			
	47-58	.55	.55			
	58-62	.55	.55			
	62-72	.55	.55			
212: Featherfalls sandy loam-----	0-1	---	---	5	3	86
	1-4	.43	.55			
	4-7	.43	.55			
	7-17	.24	.28			
	17-24	.24	.28			
	24-32	.24	.28			
	32-42	.28	.28			
	42-61	.28	.28			
	61-72	.28	.28			
	72-80	.10	.28			
Islandbar sandy loam-----	0-2	---	---	5	3	86
	2-5	.49	.55			
	5-9	.49	.55			
	9-27	.49	.55			
	27-36	.49	.55			
	36-47	.49	.55			
	47-58	.55	.55			
	58-62	.55	.55			
	62-72	.55	.55			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
213:						
Featherfalls sandy loam-----	0-1	---	---	5	3	86
	1-4	.43	.55			
	4-7	.43	.55			
	7-17	.24	.28			
	17-24	.24	.28			
	24-32	.24	.28			
	32-42	.28	.28			
	42-61	.28	.28			
	61-72	.28	.28			
	72-80	.10	.28			
Islandbar sandy loam-----	0-2	---	---	5	3	86
	2-5	.49	.55			
	5-9	.49	.55			
	9-27	.49	.55			
	27-36	.49	.55			
	36-47	.49	.55			
	47-58	.55	.55			
	58-62	.55	.55			
	62-72	.55	.55			
214:						
Crystalhill gravelly coarse sandy loam	0-2	---	---	5	4	86
	2-7	.32	.55			
	7-14	.37	.55			
	14-22	.32	.55			
	22-33	.37	.55			
	33-44	.28	.55			
	44-66	.43	.55			
	66	---	---			
Oregongulch gravelly sandy loam-----	0-1	---	---	3	4	86
	1-4	.28	.55			
	4-7	.37	.55			
	7-13	.32	.55			
	13-18	.28	.55			
	18-24	.20	.55			
	24-60	---	---			
Craigsaddle coarse sandy loam-----	0-5	.55	.55	4	3	86
	5-11	.55	.55			
	11-17	.49	.55			
	17-21	.49	.55			
	21-31	.32	.37			
	31-51	.28	.37			
	51-58	.17	.32			
	58-80	---	---			
Rock outcrop, trondhjemite.						
215:						
Crystalhill gravelly coarse sandy loam	0-2	---	---	5	4	86
	2-7	.32	.55			
	7-14	.37	.55			
	14-22	.32	.55			
	22-33	.37	.55			
	33-44	.28	.55			
	44-66	.43	.55			
	66	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
215:						
Oregongulch gravelly sandy loam-----	0-1	---	---	3	4	86
	1-4	.28	.55			
	4-7	.37	.55			
	7-13	.32	.55			
	13-18	.28	.55			
	18-24	.20	.55			
	24-60	---	---			
Craigsaddle coarse sandy loam-----	0-5	.55	.55	4	3	86
	5-11	.55	.55			
	11-17	.49	.55			
	17-21	.49	.55			
	21-31	.32	.37			
	31-51	.28	.37			
	51-58	.17	.32			
	58-80	---	---			
Rock outcrop, trondhjemite.						
216:						
Crystalhill gravelly coarse sandy loam	0-2	---	---	5	4	86
	2-7	.32	.55			
	7-14	.37	.55			
	14-22	.32	.55			
	22-33	.37	.55			
	33-44	.28	.55			
	44-66	.43	.55			
	66	---	---			
Oregongulch gravelly sandy loam-----	0-1	---	---	3	4	86
	1-4	.28	.55			
	4-7	.37	.55			
	7-13	.32	.55			
	13-18	.28	.55			
	18-24	.20	.55			
	24-60	---	---			
Craigsaddle coarse sandy loam-----	0-5	.55	.55	4	3	86
	5-11	.55	.55			
	11-17	.49	.55			
	17-21	.49	.55			
	21-31	.32	.37			
	31-51	.28	.37			
	51-58	.17	.32			
	58-80	---	---			
Rock outcrop, trondhjemite.						
217:						
Crystalhill gravelly coarse sandy loam	0-2	---	---	5	4	86
	2-7	.32	.55			
	7-14	.37	.55			
	14-22	.32	.55			
	22-33	.37	.55			
	33-44	.28	.55			
	44-66	.43	.55			
	66	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
217:						
Oregongulch gravelly sandy loam-----	0-1	---	---	3	4	86
	1-4	.28	.55			
	4-7	.37	.55			
	7-13	.32	.55			
	13-18	.28	.55			
	18-24	.20	.55			
	24-60	---	---			
Craigsaddle coarse sandy loam-----	0-5	.55	.55	4	3	86
	5-11	.55	.55			
	11-17	.49	.55			
	17-21	.49	.55			
	21-31	.32	.37			
	31-51	.28	.37			
	51-58	.17	.32			
	58-80	---	---			
Rock outcrop, trondhjemite.						
218:						
Rock outcrop, quartz diorite.						
Lithic Xerorthents gravelly sandy loam	0-2	---	---	1	4	86
	2-4	.37	.55			
	4-8	.43	.55			
	8	---	---			
Chawanakee gravelly sandy loam-----	0-1	---	---	2	4	86
	1-2	---	---			
	2-5	.37	.55			
	5-11	.37	.55			
	11-19	.28	.55			
	19	---	---			
219:						
Rock outcrop, quartz diorite.						
Lithic Xerorthents gravelly sandy loam	0-2	---	---	1	4	86
	2-4	.37	.55			
	4-8	.43	.55			
	8	---	---			
Chawanakee gravelly sandy loam-----	0-1	---	---	2	4	86
	1-2	---	---			
	2-5	.37	.55			
	5-11	.37	.55			
	11-19	.28	.55			
	19	---	---			
220:						
Esquon clay, frequently flooded-----	0-10	.28	.28	4	4	86
	10-22	.32	.32			
	22-40	.32	.32			
	40-50	.43	.43			
	50	.02	.02			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
220:						
Clear Lake silty clay loam, overwash---	0-0.5	.32	.32	5	4	86
	0.5-7	.32	.32			
	7-19	.37	.37			
	19-29	.37	.37			
	29-40	.49	.49			
	40-55	.49	.49			
	55-80	.49	.49			
221yu:						
Sites loam-----	0-6	.28	.37	5	5	56
	6-16	.28	.43			
	16-51	.28	.37			
	51-61	.32	.43			
	61	---	---			
222yu:						
Sites loam-----	0-6	.28	.37	5	5	56
	6-16	.28	.43			
	16-51	.28	.37			
	51-61	.32	.43			
	61	---	---			
225yu:						
Sites gravelly loam, bedrock substratum-----	0-5	.24	.37	4	6	48
	5-53	.17	.37			
	53	---	---			
226yu:						
Sites gravelly loam, bedrock substratum-----	0-5	.24	.37	4	6	48
	5-53	.17	.37			
	53	---	---			
227yu:						
Sites gravelly loam, bedrock substratum-----	0-5	.24	.37	4	6	48
	5-53	.17	.37			
	53	---	---			
242yu:						
Surnuf loam-----	0-12	.32	.37	5	6	48
	12-77	.24	.37			
243yu:						
Surnuf loam-----	0-12	.32	.37	5	6	48
	12-77	.24	.37			
244yu:						
Surnuf loam-----	0-12	.32	.37	5	6	48
	12-77	.24	.37			
245:						
Surnuf loam-----	0-12	.32	.37	5	6	48
	12-77	.24	.37			
248yu:						
Trainer loam-----	0-9	.32	.32	5	6	48
	9-36	.32	.32			
	36-66	.32	.32			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
250:						
Llanoseco, occasionally flooded-----	0-8	.37	.37	5	4	86
	8-18	.37	.37			
	18-28	.43	.43			
	28-41	.43	.43			
	41-57	.43	.43			
	57-71	.49	.49			
	71-83	.49	.49			
	83-89	.49	.49			
	89-93	.02	.02			
252:						
Whitecabin silty clay, occasionally flooded-----	0-5	.32	.32	4	4	86
	5-13	.32	.32			
	13-26	.32	.32			
	26-35	.32	.32			
	35-45	.37	.37			
	45-53	.37	.37			
	53-63	.02	.02			
	63-72	.02	.02			
Ordferry silty clay, occasionally flooded-----	0-3	.32	.32	2	4	86
	3-6	.37	.37			
	6-13	.32	.32			
	13-25	.37	.37			
	25-29	.43	.43			
	29-33	.02	.02			
	33-40	.02	.02			
252yu:						
Woodleaf gravelly loam-----	0-9	.20	.37	2	7	38
	9-28	.10	.37			
	28	---	---			
253yu:						
Woodleaf gravelly loam-----	0-9	.20	.37	2	7	38
	9-28	.10	.37			
	28	---	---			
255:						
Whitecabin silty clay loam, occasionally flooded-----	0-8	.37	.37	4	4	86
	8-20	.32	.32			
	20-44	.32	.32			
	44-60	.02	.02			
Ordferry silty clay, occasionally flooded-----	0-3	.32	.32	2	4	86
	3-6	.37	.37			
	6-13	.32	.32			
	13-25	.37	.37			
	25-29	.43	.43			
	29-33	.02	.02			
	33-40	.02	.02			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
256: Whitecabin silt loam, occasionally flooded-----	0-6	.43	.43	4	6	48
	6-13	.32	.32			
	13-27	.32	.32			
	27-42	.32	.32			
	42-54	.37	.37			
	54-62	.02	.02			
257: Llanoseco, frequently flooded-----	0-8	.37	.37	5	4	86
	8-18	.37	.37			
	18-28	.43	.43			
	28-41	.43	.43			
	41-57	.43	.43			
	57-71	.49	.49			
	71-83	.49	.49			
	83-89	.49	.49			
	89-93	.02	.02			
258: Codora, occasionally flooded-----	0-6	.37	.37	5	4	86
	6-11	.37	.37			
	11-22	.37	.37			
	22-38	.43	.43			
	38-60	.43	.43			
260: Ordferry silty clay, occasionally flooded-----	0-3	.32	.32	2	4	86
	3-6	.37	.37			
	6-13	.32	.32			
	13-25	.37	.37			
	25-29	.43	.43			
	29-33	.02	.02			
	33-40	.02	.02			
280: Columbia taxadjunct stratified very fine sandy loam-----	0-8	.24	.24	5	3	86
	8-10	.28	.28			
	10-19	.24	.24			
	19-30	.24	.24			
	30-40	.55	.55			
	40-60	.55	.55			
290: Perkins gravelly loam-----	0-8	.24	.43	5	6	48
	8-24	.24	.43			
	24-38	.05	.32			
	38-48	.05	.32			
	48-73	.15	.24			
300: Redsluff gravelly loam-----	0-2	.15	.28	3	7	48
	2-5	.17	.32			
	5-12	.20	.32			
	12-21	.15	.32			
	21-29	.20	.37			
	29-37	.20	.37			
	37-42	.05	.20			
	42-80	.02	.15			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
301:						
Wafap gravelly loam-----	0-1	.15	.28	4	7	38
	1-5	.15	.32			
	5-13	.10	.28			
	13-32	.02	.28			
	32-39	.02	.28			
	39-46	.02	.15			
	46	.02	.02			
Hamslough clay-----	0-3	.17	.20	2	4	86
	3-14	.15	.24			
	14-19	.05	.28			
	19-27	.02	.15			
	27	.02	.02			
302:						
Redtough loam-----	0-1	.24	.28	1	5	56
	1-7	.24	.37			
	7-13	.17	.37			
	13	.02	.02			
Redswale cobbly loam-----	0-1	.17	.32	1	6	56
	1-7	.17	.43			
	7	.02	.02			
303:						
Munjar gravelly loam-----	0-2	.24	.32	2	6	48
	2-5	.17	.37			
	5-9	.24	.37			
	9-16	.17	.37			
	16-22	.10	.43			
	22-31	.05	.28			
	31-46	.02	.02			
Tuscan taxadjunct gravelly clay loam---	0-2	.20	.28	2	5	56
	2-5	.24	.32			
	5-13	.24	.32			
	13-23	.20	.32			
	23-29	.10	.37			
	29	.02	.02			
Galt clay-----	0-3	.24	.24	2	4	86
	3-13	.28	.28			
	13-29	.32	.32			
	29-32	.32	.32			
	32-39	.02	.02			
304:						
Redtough loam-----	0-1	.24	.28	1	5	56
	1-7	.24	.37			
	7-13	.17	.37			
	13	.02	.02			
305:						
Redtough gravelly loam-----	0-2	.24	.37	1	6	48
	2-5	.20	.32			
	5-8	.20	.32			
	8-15	.24	.28			
	15	.02	.02			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
305:						
Redswale loam-----	0-1	.37	.37	1	5	56
	1-5	.15	.32			
	5	.02	.02			
Anita, gravelly duripan-----	0-3	.17	.24	2	5	56
	3-8	.15	.28			
	8-15	.17	.28			
	15	.02	.02			
306:						
Duric Xerarents, fill-----	0-8	.43	.43	2	6	48
	8-14	.20	.20			
	14-20	.28	.28			
	20-36	.24	.24			
	36-40	.32	.32			
	40	.02	.02			
Duric Xerarents, cut-----	0-13	.24	.24	1	3	86
	13-15	.20	.28			
	15	.02	.02			
307:						
Duric Xerarents clay loam, leveled----	0-2	.32	.32	1	3	86
	2-12	.28	.28			
	12	.02	.02			
310:						
Kimball loam-----	0-2	.37	.37	3	5	56
	2-4	.43	.43			
	4-6	.43	.43			
	6-10	.43	.43			
	10-17	.43	.43			
	17-34	.32	.32			
	34-46	.24	.24			
	46-64	.24	.24			
317:						
Thompsonflat loam-----	0-2	.32	.43	5	5	56
	2-5	.28	.49			
	5-12	.32	.49			
	12-19	.28	.49			
	19-29	.17	.43			
	29-35	.10	.32			
	35-43	.05	.28			
	43-80	.05	.28			
318:						
Thompsonflat fine sandy loam-----	0-3	.20	.28	5	3	86
	3-7	.17	.20			
	7-11	.15	.20			
	11-15	.10	.17			
	15-22	.10	.24			
	22-35	.05	.28			
	35-45	.05	.28			
	45-53	.05	.28			
	53-66	.05	.28			
	66-80	.02	.28			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
318:						
Oroville gravelly fine sandy loam-----	0-2	.24	.37	2	4	86
	2-6	.15	.24			
	6-13	.20	.32			
	13-17	.15	.28			
	17-23	.10	.20			
	23-31	.02	.02			
	31-60	.02	.02			
320:						
Vistarobles sandy loam-----	0-5	.17	.20	1	3	86
	5-10	.15	.17			
	10-14	.10	.15			
	14-34	.02	.02			
	34-40	.10	.20			
Redding loam-----	0-4	.28	.32	2	6	48
	4-11	.28	.32			
	11-24	.28	.32			
	24-35	.17	.20			
	35-40	.02	.02			
321:						
Durixeralfs, fine-loamy, gravelly fine sandy loam-----	0-1	.17	.32	2	4	86
	1-5	.15	.32			
	5-10	.20	.37			
	10-18	.20	.37			
	18-24	.10	.32			
	24-27	.05	.24			
	27	.02	.02			
Durixeralfs, loamy-skeletal, gravelly fine sandy loam-----	0-1	.20	.32	1	4	86
	1-4	.24	.43			
	4-9	.10	.37			
	9	.02	.02			
Typic Petraquepts silty clay-----	0-3	.24	.32	1	4	86
	3-11	.15	.32			
	11	.02	.02			
330:						
Wilsoncreek loam, occasionally flooded	0-7	.37	.37	5	5	56
	7-14	.37	.37			
	14-25	.37	.37			
	25-34	.32	.32			
	34-44	.32	.32			
	44-60	.32	.32			
Trainer loam, occasionally flooded-----	0-7	.37	.37	5	5	56
	7-13	.37	.37			
	13-26	.43	.43			
	26-36	.43	.43			
	36-46	.24	.24			
	46-61	.28	.28			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
331: Thompsonflat loam-----	0-2	.32	.43	5	5	56
	2-5	.28	.49			
	5-12	.32	.49			
	12-19	.28	.49			
	19-29	.17	.43			
	29-35	.10	.32			
	35-43	.05	.28			
	43-80	.05	.28			
335: Galt clay loam-----	0-6	.32	.32	2	4	86
	6-20	.37	.37			
	20-27	.37	.37			
	27-30	.37	.37			
	30	.02	.02			
336: Galt clay-----	0-3	.24	.24	2	4	86
	3-13	.28	.28			
	13-29	.32	.32			
	29-32	.32	.32			
	32-39	.02	.02			
337: Galt clay loam-----	0-6	.32	.32	2	4	86
	6-20	.37	.37			
	20-27	.37	.37			
	27-30	.37	.37			
	30	.02	.02			
338: Oxyaquic Xerofluvents silt loam-----	0-6	.49	.49	5	3	86
	6-20	.55	.55			
	20-32	.24	.24			
	32-36	.28	.28			
	36-46	.24	.24			
	46-50	.55	.55			
	50-55	.28	.28			
	55-60	.55	.55			
339: Oxyaquic Xerofluvents sandy loam, frequently flooded-----	0-8	.20	.20	5	3	86
	8-12	.24	.24			
	12-16	.37	.37			
	16-60	.24	.24			
340: Rock outcrop, Lovejoy basalt.						
Thermalrocks very gravelly loam-----	0-1	.10	.28	1	6	48
	1-5	.05	.28			
	5	---	---			
Campbellhills gravelly loam-----	0-2	.15	.28	3	6	48
	2-7	.15	.28			
	7-17	.10	.32			
	17-29	.10	.32			
	29-39	.05	.37			
	39-50	.02	.37			
	50	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
341:						
Elsey loam-----	0-3	.20	.28	2	5	56
	3-8	.17	.28			
	8-17	.17	.37			
	17-25	.17	.37			
	25-32	.17	.43			
	32-38	.15	.43			
	38	---	---			
Beatsonhollow gravelly loam-----	0-3	.20	.28	1	6	48
	3-10	.10	.24			
	10-17	.10	.37			
	17	---	---			
Campbellhills gravelly loam-----	0-2	.15	.28	3	6	48
	2-7	.15	.28			
	7-17	.10	.32			
	17-29	.10	.32			
	29-39	.05	.37			
	39-50	.02	.37			
	50	---	---			
Rock outcrop, Lovejoy basalt.						
342:						
Thermalrocks very gravelly loam-----	0-1	.10	.28	1	6	48
	1-5	.05	.28			
	5	---	---			
Beatsonhollow taxadjunct fine sandy loam-----	0-1	.17	.20	1	3	86
	1-6	.17	.28			
	6-10	.17	.28			
	10-15	.17	.28			
	15-18	.10	.28			
	18	---	---			
Rock outcrop, Lovejoy basalt.						
343:						
Coalcanyon very cobbly loam-----	0-2	.10	.28	5	7	38
	2-11	.10	.28			
	11-27	.10	.32			
	27-43	.10	.37			
	43-65	.05	.43			
Coonhollow gravelly loam-----	0-3	.15	.28	3	6	48
	3-11	.10	.28			
	11-22	.10	.32			
	22-32	.10	.37			
	32-45	.05	.32			
	45-50	---	---			
	50	---	---			
344:						
Coalcanyon very cobbly loam-----	0-2	.10	.28	5	7	38
	2-11	.10	.28			
	11-27	.10	.32			
	27-43	.10	.37			
	43-65	.05	.43			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
344:						
Coonhollow gravelly loam-----	0-3	.15	.28	3	6	48
	3-11	.10	.28			
	11-22	.10	.32			
	22-32	.10	.37			
	32-45	.05	.32			
	45-50	---	---			
	50	---	---			
Rock outcrop, Lovejoy basalt.						
346:						
Cherotable loam-----	0-2	.24	.28	3	6	48
	2-8	.28	.37			
	8-14	.28	.37			
	14-21	.24	.37			
	21-30	.24	.37			
	30-45	.05	.20			
	45	---	---			
Elsey loam-----	0-3	.20	.28	2	5	56
	3-8	.17	.28			
	8-17	.17	.37			
	17-25	.17	.37			
	25-32	.17	.43			
	32-38	.15	.43			
	38	---	---			
347:						
Haplic Palexeralfs loam-----	0-3	.24	.32	5	5	56
	3-9	.20	.32			
	9-22	.10	.28			
	22-31	.02	.15			
	31-45	.02	.17			
	45-52	.02	.15			
	52-64	.02	.10			
353:						
Cherokeespring gravelly silt loam-----	0-3	.20	.28	5	5	56
	3-7	.20	.28			
	7-16	.24	.37			
	16-30	.20	.37			
	30-42	.20	.43			
	42-60	.17	.43			
	60-68	.15	.43			
355:						
Coalcanyon very cobbly loam-----	0-2	.10	.28	5	7	38
	2-11	.10	.28			
	11-27	.10	.32			
	27-43	.10	.37			
	43-65	.05	.43			
Talus.						

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
356:						
Coalcanyon very cobbly loam-----	0-2	.10	.28	5	7	38
	2-11	.10	.28			
	11-27	.10	.32			
	27-43	.10	.37			
	43-65	.05	.43			
Rock outcrop, basalt cliffs.						
Talus.						
Coonhollow gravelly loam-----	0-3	.15	.28	3	6	48
	3-11	.10	.28			
	11-22	.10	.32			
	22-32	.10	.37			
	32-45	.05	.32			
	45-50	---	---			
	50	---	---			
360:						
Typic Xerofluvents, coarse-loamy-----	0-3	.10	.20	5	2	134
	3-11	.10	.20			
	11-20	.10	.20			
	20-24	.15	.20			
	24-31	.10	.20			
	31-45	.55	.64			
	45-51	.10	.20			
	51-66	.49	.64			
	66-84	.05	.20			
	84-95	.02	.20			
Typic Xerofluvents, sandy-skeletal-----	0-3	.10	.20	5	2	134
	3-9	.10	.28			
	9-16	.05	.20			
	16-22	.05	.20			
	22-30	.10	.20			
	30-40	.05	.15			
	40-50	.10	.15			
	50-98	.02	.15			
361:						
Typic Xerofluvents, sandy-skeletal-----	0-3	.10	.20	5	2	134
	3-9	.10	.28			
	9-16	.05	.20			
	16-22	.05	.20			
	22-30	.10	.20			
	30-40	.05	.15			
	40-50	.10	.15			
	50-98	.02	.15			
362:						
Ultic Haploxeralfs, sandstone, low elevation, very deep-----	0-2	.37	.32	5	3	86
	2-8	.28	.24			
	8-18	.28	.24			
	18-28	.28	.24			
	28-39	.32	.24			
	39-49	.32	.24			
	49-56	.32	.28			
	56-70	.43	.43			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
362: Ultic Haploxeralfs, sandstone, low elevation, deep-----	0-3	.32	.24	4	3	86
	3-8	.28	.24			
	8-15	.32	.20			
	15-24	.37	.32			
	24-32	.49	.49			
	32-41	.43	.43			
	41	---	---			
363: Ultic Haploxeralfs, sandstone, low elevation, very deep-----	0-2	.37	.32	5	3	86
	2-8	.28	.24			
	8-18	.28	.24			
	18-28	.28	.24			
	28-39	.32	.24			
	39-49	.32	.24			
	49-56	.32	.28			
	56-70	.43	.43			
Ultic Haploxeralfs, sandstone, low elevation, deep-----	0-3	.32	.24	4	3	86
	3-8	.28	.24			
	8-15	.32	.20			
	15-24	.37	.32			
	24-32	.49	.49			
	32-41	.43	.43			
	41	---	---			
364: Ultic Haploxeralfs, sandstone, low elevation, deep-----	0-3	.32	.24	4	3	86
	3-8	.28	.24			
	8-15	.32	.20			
	15-24	.37	.32			
	24-32	.49	.49			
	32-41	.43	.43			
	41	---	---			
Ultic Haploxeralfs, sandstone, low elevation, very deep-----	0-2	.37	.32	5	3	86
	2-8	.28	.24			
	8-18	.28	.24			
	18-28	.28	.24			
	28-39	.32	.24			
	39-49	.32	.24			
	49-56	.32	.28			
	56-70	.43	.43			
365: Palexerults gravelly loam-----	0-2	.28	.43	5	5	56
	2-12	.20	.43			
	12-20	.28	.37			
	20-29	.32	.37			
	29-46	.37	.37			
	46-65	.37	.37			
	65	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
366:						
Palexerults gravelly loam-----	0-2	.28	.43	5	5	56
	2-12	.20	.43			
	12-20	.28	.37			
	20-29	.32	.37			
	29-46	.37	.37			
	46-65	.37	.37			
	65	---	---			
370:						
Palexerults gravelly loam-----	0-2	.28	.43	5	5	56
	2-12	.20	.43			
	12-20	.28	.37			
	20-29	.32	.37			
	29-46	.37	.37			
	46-65	.37	.37			
	65	---	---			
375:						
Wicks corner loam-----	0-2	.20	.28	5	6	48
	2-8	.28	.37			
	8-22	.15	.32			
	22-38	.15	.32			
	38-59	.05	.20			
	59-72	.02	.15			
	72-84	.02	.15			
376:						
Flagcanyon gravelly loam-----	0-3	.15	.28	2	6	48
	3-9	.10	.28			
	9-14	.10	.37			
	14-30	.10	.32			
	30-53	.02	.20			
	53-65	.02	.20			
Wicks corner loam-----	0-2	.20	.28	5	6	48
	2-8	.28	.37			
	8-22	.15	.32			
	22-38	.15	.32			
	38-59	.05	.20			
	59-72	.02	.15			
	72-84	.02	.15			
377:						
Flagcanyon taxadjunct fine sandy loam--	0-3	.24	.32	2	3	86
	3-7	.28	.37			
	7-16	.24	.32			
	16-23	.10	.28			
	23-31	.10	.32			
	31-63	.02	.24			
Durixeralfs, clayey-skeletal, loam----	0-1	.37	.37	1	5	56
	1-4	.24	.32			
	4-9	.10	.28			
	9-15	.05	.24			
	15-60	.02	.20			
Duraquerts gravelly clay-----	0-3	.20	.32	2	5	56
	3-6	.24	.37			
	6-15	.24	.32			
	15-21	.24	.37			
	21-23	.10	.37			
	23-60	.10	.28			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
400:						
Subaco taxadjunct clay-----	0-8	.20	.20	2	7	38
	8-16	.37	.37			
	16-29	.37	.37			
	29-35	.32	.32			
	35-42	.02	.02			
	40-60	.49	.49			
415:						
Ignord fine sandy loam-----	0-4	.15	.15	5	3	86
	4-14	.20	.20			
	14-25	.24	.24			
	25-32	.28	.28			
	32-53	.28	.28			
	53-58	.28	.28			
	58-77	.28	.28			
416:						
Calcic Haploxerolls sandy loam-----	0-5	.20	.20	4	3	86
	5-17	.20	.20			
	17-20	.24	.24			
	20-33	.24	.24			
	33-44	.24	.24			
	44-72	.02	.02			
418:						
Almendra loam-----	0-4	.28	.28	5	6	48
	4-14	.32	.32			
	14-29	.37	.37			
	29-40	.43	.43			
	40-52	.43	.43			
	52-74	.32	.32			
	74-86	.32	.32			
419:						
Conejo fine sandy loam, overwash-----	0-17	.37	.37	5	3	86
	17-35	.24	.24			
	35-45	.37	.37			
	45-56	.37	.37			
	56-62	.43	.43			
	62-70	.43	.43			
	70-72	.43	.43			
420:						
Conejo clay loam-----	0-5	.24	.24	5	6	48
	5-19	.24	.24			
	19-30	.28	.28			
	30-48	.37	.37			
	48-70	.28	.28			
425:						
Vina fine sandy loam-----	0-3	.24	.24	5	3	86
	3-11	.28	.28			
	11-23	.24	.24			
	23-37	.24	.28			
	37-50	.24	.28			
	50-54	.24	.24			
	54-80	.24	.24			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
426: Vina loam-----	0-4	.28	.28	5	5	56
	4-15	.32	.32			
	15-28	.37	.37			
	28-44	.37	.37			
	44-63	.43	.43			
	63-72	.43	.43			
439: Oxyaquic Xerofluvents clay-----	0-10	.24	.24	5	4	86
	10-13	.32	.32			
	13-21	.32	.32			
	21-27	.55	.55			
	27-32	.49	.49			
	32-37	.49	.49			
	37-55	.24	.24			
	55-63	.24	.24			
	63-65	.02	.02			
	65-80	.24	.24			
440: Oxyaquic Xerofluvents silt loam, frequently flooded-----	0-9	.49	.49	5	3	86
	9-18	.17	.17			
	18-25	.55	.55			
	25-33	.64	.64			
	33-44	.43	.43			
	44-51	.49	.49			
	51-60	.28	.28			
441: Oxyaquic Xerofluvents very fine sandy loam-----	0-6	.24	.24	5	3	86
	6-20	.49	.49			
	20-30	.49	.49			
	30-43	.64	.64			
	43-55	.49	.49			
	55-72	.64	.64			
	72-75	.28	.28			
442: Durixerolls clay loam-----	0-6	.24	.24	3	6	48
	6-12	.37	.37			
	12-24	.37	.37			
	24-33	.43	.43			
	33	.02	.02			
Haploxerolls clay loam-----	0-5	.24	.24	4	4	86
	5-18	.28	.28			
	18-29	.32	.32			
	29-44	.37	.37			
	44-57	.43	.43			
	57	---	---			
443: Durixerolls loam-----	0-4	.32	.32	3	6	48
	4-10	.37	.37			
	10-17	.37	.37			
	17-23	.37	.37			
	23-26	.43	.43			
	26	.02	.02			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
443: Haploxerolls loam-----	0-5	.24	.24	4	6	48
	5-16	.28	.28			
	16-27	.32	.32			
	27-40	.37	.37			
	40-48	.37	.37			
	48-52	.28	.28			
	52	.02	.02			
445: Chico loam-----	0-5	.32	.32	5	6	48
	5-10	.32	.32			
	10-21	.37	.37			
	21-32	.37	.37			
	32-50	.43	.43			
	50-70	.43	.43			
	70-80	.43	.43			
447: Charger fine sandy loam-----	0-3	.17	.24	3	3	86
	3-7	.24	.28			
	7-15	.32	.32			
	15-32	.24	.28			
	32-42	.24	.28			
	42-53	.24	.28			
	53-63	.28	.28			
	63-80	.05	.28			
448: Haploxerolls clay loam-----	0-5	.17	.17	5	4	86
	5-10	.24	.24			
	10-24	.32	.32			
	24-39	.32	.32			
	39-66	.43	.43			
449: Haploxerolls loam-----	0-4	.28	.28	5	6	48
	4-10	.32	.32			
	10-24	.37	.37			
	24-36	.43	.43			
	36-52	.43	.43			
	52-60	.28	.28			
500: Lofgren clay-----	0-5	.20	.20	5	4	86
	5-12	.24	.24			
	12-29	.24	.24			
	29-38	.24	.24			
	38-44	.24	.24			
	44-47	.43	.43			
	47-62	.02	.02			
	62-82	.02	.02			
Blavo clay-----	0-5	.20	.20	3	4	86
	5-16	.24	.24			
	16-24	.24	.24			
	24-30	.24	.24			
	30-36	.37	.37			
	36-60	.02	.02			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
501:						
Lofgren clay, occasionally flooded-----	0-5	.20	.20	5	4	86
	5-12	.24	.24			
	12-22	.24	.24			
	22-30	.24	.24			
	30-41	.24	.24			
	41-45	.43	.43			
	45-60	.02	.02			
Blavo clay, occasionally flooded-----	0-6	.20	.20	3	4	86
	6-10	.24	.24			
	10-22	.24	.24			
	22-29	.24	.24			
	29-36	.37	.37			
	36-42	.02	.02			
502:						
Blavo silt loam, overwash, occasionally flooded-----	0-7	.49	.49	3	4	86
	7-14	.24	.24			
	14-22	.24	.24			
	22-29	.24	.24			
	29-36	.28	.28			
	36-50	.02	.02			
519:						
Edjobe silty clay-----	0-8	.28	.28	5	4	86
	8-25	.32	.32			
	25-32	.32	.32			
	32-48	.49	.49			
	48-60	.49	.49			
	60-69	.49	.49			
	69-75	.02	.02			
520:						
Esquon clay-----	0-5	.28	.28	4	4	86
	5-11	.32	.32			
	11-22	.32	.32			
	22-35	.37	.37			
	35-46	.43	.43			
	46-50	.43	.43			
	50-56	.49	.49			
	56-67	.02	.02			
Neerdobe clay-----	0-5	.24	.24	3	4	86
	5-15	.28	.28			
	15-23	.28	.28			
	23-28	.28	.28			
	28-33	.32	.32			
	33-38	.55	.55			
	38-56	.02	.02			
521:						
Neerdobe silt loam, overwash-----	0-7	.49	.49	3	3	86
	7-16	.49	.49			
	16-20	.28	.28			
	20-33	.24	.24			
	33-47	.28	.28			
	47-52	.02	.02			
	52-60	.28	.28			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
522:						
Clear Lake silty clay loam, overwash---	0-6	.32	.32	5	4	86
	6-12	.32	.32			
	12-35	.37	.37			
	35-50	.37	.37			
	50-60	.49	.49			
	60-70	.49	.49			
	70-72	.49	.49			
523:						
Esquon silty clay loam, overwash-----	0-10	.43	.43	4	4	86
	10-18	.32	.32			
	18-46	.32	.32			
	46-60	.02	.02			
525:						
Govstanford loam-----	0-3	.37	.37	5	5	56
	3-11	.43	.43			
	11-18	.28	.28			
	18-25	.55	.55			
	25-34	.55	.55			
	34-42	.24	.24			
	42-61	.32	.32			
	61-72	.32	.32			
526:						
Govstanford loam, occasionally flooded	0-3	.37	.37	5	5	56
	3-11	.43	.43			
	11-18	.28	.28			
	18-25	.55	.55			
	25-34	.55	.55			
	34-42	.24	.24			
	42-61	.32	.32			
	61-72	.32	.32			
528:						
Neerdobe clay loam-----	0-10	.28	.28	3	4	86
	10-18	.28	.28			
	18-25	.32	.32			
	25	.02	.02			
550:						
Dunstone loam, dry-----	0-2	.28	.28	2	5	56
	2-7	.37	.37			
	7-10	.37	.37			
	10-16	.32	.37			
	16	---	---			
Loafercreek silt loam, dry-----	0-2	.28	.28	3	5	56
	2-4	.32	.37			
	4-11	.28	.28			
	11-20	.32	.37			
	20-29	.37	.37			
	29	---	---			
551:						
Dunstone loam, dry-----	0-2	.28	.28	2	5	56
	2-7	.37	.37			
	7-10	.37	.37			
	10-16	.32	.37			
	16	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
551:						
Lomarica loam-----	0-1	.17	.17	3	5	56
	1-5	.17	.17			
	5-9	.28	.32			
	9-12	.24	.32			
	12-25	.05	.32			
	25-32	.02	.24			
	32	---	---			
Argonaut taxadjunct loam-----	0-2	.20	.28	3	5	56
	2-8	.24	.32			
	8-14	.17	.24			
	14-20	.17	.20			
	20-26	.20	.24			
	26-30	.24	.28			
	30	---	---			
552:						
Dunstone gravelly loam-----	0-4	.17	.28	2	5	56
	4-6	.24	.37			
	6-10	.17	.37			
	10-15	.17	.37			
	15-37	---	---			
	37	---	---			
Loafercreek gravelly loam-----	0-0.5	---	---	3	5	56
	0.5-2	.17	.28			
	2-6	.15	.28			
	6-12	.28	.37			
	12-23	.24	.37			
	23-31	.28	.43			
	31-42	---	---			
	42	---	---			
553:						
Dunstone gravelly loam-----	0-4	.17	.28	2	5	56
	4-6	.24	.37			
	6-10	.17	.37			
	10-15	.17	.37			
	15-37	---	---			
	37	---	---			
Loafercreek gravelly loam-----	0-0.5	---	---	3	5	56
	0.5-2	.17	.28			
	2-6	.15	.28			
	6-12	.28	.37			
	12-23	.24	.37			
	23-31	.28	.43			
	31-42	---	---			
	42	---	---			
554:						
Dunstone gravelly loam-----	0-4	.17	.28	2	5	56
	4-6	.24	.37			
	6-10	.17	.37			
	10-15	.17	.37			
	15-37	---	---			
	37	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
554: Loafercreek gravelly loam-----	0-0.5	---	---	3	5	56
	0.5-2	.17	.28			
	2-6	.15	.28			
	6-12	.28	.37			
	12-23	.24	.37			
	23-31	.28	.43			
	31-42	---	---			
	42	---	---			
555: Dunstone gravelly loam-----	0-4	.17	.28	2	5	56
	4-6	.24	.37			
	6-10	.17	.37			
	10-15	.17	.37			
	15-37	---	---			
	37	---	---			
Loafercreek gravelly loam-----	0-0.5	---	---	3	5	56
	0.5-2	.17	.28			
	2-6	.15	.28			
	6-12	.28	.37			
	12-23	.24	.37			
	23-31	.28	.43			
	31-42	---	---			
	42	---	---			
556: Mounthope loam-----	0-1	---	---	3	5	56
	1-3	.24	.28			
	3-7	.28	.37			
	7-15	.37	.43			
	15-22	.17	.32			
	22-26	.15	.32			
	26-31	.10	.32			
	31-42	.10	.32			
	42-52	.15	.32			
	52	---	---			
Hartsmill gravelly loam-----	0-1	---	---	5	6	48
	1-3	.15	.28			
	3-6	.15	.37			
	6-13	.15	.37			
	13-24	.15	.37			
	24-35	.10	.32			
	35-62	.05	.32			
	62	---	---			
557: Mounthope loam-----	0-1	---	---	3	5	56
	1-3	.24	.28			
	3-7	.28	.37			
	7-15	.37	.43			
	15-22	.17	.32			
	22-26	.15	.32			
	26-31	.10	.32			
	31-42	.10	.32			
	42-52	.15	.32			
	52	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
557:						
Hartsmill gravelly loam-----	0-1	---	---	5	6	48
	1-3	.15	.28			
	3-6	.15	.37			
	6-13	.15	.37			
	13-24	.15	.37			
	24-35	.10	.32			
	35-62	.05	.32			
	62	---	---			
558:						
Hartsmill gravelly loam-----	0-1	---	---	5	6	48
	1-3	.15	.28			
	3-6	.15	.37			
	6-13	.15	.37			
	13-24	.15	.37			
	24-35	.10	.32			
	35-62	.05	.32			
	62	---	---			
Mounthope loam-----	0-1	---	---	3	5	56
	1-3	.24	.28			
	3-7	.28	.37			
	7-15	.37	.43			
	15-22	.17	.32			
	22-26	.15	.32			
	26-31	.10	.32			
	31-42	.10	.32			
	42-52	.15	.32			
	52	---	---			
559:						
Hartsmill gravelly loam-----	0-1	---	---	5	6	48
	1-3	.15	.28			
	3-6	.15	.37			
	6-13	.15	.37			
	13-24	.15	.37			
	24-35	.10	.32			
	35-62	.05	.32			
	62	---	---			
Mounthope loam-----	0-1	---	---	3	5	56
	1-3	.24	.28			
	3-7	.28	.37			
	7-15	.37	.43			
	15-22	.17	.32			
	22-26	.15	.32			
	26-31	.10	.32			
	31-42	.10	.32			
	42-52	.15	.32			
	52	---	---			
560:						
Hartsmill gravelly loam-----	0-1	---	---	5	6	48
	1-3	.15	.28			
	3-6	.15	.37			
	6-13	.15	.37			
	13-24	.15	.37			
	24-35	.10	.32			
	35-62	.05	.32			
	62	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
560: Mounthope loam-----	0-1	---	---	3	5	56
	1-3	.24	.28			
	3-7	.28	.37			
	7-15	.37	.43			
	15-22	.17	.32			
	22-26	.15	.32			
	26-31	.10	.32			
	31-42	.10	.32			
	42-52	.15	.32			
	52	---	---			
561: Bigridge loam-----	0-1	---	---	3	5	56
	1-5	.20	.28			
	5-9	.15	.28			
	9-15	.24	.37			
	15-20	.20	.37			
	20-27	.15	.49			
	27-36	.05	.49			
	36-51	.20	.49			
	51-62	---	---			
Minniecreek loam-----	0-2	.20	.28	2	5	56
	2-8	.32	.37			
	8-15	.32	.37			
	15-24	.37	.37			
	24-32	.43	.43			
	32-75	---	---			
562: Bigridge loam-----	0-1	---	---	3	5	56
	1-5	.20	.28			
	5-9	.15	.28			
	9-15	.24	.37			
	15-20	.20	.37			
	20-27	.15	.49			
	27-36	.05	.49			
	36-51	.20	.49			
	51-62	---	---			
Minniecreek loam-----	0-2	.20	.28	2	5	56
	2-8	.32	.37			
	8-15	.32	.37			
	15-24	.37	.37			
	24-32	.43	.43			
	32-75	---	---			
563: Bigridge loam-----	0-1	---	---	3	5	56
	1-5	.20	.28			
	5-9	.15	.28			
	9-15	.24	.37			
	15-20	.20	.37			
	20-27	.15	.49			
	27-36	.05	.49			
	36-51	.20	.49			
	51-62	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
563:						
Minniecreek loam-----	0-2	.20	.28	2	5	56
	2-8	.32	.37			
	8-15	.32	.37			
	15-24	.37	.37			
	24-32	.43	.43			
	32-75	---	---			
564:						
Bigridge loam-----	0-1	---	---	3	5	56
	1-5	.20	.28			
	5-9	.15	.28			
	9-15	.24	.37			
	15-20	.20	.37			
	20-27	.15	.49			
	27-36	.05	.49			
	36-51	.20	.49			
	51-62	---	---			
Minniecreek loam-----	0-2	.20	.28	2	5	56
	2-8	.32	.37			
	8-15	.32	.37			
	15-24	.37	.37			
	24-32	.43	.43			
	32-75	---	---			
565:						
Dunstone loam, dry-----	0-2	.28	.28	2	5	56
	2-7	.37	.37			
	7-10	.37	.37			
	10-16	.32	.37			
	16	---	---			
Argonaut taxadjunct loam-----	0-2	.20	.28	3	5	56
	2-8	.24	.32			
	8-14	.17	.24			
	14-20	.17	.20			
	20-26	.20	.24			
	26-30	.24	.28			
	30	---	---			
Sunnyslope loam-----	0-2	.20	.28	2	5	56
	2-6	.20	.32			
	6-10	.10	.37			
	10-14	.05	.32			
	14	---	---			
566:						
Dunstone loam, dry-----	0-2	.28	.28	2	5	56
	2-7	.37	.37			
	7-10	.37	.37			
	10-16	.32	.37			
	16	---	---			
Loafercreek silt loam, dry-----	0-2	.28	.28	3	5	56
	2-4	.32	.37			
	4-11	.28	.28			
	11-20	.32	.37			
	20-29	.37	.37			
	29	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
566:						
Katskillhill loam-----	0-2	.28	.28	4	5	56
	2-8	.28	.37			
	8-12	.10	.32			
	12-19	.20	.20			
	19-29	.20	.20			
	29-42	.15	.20			
	42	---	---			
567:						
Dunstone loam, dry-----	0-2	.28	.28	2	5	56
	2-7	.37	.37			
	7-10	.37	.37			
	10-16	.32	.37			
	16	---	---			
Loafercreek silt loam, dry-----	0-2	.28	.28	3	5	56
	2-4	.32	.37			
	4-11	.28	.28			
	11-20	.32	.37			
	20-29	.37	.37			
	29	---	---			
Argonaut taxadjunct loam-----	0-2	.20	.28	3	5	56
	2-8	.24	.32			
	8-14	.17	.24			
	14-20	.17	.20			
	20-26	.20	.24			
	26-30	.24	.28			
	30	---	---			
577:						
Parkshill coarse sandy loam-----	0-2	.05	.05	5	3	86
	2-8	.05	.05			
	8-18	.17	.17			
	18-26	.17	.17			
	26-35	.20	.20			
	35-53	.20	.20			
	53-61	.20	.20			
Flanly loam-----	0-2	.20	.24	2	5	56
	2-5	.15	.15			
	5-10	.24	.24			
	10-23	.17	.20			
	23-26	---	---			
Hurleton gravelly sandy loam-----	0-3	.10	.15	2	4	86
	3-7	.10	.15			
	7-12	.10	.17			
	12-16	.05	.17			
	16-19	.05	.17			
	19-25	.02	.20			
	25	---	---			
578:						
Flanly loam-----	0-2	.20	.24	2	5	56
	2-5	.15	.15			
	5-10	.24	.24			
	10-23	.17	.20			
	23-26	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
578:						
Swedesflat cobbly fine sandy loam-----	0-2	.10	.17	1	3	86
	2-8	.05	.10			
	8-12	.15	.17			
	12-18	---	---			
580:						
Surnuf taxadjunct loam-----	0-1	---	---	5	5	56
	1-5	.20	.28			
	5-11	.15	.17			
	11-18	.28	.32			
	18-31	.28	.32			
	31-43	.28	.32			
	43-54	.10	.37			
	54-67	.32	.37			
Griffgulch very gravelly silt loam-----	0-2	---	---	3	8	48
	2-3	---	---			
	3-7	.10	.28			
	7-11	.10	.28			
	11-20	.05	.28			
	20-33	.10	.32			
	33-47	.10	.32			
	47-58	.05	.32			
	58	---	---			
Rock outcrop, metavolcanic.						
581:						
Surnuf taxadjunct loam-----	0-1	---	---	5	5	56
	1-5	.20	.28			
	5-11	.15	.17			
	11-18	.28	.32			
	18-31	.28	.32			
	31-43	.28	.32			
	43-54	.10	.37			
	54-67	.32	.37			
Griffgulch very gravelly silt loam-----	0-2	---	---	3	8	48
	2-3	---	---			
	3-7	.10	.28			
	7-11	.10	.28			
	11-20	.05	.28			
	20-33	.10	.32			
	33-47	.10	.32			
	47-58	.05	.32			
	58	---	---			
582:						
Surnuf taxadjunct loam-----	0-1	---	---	5	5	56
	1-5	.20	.28			
	5-11	.15	.17			
	11-18	.28	.32			
	18-31	.28	.32			
	31-43	.28	.32			
	43-54	.10	.37			
	54-67	.32	.37			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
582:						
Griffgulch very gravelly silt loam-----	0-2	---	---	3	8	48
	2-3	---	---			
	3-7	.10	.28			
	7-11	.10	.28			
	11-20	.05	.28			
	20-33	.10	.32			
	33-47	.10	.32			
	47-58	.05	.32			
	58	---	---			
583:						
Surnuf taxadjunct loam-----	0-1	---	---	5	5	56
	1-5	.20	.28			
	5-11	.15	.17			
	11-18	.28	.32			
	18-31	.28	.32			
	31-43	.28	.32			
	43-54	.10	.37			
	54-67	.32	.37			
Griffgulch very gravelly silt loam-----	0-2	---	---	3	8	48
	2-3	---	---			
	3-7	.10	.28			
	7-11	.10	.28			
	11-20	.05	.28			
	20-33	.10	.32			
	33-47	.10	.32			
	47-58	.05	.32			
	58	---	---			
584:						
Flanly loam-----	0-2	.20	.24	2	5	56
	2-5	.15	.15			
	5-10	.24	.24			
	10-23	.17	.20			
	23-26	---	---			
Swedesflat cobbly fine sandy loam-----	0-2	.10	.17	1	3	86
	2-8	.05	.10			
	8-12	.15	.17			
	12-18	---	---			
Rackerby very gravelly sandy loam-----	0-2	.05	.10	1	5	56
	2-5	.05	.15			
	5-13	.10	.20			
	13	---	---			
585:						
Flanly loam-----	0-2	.20	.24	2	5	56
	2-5	.15	.15			
	5-10	.24	.24			
	10-23	.17	.20			
	23-26	---	---			
Sommeysflat loam-----	0-2	.20	.20	5	5	56
	2-9	.20	.20			
	9-14	.32	.32			
	14-24	.32	.32			
	24-31	.32	.32			
	31-62	.37	.37			
	62-70	.37	.37			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
586:						
Somneyflat loam-----	0-2	.20	.20	5	5	56
	2-9	.20	.20			
	9-14	.32	.32			
	14-24	.32	.32			
	24-31	.32	.32			
	31-62	.37	.37			
	62-70	.37	.37			
Mounthope loam-----	0-1	---	---	3	5	56
	1-3	.24	.28			
	3-7	.28	.37			
	7-15	.37	.43			
	15-22	.17	.32			
	22-26	.15	.32			
	26-31	.10	.32			
	31-42	.10	.32			
	42-52	.15	.32			
	52	---	---			
587:						
Somneyflat loam-----	0-2	.20	.20	5	5	56
	2-9	.20	.20			
	9-14	.32	.32			
	14-24	.32	.32			
	24-31	.32	.32			
	31-62	.37	.37			
	62-70	.37	.37			
Mounthope loam-----	0-1	---	---	3	5	56
	1-3	.24	.28			
	3-7	.28	.37			
	7-15	.37	.43			
	15-22	.17	.32			
	22-26	.15	.32			
	26-31	.10	.32			
	31-42	.10	.32			
	42-52	.15	.32			
	52	---	---			
Hurleton gravelly sandy loam-----	0-3	.10	.15	2	4	86
	3-7	.10	.15			
	7-12	.10	.17			
	12-16	.05	.17			
	16-19	.05	.17			
	19-25	.02	.20			
	25	---	---			
588:						
Ultic Haploxeralfs, thermic, high terrace-----	0-2	.24	.28	3	5	56
	2-6	.15	.32			
	6-12	.10	.32			
	12-20	.10	.32			
	20-32	.05	.28			
	32-39	.05	.32			
	39-50	.02	.17			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
589: Ultic Haploxeralfs, thermic, high terrace-----	0-2	.24	.28	3	5	56
	2-6	.15	.32			
	6-12	.10	.32			
	12-20	.10	.32			
	20-32	.05	.28			
	32-39	.05	.32			
	39-50	.02	.17			
590: Vistarobles sandy loam-----	0-5	.17	.20	1	3	86
	5-10	.15	.17			
	10-14	.10	.15			
	14-34	.02	.02			
	34-40	.10	.20			
Redding loam-----	0-4	.28	.32	2	6	48
	4-11	.28	.32			
	11-24	.28	.32			
	24-35	.17	.20			
	35-40	.02	.02			
Argonaut taxadjunct loam-----	0-2	.20	.28	3	5	56
	2-8	.24	.32			
	8-14	.17	.24			
	14-20	.17	.20			
	20-26	.20	.24			
	26-30	.24	.28			
	30	---	---			
Haploxererts gravelly silty clay-----	0-2	.20	.32	4	4	86
	2-10	.17	.24			
	10-30	.10	.17			
	30-33	.24	.28			
	33-41	.24	.28			
	41-44	---	---			
603: Oroville gravelly fine sandy loam-----	0-2	.24	.37	2	4	86
	2-6	.15	.24			
	6-13	.20	.32			
	13-17	.15	.28			
	17-23	.10	.20			
	23-31	.02	.02			
	31-60	.02	.02			
Thermalito sandy loam-----	0-2	.17	.20	2	4	86
	2-6	.17	.28			
	6-12	.20	.28			
	12-18	.15	.28			
	18-23	.15	.28			
	23-25	.17	.28			
	25-29	.15	.28			
	29-32	.15	.28			
	32-60	.02	.02			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
603:						
Fernandez sandy loam-----	0-2	.17	.24	5	3	86
	2-6	.17	.24			
	6-18	.17	.24			
	18-28	.28	.37			
	28-44	.32	.37			
	44-57	.24	.32			
	57-65	.20	.32			
	65-73	.20	.37			
	73-85	.02	.02			
Thompsonflat fine sandy loam-----	0-3	.20	.28	5	3	86
	3-7	.17	.20			
	7-11	.15	.20			
	11-15	.10	.17			
	15-22	.10	.24			
	22-35	.05	.28			
	35-45	.05	.28			
	45-53	.05	.28			
	53-66	.05	.28			
	66-80	.02	.28			
605:						
Duric Xerarents fine sandy loam, leveled-----	0-5	.24	.28	1	3	86
	5-12	.05	.24			
	12-18	.02	.02			
Oroville gravelly fine sandy loam-----	0-2	.24	.37	2	4	86
	2-6	.15	.24			
	6-13	.20	.32			
	13-17	.15	.28			
	17-23	.10	.20			
	23-31	.02	.02			
	31-60	.02	.02			
606:						
Redtough loam-----	0-1	.24	.28	1	5	56
	1-7	.24	.37			
	7-13	.17	.37			
	13	.02	.02			
Fallager loam-----	0-1	.20	.24	1	6	48
	1-3	.15	.32			
	3-7	.15	.32			
	7	.02	.02			
Anita, gravelly duripan-----	0-3	.17	.24	1	4	86
	3-8	.15	.28			
	8-15	.17	.28			
	15	.02	.02			
609:						
Anita, gravelly duripan-----	0-3	.17	.24	2	8	38
	3-8	.15	.24			
	8-15	.15	.24			
	15	.02	.02			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
609:						
Tuscan taxadjunct gravelly clay loam---	0-2	.20	.28	2	5	56
	2-5	.24	.32			
	5-13	.24	.32			
	13-23	.20	.32			
	23-29	.10	.37			
	29	.02	.02			
614:						
Doemill gravelly loam-----	0-1	.24	.32	1	6	56
	1-5	.28	.43			
	5-9	.28	.43			
	9-14	.20	.43			
	14	---	---			
Jokerst very cobbly loam-----	0-1	.15	.32	1	7	56
	1-4	.20	.43			
	4	---	---			
615:						
Doemill gravelly loam-----	0-1	.24	.32	1	6	56
	1-5	.28	.43			
	5-9	.28	.43			
	9-14	.20	.43			
	14	---	---			
Jokerst very cobbly loam-----	0-1	.15	.32	1	7	56
	1-4	.20	.43			
	4	---	---			
616:						
Jokerst very cobbly loam-----	0-1	.15	.32	1	7	56
	1-4	.20	.43			
	4	---	---			
Doemill gravelly loam-----	0-1	.24	.32	1	6	56
	1-5	.28	.43			
	5-9	.28	.43			
	9-14	.20	.43			
	14	---	---			
Typic Haploxeralfs gravelly loam-----	0-2	.10	.15	3	7	38
	2-8	.20	.32			
	8-16	.10	.28			
	16-27	.10	.28			
	27-40	.05	.28			
	40	---	---			
617:						
Doemill gravelly loam-----	0-1	.24	.32	1	6	56
	1-5	.28	.43			
	5-9	.28	.43			
	9-14	.20	.43			
	14	---	---			
Jokerst very cobbly loam-----	0-1	.15	.32	1	7	56
	1-4	.20	.43			
	4	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
617:						
Typic Haploxeralfs gravelly loam-----	0-2	.10	.15	3	7	38
	2-8	.20	.32			
	8-16	.10	.28			
	16-27	.10	.28			
	27-40	.05	.28			
	40	---	---			
619:						
Carhart taxadjunct clay-----	0-4	.17	.24	1	7	38
	4-11	.20	.28			
	11-17	.20	.28			
	17	---	---			
620:						
Doemill gravelly loam-----	0-1	.24	.32	1	6	56
	1-5	.28	.43			
	5-9	.28	.43			
	9-14	.20	.43			
	14	---	---			
Jokerst very cobbly loam-----	0-1	.15	.32	1	7	56
	1-4	.20	.43			
	4	---	---			
Ultic Haploxeralfs, thermic, gravelly loam-----	0-2	.15	.24	2	7	38
	2-6	.15	.32			
	6-13	.10	.32			
	13-21	.10	.37			
	21-31	.10	.37			
	31	---	---			
621:						
Doemill gravelly loam-----	0-1	.24	.32	1	6	56
	1-5	.28	.43			
	5-9	.28	.43			
	9-14	.20	.43			
	14	---	---			
Jokerst very cobbly loam-----	0-1	.15	.32	1	7	56
	1-4	.20	.43			
	4	---	---			
Ultic Haploxeralfs, thermic, gravelly loam-----	0-2	.15	.24	2	7	38
	2-6	.15	.32			
	6-13	.10	.32			
	13-21	.10	.37			
	21-31	.10	.37			
	31	---	---			
622:						
Xerorthents, shallow-----	0-2	.10	.15	1	7	38
	2-5	.15	.28			
	5-8	.10	.32			
	8	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
622:						
Typic Haploxeralfs gravelly loam-----	0-2	.10	.15	3	7	38
	2-8	.20	.32			
	8-16	.10	.28			
	16-27	.10	.28			
	27-40	.05	.28			
	40	---	---			
Rock outcrop, mudflow-breccia cliffs.						
623:						
Xerorthents, shallow-----	0-2	.10	.15	1	7	38
	2-5	.15	.28			
	5-8	.10	.32			
	8	---	---			
Typic Haploxeralfs gravelly loam-----	0-2	.10	.15	3	7	38
	2-8	.20	.32			
	8-16	.10	.28			
	16-27	.10	.28			
	27-40	.05	.28			
	40	---	---			
Rock outcrop, mudflow-breccia cliffs.						
624:						
Ultic Haploxeralfs, mesic, gravelly loam-----	0-1	---	---	2	7	38
	1-4	.10	.20			
	4-9	.10	.24			
	9-23	.10	.32			
	23-32	.10	.32			
	32-42	.05	.32			
	42	---	---			
Rockstripe very gravelly loam-----	0-2	.10	.24	1	7	48
	2-6	.10	.32			
	6-9	.17	.37			
	9	---	---			
625:						
Ultic Haploxeralfs, mesic, gravelly loam-----	0-1	---	---	2	7	38
	1-4	.10	.20			
	4-9	.10	.24			
	9-23	.10	.32			
	23-32	.10	.32			
	32-42	.05	.32			
	42	---	---			
Rockstripe very gravelly loam-----	0-2	.10	.24	1	7	48
	2-6	.10	.32			
	6-9	.17	.37			
	9	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
626:						
Ultic Haploxeralfs gravelly loam-----	0-4	.15	.24	2	7	38
	4-10	.20	.28			
	10-18	.24	.32			
	18-35	.20	.28			
	35-48	.20	.32			
	48	---	---			
Rockstripe very gravelly loam-----	0-2	.10	.24	1	7	48
	2-6	.10	.32			
	6-9	.17	.37			
	9	---	---			
Rock outcrop, mudflow-breccia cliffs.						
627:						
Ultic Haploxeralfs gravelly loam-----	0-4	.15	.24	2	7	38
	4-10	.20	.28			
	10-18	.24	.32			
	18-35	.20	.28			
	35-48	.20	.32			
	48	---	---			
Rockstripe very gravelly loam-----	0-2	.10	.24	1	7	48
	2-6	.10	.32			
	6-9	.17	.37			
	9	---	---			
Rock outcrop, mudflow-breccia cliffs.						
628:						
Rockstripe very gravelly loam-----	0-2	.10	.24	1	7	48
	2-6	.10	.32			
	6-9	.17	.37			
	9	---	---			
Ultic Haploxeralfs gravelly loam-----	0-4	.15	.24	2	7	38
	4-10	.20	.28			
	10-18	.24	.32			
	18-35	.20	.28			
	35-48	.20	.32			
	48	---	---			
Rock outcrop, mudflow-breccia cliffs.						
629:						
Slideland gravelly loam-----	0-2	.17	.24	5	7	48
	2-9	.17	.24			
	9-14	.24	.32			
	14-21	.24	.37			
	21-28	.24	.32			
	28-38	.24	.37			
	38-51	.24	.37			
	51-69	.17	.37			
	69-80	.15	.37			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
630:						
Slideland gravelly loam-----	0-2	.17	.24	5	7	48
	2-9	.17	.24			
	9-14	.24	.32			
	14-21	.24	.37			
	21-28	.24	.32			
	28-38	.24	.37			
	38-51	.24	.37			
	51-69	.17	.37			
	69-80	.15	.37			
631:						
Slideland gravelly loam-----	0-2	.17	.24	5	7	48
	2-9	.17	.24			
	9-14	.24	.32			
	14-21	.24	.37			
	21-28	.24	.32			
	28-38	.24	.37			
	38-51	.24	.37			
	51-69	.17	.37			
	69-80	.15	.37			
632:						
Ultic Haploxeralfs, conglomerate, very deep-----	0-2	---	---	2	7	38
	2-6	.10	.20			
	6-10	.15	.24			
	10-17	.20	.28			
	17-28	.15	.28			
	28-40	.10	.32			
	40-50	.10	.32			
	50-71	.05	.20			
	71-84	.05	.24			
Ultic Haploxeralfs, conglomerate, moderately deep-----	0-2	---	---	2	8	0
	2-5	.05	.20			
	5-10	.05	.24			
	10-25	.05	.24			
	25	---	---			
633:						
Ultic Haploxeralfs, conglomerate, very deep-----	0-2	---	---	2	7	38
	2-6	.10	.20			
	6-10	.15	.24			
	10-17	.20	.28			
	17-28	.15	.28			
	28-40	.10	.32			
	40-50	.10	.32			
	50-71	.05	.20			
	71-84	.05	.24			
Ultic Haploxeralfs, conglomerate, moderately deep-----	0-2	---	---	2	8	0
	2-5	.05	.20			
	5-10	.05	.24			
	10-25	.05	.24			
	25	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
634: Ultic Haploxeralfs, conglomerate, very deep-----	0-2	---	---	2	7	38
	2-6	.10	.20			
	6-10	.15	.24			
	10-17	.20	.28			
	17-28	.15	.28			
	28-40	.10	.32			
	40-50	.10	.32			
	50-71	.05	.20			
	71-84	.05	.24			
Ultic Haploxeralfs, conglomerate, moderately deep-----	0-2	---	---	2	8	0
	2-5	.05	.20			
	5-10	.05	.24			
	10-25	.05	.24			
	25	---	---			
635: Ultic Haploxeralfs, conglomerate, very deep-----	0-2	---	---	2	7	38
	2-6	.10	.20			
	6-10	.15	.24			
	10-17	.20	.28			
	17-28	.15	.28			
	28-40	.10	.32			
	40-50	.10	.32			
	50-71	.05	.20			
	71-84	.05	.24			
Ultic Haploxeralfs, conglomerate, moderately deep-----	0-2	---	---	2	8	0
	2-5	.05	.20			
	5-10	.05	.24			
	10-25	.05	.24			
	25	---	---			
636: Ultic Haploxeralfs, conglomerate, moderately deep-----	0-2	---	---	2	8	0
	2-5	.05	.20			
	5-10	.05	.24			
	10-25	.05	.24			
	25	---	---			
Ultic Haploxeralfs, conglomerate, very deep-----	0-2	---	---	2	7	38
	2-6	.10	.20			
	6-10	.15	.24			
	10-17	.20	.28			
	17-28	.15	.28			
	28-40	.10	.32			
	40-50	.10	.32			
	50-71	.05	.20			
	71-84	.05	.24			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
637: Ultic Haploxeralfs, sandstone-----	0-0.5	---	---	4	3	86
	0.5-2	.17	.20			
	2-6	.28	.28			
	6-11	.28	.28			
	11-17	.24	.28			
	17-24	.24	.32			
	24-32	.10	.32			
	32-53	.02	.24			
	53-65	---	---			
	65	---	---			
638: Ultic Haploxeralfs, sandstone-----	0-0.5	---	---	4	3	86
	0.5-2	.17	.20			
	2-6	.28	.28			
	6-11	.28	.28			
	11-17	.24	.28			
	17-24	.24	.32			
	24-32	.10	.32			
	32-53	.02	.24			
	53-65	---	---			
	65	---	---			
639: Ultic Haploxeralfs, sandstone-----	0-0.5	---	---	4	3	86
	0.5-2	.17	.20			
	2-6	.28	.28			
	6-11	.28	.28			
	11-17	.24	.28			
	17-24	.24	.32			
	24-32	.10	.32			
	32-53	.02	.24			
	53-65	---	---			
	65	---	---			
640: Ultic Haploxeralfs, sandstone-----	0-0.5	---	---	4	3	86
	0.5-2	.17	.20			
	2-6	.28	.28			
	6-11	.28	.28			
	11-17	.24	.28			
	17-24	.24	.32			
	24-32	.10	.32			
	32-53	.02	.24			
	53-65	---	---			
	65	---	---			
641: Ultic Haploxeralfs, sandstone-----	0-0.5	---	---	4	3	86
	0.5-2	.17	.20			
	2-6	.28	.28			
	6-11	.28	.28			
	11-17	.24	.28			
	17-24	.24	.32			
	24-32	.10	.32			
	32-53	.02	.24			
	53-65	---	---			
	65	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
642: Chinacamp gravelly loam-----	0-1	---	---	5	7	48
	1-5	.10	.20			
	5-15	.10	.20			
	15-29	.10	.28			
	29-38	.15	.28			
	38-44	.15	.32			
	44-61	.20	.37			
	61-72	.15	.37			
643: Chinacamp gravelly loam-----	0-1	---	---	5	7	48
	1-5	.10	.20			
	5-15	.10	.20			
	15-29	.10	.28			
	29-38	.15	.28			
	38-44	.15	.32			
	44-61	.20	.37			
	61-72	.15	.37			
644: Chinacamp gravelly loam-----	0-1	---	---	5	7	48
	1-5	.10	.20			
	5-15	.10	.20			
	15-29	.10	.28			
	29-38	.15	.28			
	38-44	.15	.32			
	44-61	.20	.37			
	61-72	.15	.37			
645: Chinacamp gravelly loam-----	0-1	---	---	5	7	48
	1-5	.10	.20			
	5-15	.10	.20			
	15-29	.10	.28			
	29-38	.15	.28			
	38-44	.15	.32			
	44-61	.20	.37			
	61-72	.15	.37			
646: Coalcanyon taxadjunct very gravelly loam-----	0-2	.10	.28	5	8	48
	2-6	.15	.32			
	6-14	.15	.32			
	14-24	.15	.37			
	24-42	.05	.32			
	42-54	.10	.28			
	54-72	.05	.32			
647: Coalcanyon taxadjunct very gravelly loam-----	0-2	.10	.28	5	8	48
	2-6	.15	.32			
	6-14	.15	.32			
	14-24	.15	.37			
	24-42	.05	.32			
	42-54	.10	.28			
	54-72	.05	.32			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
648: Coalcanyon taxadjunct very gravelly loam-----	0-2	.10	.28	5	8	48
	2-6	.15	.32			
	6-14	.15	.32			
	14-24	.15	.37			
	24-42	.05	.32			
	42-54	.10	.28			
	54-72	.05	.32			
649: Coalcanyon taxadjunct very gravelly loam-----	0-2	.10	.28	5	8	48
	2-6	.15	.32			
	6-14	.15	.32			
	14-24	.15	.37			
	24-42	.05	.32			
	42-54	.10	.28			
	54-72	.05	.32			
650: Schott very gravelly loam-----	0-2	---	---	3	8	48
	2-6	.10	.24			
	6-13	.10	.24			
	13-22	.05	.28			
	22-40	.05	.32			
	40-50	.02	.20			
	50	---	---			
651: Schott very gravelly loam-----	0-2	---	---	3	8	48
	2-6	.10	.24			
	6-13	.10	.24			
	13-22	.05	.28			
	22-40	.05	.32			
	40-50	.02	.20			
	50	---	---			
652: Schott very gravelly loam-----	0-2	---	---	3	8	48
	2-6	.10	.24			
	6-13	.10	.24			
	13-22	.05	.28			
	22-40	.05	.32			
	40-50	.02	.20			
	50	---	---			
Rock outcrop, mudflow breccia.						
654: Coridge bouldery loam-----	0-1	.20	.28	2	7	48
	1-6	.15	.32			
	6-12	.20	.37			
	12-19	.15	.37			
	19-24	.10	.32			
	24	---	---			
Rock outcrop, Cohasset basalt.						

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
655:						
Coridge bouldery loam-----	0-1	.20	.28	2	7	48
	1-6	.15	.32			
	6-12	.20	.37			
	12-19	.15	.37			
	19-24	.10	.32			
	24	---	---			
Rock outcrop, Cohasset basalt.						
656:						
Rock outcrop, basalt cliffs.						
Coalcanyon taxadjunct very gravelly loam-----	0-2	.10	.28	5	8	48
	2-6	.15	.32			
	6-14	.15	.32			
	14-24	.15	.37			
	24-42	.05	.32			
	42-54	.10	.28			
	54-72	.05	.32			
657:						
Bonneyr ridge sandy loam-----	0-1	---	---	5	3	86
	1-3	.49	.55			
	3-6	.43	.55			
	6-16	.49	.55			
	16-22	.49	.55			
	22-31	.43	.55			
	31-39	.55	.55			
	39-56	.55	.55			
	56-76	.37	.55			
Chawanakee gravelly sandy loam-----	0-1	---	---	2	4	86
	1-2	---	---			
	2-5	.37	.55			
	5-11	.37	.55			
	11-19	.28	.55			
	19	---	---			
Rock outcrop, quartz diorite.						
658:						
Bonneyr ridge sandy loam-----	0-1	---	---	5	3	86
	1-3	.49	.55			
	3-6	.43	.55			
	6-16	.49	.55			
	16-22	.49	.55			
	22-31	.43	.55			
	31-39	.55	.55			
	39-56	.55	.55			
	56-76	.37	.55			
Chawanakee gravelly sandy loam-----	0-1	---	---	2	4	86
	1-2	---	---			
	2-5	.37	.55			
	5-11	.37	.55			
	11-19	.28	.55			
	19	---	---			
Rock outcrop, quartz diorite.						

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
659:						
Bonneyr ridge sandy loam-----	0-1	---	---	5	3	86
	1-3	.49	.55			
	3-6	.43	.55			
	6-16	.49	.55			
	16-22	.49	.55			
	22-31	.43	.55			
	31-39	.55	.55			
	39-56	.55	.55			
	56-76	.37	.55			
Chawanakee gravelly sandy loam-----	0-1	---	---	2	4	86
	1-2	---	---			
	2-5	.37	.55			
	5-11	.37	.55			
	11-19	.28	.55			
	19	---	---			
Rock outcrop, quartz diorite.						
660:						
Bonneyr ridge sandy loam-----	0-1	---	---	5	3	86
	1-3	.49	.55			
	3-6	.43	.55			
	6-16	.49	.55			
	16-22	.49	.55			
	22-31	.43	.55			
	31-39	.55	.55			
	39-56	.55	.55			
	56-76	.37	.55			
Chawanakee gravelly sandy loam-----	0-1	---	---	2	4	86
	1-2	---	---			
	2-5	.37	.55			
	5-11	.37	.55			
	11-19	.28	.55			
	19	---	---			
Rock outcrop, quartz diorite.						
661:						
Millerridge gravelly sandy clay loam---	0-2	.10	.15	3	6	56
	2-6	.05	.10			
	6-12	.17	.28			
	12-20	.17	.32			
	20-26	.20	.32			
	26	---	---			
Boxrobber cobbly sandy clay loam-----	0-2	.05	.10	2	6	56
	2-8	.05	.10			
	8-16	.05	.28			
	16-30	---	---			
	30	---	---			
662:						
Millerridge gravelly sandy clay loam---	0-2	.10	.15	3	6	56
	2-6	.05	.10			
	6-12	.17	.28			
	12-20	.17	.32			
	20-26	.20	.32			
	26	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
662: Boxrobber cobbly sandy clay loam-----	0-2	.05	.10	2	6	56
	2-8	.05	.10			
	8-16	.05	.28			
	16-30	---	---			
	30	---	---			
663: Millerridge gravelly sandy clay loam---	0-2	.10	.15	3	6	56
	2-6	.05	.10			
	6-12	.17	.28			
	12-20	.17	.32			
	20-26	.20	.32			
	26	---	---			
Boxrobber cobbly sandy clay loam-----	0-2	.05	.10	2	6	56
	2-8	.05	.10			
	8-16	.05	.28			
	16-30	---	---			
	30	---	---			
664: Millerridge gravelly sandy clay loam---	0-2	.10	.15	3	6	56
	2-6	.05	.10			
	6-12	.17	.28			
	12-20	.17	.32			
	20-26	.20	.32			
	26	---	---			
Boxrobber cobbly sandy clay loam-----	0-2	.05	.10	2	6	56
	2-8	.05	.10			
	8-16	.05	.28			
	16-30	---	---			
	30	---	---			
665: Surnuf gravelly loam-----	0-1	---	---	5	7	48
	1-4	.10	.24			
	4-9	.15	.24			
	9-16	.15	.24			
	16-27	.17	.28			
	27-29	.17	.28			
	29-56	.24	.37			
	56-72	.32	.43			
Bigridge loam-----	0-1	---	---	3	5	56
	1-5	.20	.28			
	5-9	.15	.28			
	9-15	.24	.37			
	15-20	.20	.37			
	20-27	.15	.49			
	27-36	.05	.49			
	36-51	.20	.49			
	51-62	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
666: Surnuf gravelly loam-----	0-1	---	---	5	7	48
	1-4	.10	.24			
	4-9	.15	.24			
	9-16	.15	.24			
	16-27	.17	.28			
	27-29	.17	.28			
	29-56	.24	.37			
	56-72	.32	.43			
Bigridge loam-----	0-1	---	---	3	5	56
	1-5	.20	.28			
	5-9	.15	.28			
	9-15	.24	.37			
	15-20	.20	.37			
	20-27	.15	.49			
	27-36	.05	.49			
	36-51	.20	.49			
	51-62	---	---			
667: Surnuf gravelly loam-----	0-1	---	---	5	7	48
	1-4	.10	.24			
	4-9	.15	.24			
	9-16	.15	.24			
	16-27	.17	.28			
	27-29	.17	.28			
	29-56	.24	.37			
	56-72	.32	.43			
Bigridge loam-----	0-1	---	---	3	5	56
	1-5	.20	.28			
	5-9	.15	.28			
	9-15	.24	.37			
	15-20	.20	.37			
	20-27	.15	.49			
	27-36	.05	.49			
	36-51	.20	.49			
	51-62	---	---			
668: Surnuf gravelly loam-----	0-1	---	---	5	7	48
	1-4	.10	.24			
	4-9	.15	.24			
	9-16	.15	.24			
	16-27	.17	.28			
	27-29	.17	.28			
	29-56	.24	.37			
	56-72	.32	.43			
Bigridge loam-----	0-1	---	---	3	5	56
	1-5	.20	.28			
	5-9	.15	.28			
	9-15	.24	.37			
	15-20	.20	.37			
	20-27	.15	.49			
	27-36	.05	.49			
	36-51	.20	.49			
	51-62	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
669:						
Oroshore gravelly loam-----	0-2	.17	.28	3	7	48
	2-15	.15	.32			
	15-28	.10	.32			
	28-34	.05	.32			
	34	---	---			
Mounthope loam-----	0-1	---	---	3	5	56
	1-3	.24	.28			
	3-7	.28	.37			
	7-15	.37	.43			
	15-22	.17	.32			
	22-26	.15	.32			
	26-31	.10	.32			
	31-42	.10	.32			
	42-52	.15	.32			
	52	---	---			
Dunstone gravelly loam-----	0-4	.17	.28	2	5	56
	4-6	.24	.37			
	6-10	.17	.37			
	10-15	.17	.37			
	15-37	---	---			
	37	---	---			
670:						
Oroshore gravelly loam-----	0-2	.17	.28	3	7	48
	2-15	.15	.32			
	15-28	.10	.32			
	28-34	.05	.32			
	34	---	---			
Mounthope loam-----	0-1	---	---	3	5	56
	1-3	.24	.28			
	3-7	.28	.37			
	7-15	.37	.43			
	15-22	.17	.32			
	22-26	.15	.32			
	26-31	.10	.32			
	31-42	.10	.32			
	42-52	.15	.32			
	52	---	---			
Dunstone gravelly loam-----	0-4	.17	.28	2	5	56
	4-6	.24	.37			
	6-10	.17	.37			
	10-15	.17	.37			
	15-37	---	---			
	37	---	---			
671:						
Oroshore gravelly loam-----	0-2	.17	.28	3	7	48
	2-15	.15	.32			
	15-28	.10	.32			
	28-34	.05	.32			
	34	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
671:						
Mounthope loam-----	0-1	---	---	3	5	56
	1-3	.24	.28			
	3-7	.28	.37			
	7-15	.37	.43			
	15-22	.17	.32			
	22-26	.15	.32			
	26-31	.10	.32			
	31-42	.10	.32			
	42-52	.15	.32			
	52	---	---			
Dunstone gravelly loam-----	0-4	.17	.28	2	5	56
	4-6	.24	.37			
	6-10	.17	.37			
	10-15	.17	.37			
	15-37	---	---			
	37	---	---			
672:						
Oroshore gravelly loam-----	0-2	.17	.28	3	7	48
	2-15	.15	.32			
	15-28	.10	.32			
	28-34	.05	.32			
	34	---	---			
Mounthope loam-----	0-1	---	---	3	5	56
	1-3	.24	.28			
	3-7	.28	.37			
	7-15	.37	.43			
	15-22	.17	.32			
	22-26	.15	.32			
	26-31	.10	.32			
	31-42	.10	.32			
	42-52	.15	.32			
	52	---	---			
Dunstone gravelly loam-----	0-4	.17	.28	2	5	56
	4-6	.24	.37			
	6-10	.17	.37			
	10-15	.17	.37			
	15-37	---	---			
	37	---	---			
674:						
Chawanakee gravelly sandy loam-----	0-1	---	---	2	4	86
	1-2	---	---			
	2-5	.37	.55			
	5-11	.37	.55			
	11-19	.28	.55			
	19	---	---			
Bonneycastle sandy loam-----	0-1	---	---	5	3	86
	1-3	.49	.55			
	3-6	.43	.55			
	6-16	.49	.55			
	16-22	.49	.55			
	22-31	.43	.55			
	31-39	.55	.55			
	39-56	.55	.55			
	56-76	.37	.55			
Rock outcrop, quartz diorite.						

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
675:						
Clearhayes sandy clay loam-----	0-2	.17	.20	4	5	56
	2-10	.10	.17			
	10-19	.10	.17			
	19-28	.05	.24			
	28-38	.05	.32			
	38-46	.02	.24			
	46	---	---			
Hamslough clay-----	0-3	.17	.20	2	4	86
	3-14	.15	.24			
	14-19	.05	.28			
	19-27	.02	.15			
	27	.02	.02			
676:						
Carhart clay-----	0-2	.24	.24	3	7	38
	2-12	.28	.28			
	12-24	.28	.28			
	24-30	.32	.32			
	30	---	---			
Anita taxadjunct clay-----	0-2	.24	.24	2	7	38
	2-6	.24	.24			
	6-11	.24	.24			
	11	---	---			
677:						
Tuscan gravelly loam-----	0-2	.17	.28	2	7	48
	2-4	.24	.32			
	4-7	.24	.37			
	7-11	.15	.32			
	11	.02	.02			
Fallager loam-----	0-1	.20	.24	1	6	48
	1-3	.15	.32			
	3-7	.15	.32			
	7	.02	.02			
Anita, gravelly duripan-----	0-3	.17	.24	2	8	38
	3-8	.15	.24			
	8-15	.15	.24			
	15	.02	.02			
679:						
Lucksev loam-----	0-2	.24	.28	1	6	48
	2-7	.24	.32			
	7-15	.32	.37			
	15	---	---			
Butteside gravelly loam-----	0-2	.15	.24	3	7	48
	2-8	.20	.28			
	8-13	.28	.32			
	13-27	.28	.32			
	27	---	---			
Carhart clay-----	0-2	.24	.24	3	7	38
	2-12	.28	.28			
	12-24	.28	.28			
	24-30	.32	.32			
	30	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
680:						
Lucksev loam-----	0-2	.24	.28	1	6	48
	2-7	.24	.32			
	7-15	.32	.37			
	15	---	---			
Butteside gravelly loam-----	0-2	.15	.24	3	7	48
	2-8	.20	.28			
	8-13	.28	.32			
	13-27	.28	.32			
	27	---	---			
683:						
Typic Haploxeralfs, magnesian, low elevation-----	0-3	.10	.24	2	8	0
	3-10	.10	.28			
	10-21	.10	.28			
	21-30	.05	.32			
	30	---	---			
Earlal very gravelly loam-----	0-3	.10	.17	1	7	48
	3-7	.05	.17			
	7-14	.05	.32			
	14	---	---			
Rock outcrop, serpentinite.						
684:						
Typic Haploxeralfs, magnesian, low elevation-----	0-3	.10	.24	2	8	0
	3-10	.10	.28			
	10-21	.10	.28			
	21-30	.05	.32			
	30	---	---			
Earlal very gravelly loam-----	0-3	.10	.17	1	7	48
	3-7	.05	.17			
	7-14	.05	.32			
	14	---	---			
Rock outcrop, serpentinite.						
685:						
Bosquejo taxadjunct, gravelly substratum-----	0-3	.20	.20	2	7	38
	3-8	.15	.15			
	8-17	.15	.15			
	17-27	.15	.15			
	27-33	.20	.28			
	33-41	.05	.20			
	41-55	.05	.20			
	55-70	.24	.24			
	70-81	.20	.20			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
686:						
Redsluff taxadjunct clay loam-----	0-4	.24	.28	4	6	48
	4-10	.15	.15			
	10-21	.20	.28			
	21-32	.20	.20			
	32-42	.20	.20			
	42-53	.24	.37			
	53-68	.05	.24			
	68-75	.10	.24			
	75-80	---	---			
687:						
Xerorthents, shallow-----	0-2	.10	.15	1	7	38
	2-5	.15	.28			
	5-8	.10	.32			
	8	---	---			
Typic Haploxeralfs gravelly loam-----	0-2	.10	.15	3	7	38
	2-8	.20	.32			
	8-16	.10	.28			
	16-27	.10	.28			
	27-40	.05	.28			
	40	---	---			
700:						
Retsongulch very gravelly sandy loam---	0-1	---	---	2	4	86
	1-3	.05	.10			
	3-12	.10	.17			
	12-21	.05	.32			
	21-30	.05	.32			
	30	---	---			
Flumewall gravelly sandy loam-----	0-0.5	---	---	1	4	86
	0.5-2	.05	.10			
	2-7	.05	.15			
	7-18	.02	.17			
	18	---	---			
701:						
Powellton gravelly loam-----	0-0.5	---	---	5	7	48
	0.5-2	---	---			
	2-4	.15	.28			
	4-9	.15	.28			
	9-15	.24	.32			
	15-24	.28	.32			
	24-30	.32	.32			
	30-41	.55	.55			
	41-61	.55	.55			
	61-83	.55	.55			
Obstruction gravelly sandy loam-----	0-4	---	---	5	4	86
	4-7	.05	.10			
	7-10	.05	.10			
	10-18	.10	.17			
	18-25	.15	.20			
	25-33	.15	.20			
	33-44	.17	.24			
	44-64	.20	.32			
	64-84	.28	.43			
	84	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
702:						
Cerpone gravelly loam-----	0-1	---	---	3	6	56
	1-2	---	---			
	2-4	.17	.28			
	4-9	.15	.32			
	9-17	.17	.37			
	17-26	.24	.37			
	26-41	.15	.43			
	41-57	.15	.49			
	57	---	---			
Typic Haploxeralfs, magnesian, very gravelly loam-----	0-3	.10	.24	3	8	48
	3-7	.15	.28			
	7-12	.10	.28			
	12-18	.15	.28			
	18-24	.15	.32			
	24-32	.05	.32			
	32-42	.05	.32			
	42-54	.05	.37			
	54	---	---			
Earlal very gravelly loam-----	0-3	.10	.17	1	7	48
	3-7	.05	.17			
	7-14	.05	.32			
	14	---	---			
703:						
Cerpone gravelly loam-----	0-1	---	---	3	6	56
	1-2	---	---			
	2-4	.17	.28			
	4-9	.15	.32			
	9-17	.17	.37			
	17-26	.24	.37			
	26-41	.15	.43			
	41-57	.15	.49			
	57	---	---			
Typic Haploxeralfs, magnesian, very gravelly loam-----	0-3	.10	.24	3	8	48
	3-7	.15	.28			
	7-12	.10	.28			
	12-18	.15	.28			
	18-24	.15	.32			
	24-32	.05	.32			
	32-42	.05	.32			
	42-54	.05	.37			
	54	---	---			
Earlal very gravelly loam-----	0-3	.10	.17	1	7	48
	3-7	.05	.17			
	7-14	.05	.32			
	14	---	---			
Rock outcrop, serpentinite.						

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
704:						
Typic Haploxeralfs, magnesian, very gravelly loam-----	0-3	.10	.24	3	8	48
	3-7	.15	.28			
	7-12	.10	.28			
	12-18	.15	.28			
	18-24	.15	.32			
	24-32	.05	.32			
	32-42	.05	.32			
	42-54	.05	.37			
	54	---	---			
Earlall very gravelly loam-----	0-3	.10	.17	1	7	48
	3-7	.05	.17			
	7-14	.05	.32			
	14	---	---			
Cerpone gravelly loam-----	0-1	---	---	3	6	56
	1-2	---	---			
	2-4	.17	.28			
	4-9	.15	.32			
	9-17	.17	.37			
	17-26	.24	.37			
	26-41	.15	.43			
	41-57	.15	.49			
	57	---	---			
Rock outcrop, serpentinite.						
705:						
Typic Haploxeralfs, magnesian, very gravelly loam-----	0-3	.10	.24	3	8	48
	3-7	.15	.28			
	7-12	.10	.28			
	12-18	.15	.28			
	18-24	.15	.32			
	24-32	.05	.32			
	32-42	.05	.32			
	42-54	.05	.37			
	54	---	---			
Earlall very gravelly loam-----	0-3	.10	.17	1	7	48
	3-7	.05	.17			
	7-14	.05	.32			
	14	---	---			
Cerpone gravelly loam-----	0-1	---	---	3	6	56
	1-2	---	---			
	2-4	.17	.28			
	4-9	.15	.32			
	9-17	.17	.37			
	17-26	.24	.37			
	26-41	.15	.43			
	41-57	.15	.49			
	57	---	---			
Rock outcrop, serpentinite.						

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
711: Dixmine very gravelly loam-----	0-1	---	---	4	8	48
	1-2	---	---			
	2-6	.10	.28			
	6-11	.10	.28			
	11-17	.15	.32			
	17-30	.15	.37			
	30-41	.10	.37			
	41-54	.10	.43			
	54	---	---			
Toadtown loam-----	0-2	---	---	5	6	48
	2-3	---	---			
	3-5	.24	.28			
	5-8	.15	.24			
	8-13	.24	.28			
	13-18	.24	.28			
	18-27	.32	.32			
	27-51	.49	.49			
	51-65	.49	.49			
	65-75	.49	.49			
	75-79	.55	.55			
712: Dixmine very gravelly loam-----	0-1	---	---	4	8	48
	1-2	---	---			
	2-6	.10	.28			
	6-11	.10	.28			
	11-17	.15	.32			
	17-30	.15	.37			
	30-41	.10	.37			
	41-54	.10	.43			
	54	---	---			
Toadtown loam-----	0-2	---	---	5	6	48
	2-3	---	---			
	3-5	.24	.28			
	5-8	.15	.24			
	8-13	.24	.28			
	13-18	.24	.28			
	18-27	.32	.32			
	27-51	.49	.49			
	51-65	.49	.49			
	65-75	.49	.49			
	75-79	.55	.55			
713: Dixmine very gravelly loam-----	0-1	---	---	4	8	48
	1-2	---	---			
	2-6	.10	.28			
	6-11	.10	.28			
	11-17	.15	.32			
	17-30	.15	.37			
	30-41	.10	.37			
	41-54	.10	.43			
	54	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
713:						
Toadtown loam-----	0-2	---	---	5	6	48
	2-3	---	---			
	3-5	.24	.28			
	5-8	.15	.24			
	8-13	.24	.28			
	13-18	.24	.28			
	18-27	.32	.32			
	27-51	.49	.49			
	51-65	.49	.49			
	65-75	.49	.49			
	75-79	.55	.55			
714:						
Dixmine very gravelly loam-----	0-1	---	---	4	8	48
	1-2	---	---			
	2-6	.10	.28			
	6-11	.10	.28			
	11-17	.15	.32			
	17-30	.15	.37			
	30-41	.10	.37			
	41-54	.10	.43			
	54	---	---			
Toadtown loam-----	0-2	---	---	5	6	48
	2-3	---	---			
	3-5	.24	.28			
	5-8	.15	.24			
	8-13	.24	.28			
	13-18	.24	.28			
	18-27	.32	.32			
	27-51	.49	.49			
	51-65	.49	.49			
	65-75	.49	.49			
	75-79	.55	.55			
715:						
Logtrain gravelly loam-----	0-1	---	---	3	6	56
	1-3	.15	.28			
	3-9	.10	.24			
	9-21	.15	.32			
	21-38	.15	.37			
	38-54	.05	.43			
	54	---	---			
Bottlehill very gravelly loam-----	0-0.5	---	---	2	7	56
	0.5-2	---	---			
	2-4	.10	.28			
	4-9	.10	.24			
	9-13	.10	.24			
	13-22	.05	.32			
	22-33	.05	.32			
	33	---	---			
Walkermine very gravelly loam-----	0-1	---	---	1	8	0
	1-3	.05	.24			
	3-12	.05	.28			
	12	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
716:						
Griffgulch very gravelly silt loam-----	0-2	---	---	3	8	48
	2-3	---	---			
	3-7	.10	.28			
	7-11	.10	.28			
	11-20	.05	.28			
	20-33	.10	.32			
	33-47	.10	.32			
	47-58	.05	.32			
	58	---	---			
Surnuf gravelly loam-----	0-1	---	---	5	7	48
	1-4	.10	.24			
	4-9	.15	.24			
	9-16	.15	.24			
	16-27	.17	.28			
	27-29	.17	.28			
	29-56	.24	.37			
	56-72	.32	.43			
717:						
Griffgulch very gravelly silt loam-----	0-2	---	---	3	8	48
	2-3	---	---			
	3-7	.10	.28			
	7-11	.10	.28			
	11-20	.05	.28			
	20-33	.10	.32			
	33-47	.10	.32			
	47-58	.05	.32			
	58	---	---			
Surnuf gravelly loam-----	0-1	---	---	5	7	48
	1-4	.10	.24			
	4-9	.15	.24			
	9-16	.15	.24			
	16-27	.17	.28			
	27-29	.17	.28			
	29-56	.24	.37			
	56-72	.32	.43			
718:						
Griffgulch very gravelly silt loam-----	0-2	---	---	3	8	48
	2-3	---	---			
	3-7	.10	.28			
	7-11	.10	.28			
	11-20	.05	.28			
	20-33	.10	.32			
	33-47	.10	.32			
	47-58	.05	.32			
	58	---	---			
Surnuf gravelly loam-----	0-1	---	---	5	7	48
	1-4	.10	.24			
	4-9	.15	.24			
	9-16	.15	.24			
	16-27	.17	.28			
	27-29	.17	.28			
	29-56	.24	.37			
	56-72	.32	.43			
Spine taxadjunct very cobbly loam-----	0-2	.10	.24	1	8	48
	2-15	.05	.24			
	15	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
719:						
Griffgulch very gravelly silt loam-----	0-2	---	---	3	8	48
	2-3	---	---			
	3-7	.10	.28			
	7-11	.10	.28			
	11-20	.05	.28			
	20-33	.10	.32			
	33-47	.10	.32			
	47-58	.05	.32			
	58	---	---			
Surnuf gravelly loam-----	0-1	---	---	5	7	48
	1-4	.10	.24			
	4-9	.15	.24			
	9-16	.15	.24			
	16-27	.17	.28			
	27-29	.17	.28			
	29-56	.24	.37			
	56-72	.32	.43			
Spine taxadjunct very cobbly loam-----	0-2	.10	.24	1	8	48
	2-15	.05	.24			
	15	---	---			
720:						
Dystroxerepts extremely gravelly loam--	0-1	---	---	2	8	0
	1-4	.05	.28			
	4-12	.10	.37			
	12-22	.10	.37			
	22-28	.05	.43			
	28-38	.02	.28			
	38	---	---			
Haploxeralfs very gravelly loam-----	0-0.5	---	---	3	8	48
	0.5-4	.15	.20			
	4-9	.10	.37			
	9-13	.10	.37			
	13-22	.05	.37			
	22-31	.05	.37			
	31-47	.02	.37			
	47	---	---			
Rock outcrop, metavolcanic.						
721:						
Haploxerands, granitic till, medial sandy loam-----	0-2	---	---	2	3	86
	2-5	.32	.37			
	5-12	.28	.37			
	12-22	.24	.37			
	22-41	.28	.55			
	41-55	.10	.55			
	55-74	.10	.64			
	74-87	.10	.64			
722:						
Haploxerands, granitic till, medial sandy loam-----	0-2	---	---	2	3	86
	2-5	.32	.37			
	5-12	.28	.37			
	12-22	.24	.37			
	22-41	.28	.55			
	41-55	.10	.55			
	55-74	.10	.64			
	74-87	.10	.64			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
723: Haploxerands, granitic till, medial sandy loam-----	0-2	---	---	2	3	86
	2-5	.32	.37			
	5-12	.28	.37			
	12-22	.24	.37			
	22-41	.28	.55			
	41-55	.10	.55			
	55-74	.10	.64			
	74-87	.10	.64			
724: Haploxerands, volcanic till, cobbly medial sandy loam-----	0-2	---	---	2	4	86
	2-4	.10	.15			
	4-17	.10	.15			
	17-37	.10	.20			
	37-41	.10	.20			
	41-52	.05	.10			
	52-80	.05	.10			
725: Haploxerands, volcanic till, cobbly medial sandy loam-----	0-2	---	---	2	4	86
	2-4	.10	.15			
	4-17	.10	.15			
	17-37	.10	.20			
	37-41	.10	.20			
	41-52	.05	.10			
	52-80	.05	.10			
726: Haploxerands, volcanic till, cobbly medial sandy loam-----	0-2	---	---	2	4	86
	2-4	.10	.15			
	4-17	.10	.15			
	17-37	.10	.20			
	37-41	.10	.20			
	41-52	.05	.10			
	52-80	.05	.10			
727: Bonneyridge sandy loam-----	0-1	---	---	5	3	86
	1-3	.49	.55			
	3-6	.43	.55			
	6-16	.49	.55			
	16-22	.49	.55			
	22-31	.43	.55			
	31-39	.55	.55			
	39-56	.55	.55			
	56-76	.37	.55			
728: Bonneyridge sandy loam-----	0-1	---	---	5	3	86
	1-3	.49	.55			
	3-6	.43	.55			
	6-16	.49	.55			
	16-22	.49	.55			
	22-31	.43	.55			
	31-39	.55	.55			
	39-56	.55	.55			
	56-76	.37	.55			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
729:						
Bonneyr ridge sandy loam-----	0-1	---	---	5	3	86
	1-3	.49	.55			
	3-6	.43	.55			
	6-16	.49	.55			
	16-22	.49	.55			
	22-31	.43	.55			
	31-39	.55	.55			
	39-56	.55	.55			
	56-76	.37	.55			
730:						
Tusccoll gravelly loam-----	0-1	---	---	5	7	48
	1-2	---	---			
	2-6	.17	.24			
	6-14	.15	.24			
	14-23	.17	.28			
	23-33	.24	.32			
	33-41	.24	.37			
	41-49	.24	.32			
	49-70	.20	.37			
Schott very gravelly loam-----	0-2	---	---	3	8	48
	2-6	.10	.24			
	6-13	.10	.24			
	13-22	.05	.28			
	22-40	.05	.32			
	40-50	.02	.20			
	50	---	---			
731:						
Tusccoll gravelly loam-----	0-1	---	---	5	7	48
	1-2	---	---			
	2-6	.17	.24			
	6-14	.15	.24			
	14-23	.17	.28			
	23-33	.24	.32			
	33-41	.24	.37			
	41-49	.24	.32			
	49-70	.20	.37			
Schott very gravelly loam-----	0-2	---	---	3	8	48
	2-6	.10	.24			
	6-13	.10	.24			
	13-22	.05	.28			
	22-40	.05	.32			
	40-50	.02	.20			
	50	---	---			
732:						
Bonepile taxadjunct, duripan substratum	0-1	---	---	4	4	86
	1-4	.05	.10			
	4-7	.05	.10			
	7-15	.02	.10			
	15-30	.02	.05			
	30-37	.05	.24			
	37-47	.05	.43			
	47	.02	.02			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
733:						
Haploxeralfs, terrace, gravelly loam---	0-5	.15	.32	1	7	48
	5-11	.15	.37			
	11-18	.15	.37			
	18-32	.10	.37			
	32-48	.02	.37			
	48-63	.02	.24			
734:						
Haploxerands medial sandy loam-----	0-0.5	---	---	5	3	86
	0.5-2	.24	.28			
	2-5	.20	.28			
	5-12	.32	.43			
	12-23	.32	.49			
	23-30	.32	.49			
	30-42	.37	.55			
	42-60	.37	.55			
	60-80	.43	.55			
Aquic Xerofluvents peaty very fine sandy loam-----	0-3	.24	.24	5	2	134
	3-7	.24	.24			
	7-16	.32	.64			
	16-19	.24	.24			
	19-23	.43	.64			
	23-35	.24	.24			
	35-49	.24	.64			
	49-63	.24	.24			
	63-71	.43	.64			
	71-80	.24	.24			
735:						
Fluvaquents, loamy-----	0-0.5	---	---	5	6	48
	0.5-2	.24	.24			
	2-9	.37	.37			
	9-18	.24	.24			
	18-24	.49	.49			
	24-27	.32	.32			
	27-37	.49	.49			
	37-45	.32	.32			
	45-65	.17	.17			
	65-70	.20	.20			
	70-85	.20	.20			
801:						
Obstruction gravelly sandy loam-----	0-4	---	---	5	4	86
	4-7	.05	.10			
	7-10	.05	.10			
	10-18	.10	.17			
	18-25	.15	.20			
	25-33	.15	.20			
	33-44	.17	.24			
	44-64	.20	.32			
	64-84	.28	.43			
	84	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
802:						
Obskel very gravelly sandy loam-----	0-0.5	---	---	4	4L	86
	0.5-1	---	---			
	1-4	.05	.10			
	4-9	.05	.15			
	9-19	.10	.20			
	19-30	.17	.43			
	30-56	.20	.49			
	56	---	---			
Obstruction gravelly sandy loam-----	0-4	---	---	5	4	86
	4-7	.05	.10			
	7-10	.05	.10			
	10-18	.10	.17			
	18-25	.15	.20			
	25-33	.15	.20			
	33-44	.17	.24			
	44-64	.20	.32			
	64-84	.28	.43			
	84	---	---			
803:						
Obskel very gravelly sandy loam-----	0-0.5	---	---	4	4L	86
	0.5-1	---	---			
	1-4	.05	.10			
	4-9	.05	.15			
	9-19	.10	.20			
	19-30	.17	.43			
	30-56	.20	.49			
	56	---	---			
Obstruction gravelly sandy loam-----	0-4	---	---	5	4	86
	4-7	.05	.10			
	7-10	.05	.10			
	10-18	.10	.17			
	18-25	.15	.20			
	25-33	.15	.20			
	33-44	.17	.24			
	44-64	.20	.32			
	64-84	.28	.43			
	84	---	---			
804:						
Obskel very gravelly sandy loam-----	0-0.5	---	---	4	4L	86
	0.5-1	---	---			
	1-4	.05	.10			
	4-9	.05	.15			
	9-19	.10	.20			
	19-30	.17	.43			
	30-56	.20	.49			
	56	---	---			
Obstruction gravelly sandy loam-----	0-4	---	---	5	4	86
	4-7	.05	.10			
	7-10	.05	.10			
	10-18	.10	.17			
	18-25	.15	.20			
	25-33	.15	.20			
	33-44	.17	.24			
	44-64	.20	.32			
	64-84	.28	.43			
	84	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
804:						
Retsongulch very gravelly sandy loam---	0-1	---	---	2	4	86
	1-3	.05	.10			
	3-12	.10	.17			
	12-21	.05	.32			
	21-30	.05	.32			
	30	---	---			
805:						
Bottlehill very gravelly loam-----	0-0.5	---	---	2	7	56
	0.5-2	---	---			
	2-4	.10	.28			
	4-9	.10	.24			
	9-13	.10	.24			
	13-22	.05	.32			
	22-33	.05	.32			
	33	---	---			
Walkermine very gravelly loam-----	0-1	---	---	1	8	0
	1-3	.05	.24			
	3-12	.05	.28			
	12	---	---			
Logtrain gravelly loam-----	0-1	---	---	3	6	56
	1-3	.15	.28			
	3-9	.10	.24			
	9-21	.15	.32			
	21-38	.15	.37			
	38-54	.05	.43			
	54	---	---			
806:						
Bottlehill very gravelly loam-----	0-0.5	---	---	2	7	56
	0.5-2	---	---			
	2-4	.10	.28			
	4-9	.10	.24			
	9-13	.10	.24			
	13-22	.05	.32			
	22-33	.05	.32			
	33	---	---			
Walkermine very gravelly loam-----	0-1	---	---	1	8	0
	1-3	.05	.24			
	3-12	.05	.28			
	12	---	---			
Logtrain gravelly loam-----	0-1	---	---	3	6	56
	1-3	.15	.28			
	3-9	.10	.24			
	9-21	.15	.32			
	21-38	.15	.37			
	38-54	.05	.43			
	54	---	---			
807:						
Bottlehill very gravelly loam-----	0-0.5	---	---	2	7	56
	0.5-2	---	---			
	2-4	.10	.28			
	4-9	.10	.24			
	9-13	.10	.24			
	13-22	.05	.32			
	22-33	.05	.32			
	33	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
807:						
Logtrain gravelly loam-----	0-1	---	---	3	6	56
	1-3	.15	.28			
	3-9	.10	.24			
	9-21	.15	.32			
	21-38	.15	.37			
	38-54	.05	.43			
	54	---	---			
Walkermine very gravelly loam-----	0-1	---	---	1	8	0
	1-3	.05	.24			
	3-12	.05	.28			
	12	---	---			
808:						
Bottlehill very gravelly loam-----	0-0.5	---	---	2	7	56
	0.5-2	---	---			
	2-4	.10	.28			
	4-9	.10	.24			
	9-13	.10	.24			
	13-22	.05	.32			
	22-33	.05	.32			
	33	---	---			
Walkermine very gravelly loam-----	0-1	---	---	1	8	0
	1-3	.05	.24			
	3-12	.05	.28			
	12	---	---			
Logtrain gravelly loam-----	0-1	---	---	3	6	56
	1-3	.15	.28			
	3-9	.10	.24			
	9-21	.15	.32			
	21-38	.15	.37			
	38-54	.05	.43			
	54	---	---			
809:						
Walkermine very gravelly loam-----	0-1	---	---	1	8	0
	1-3	.05	.24			
	3-12	.05	.28			
	12	---	---			
Bottlehill very gravelly loam-----	0-0.5	---	---	2	7	56
	0.5-2	---	---			
	2-4	.10	.28			
	4-9	.10	.24			
	9-13	.10	.24			
	13-22	.05	.32			
	22-33	.05	.32			
	33	---	---			
Logtrain gravelly loam-----	0-1	---	---	3	6	56
	1-3	.15	.28			
	3-9	.10	.24			
	9-21	.15	.32			
	21-38	.15	.37			
	38-54	.05	.43			
	54	---	---			
Rock outcrop, metavolcanic.						

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
810:						
Dixmine very gravelly loam-----	0-1	---	---	4	8	48
	1-2	---	---			
	2-6	.10	.28			
	6-11	.10	.28			
	11-17	.15	.32			
	17-30	.15	.37			
	30-41	.10	.37			
	41-54	.10	.43			
	54	---	---			
Mac gravelly loam-----	0-1	---	---	3	7	48
	1-4	.17	.24			
	4-9	.10	.24			
	9-15	.20	.37			
	15-23	.32	.43			
	23-37	.10	.55			
	37	---	---			
Spine very gravelly loam-----	0-1	---	---	1	7	56
	1-3	.10	.28			
	3-9	.10	.37			
	9-16	.05	.43			
	16	---	---			
811:						
Powellton gravelly loam-----	0-0.5	---	---	5	7	48
	0.5-2	---	---			
	2-4	.15	.28			
	4-9	.15	.28			
	9-15	.24	.32			
	15-24	.28	.32			
	24-30	.32	.32			
	30-41	.55	.55			
	41-61	.55	.55			
	61-83	.55	.55			
Toadtown loam-----	0-2	---	---	5	6	48
	2-3	---	---			
	3-5	.24	.28			
	5-8	.15	.24			
	8-13	.24	.28			
	13-18	.24	.28			
	18-27	.32	.32			
	27-51	.49	.49			
	51-65	.49	.49			
	65-75	.49	.49			
	75-79	.55	.55			
812:						
Powellton gravelly loam-----	0-0.5	---	---	5	7	48
	0.5-2	---	---			
	2-4	.15	.28			
	4-9	.15	.28			
	9-15	.24	.32			
	15-24	.28	.32			
	24-30	.32	.32			
	30-41	.55	.55			
	41-61	.55	.55			
	61-83	.55	.55			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
812: Toadtown loam-----	0-2	---	---	5	6	48
	2-3	---	---			
	3-5	.24	.28			
	5-8	.15	.24			
	8-13	.24	.28			
	13-18	.24	.28			
	18-27	.32	.32			
	27-51	.49	.49			
	51-65	.49	.49			
	65-75	.49	.49			
	75-79	.55	.55			
813: Powellton gravelly loam-----	0-0.5	---	---	5	7	48
	0.5-2	---	---			
	2-4	.15	.28			
	4-9	.15	.28			
	9-15	.24	.32			
	15-24	.28	.32			
	24-30	.32	.32			
	30-41	.55	.55			
	41-61	.55	.55			
	61-83	.55	.55			
Toadtown loam-----	0-2	---	---	5	6	48
	2-3	---	---			
	3-5	.24	.28			
	5-8	.15	.24			
	8-13	.24	.28			
	13-18	.24	.28			
	18-27	.32	.32			
	27-51	.49	.49			
	51-65	.49	.49			
	65-75	.49	.49			
	75-79	.55	.55			
814: Mountyana gravelly loam-----	0-1	---	---	5	7	48
	1-2	---	---			
	2-4	.05	.17			
	4-9	.10	.15			
	9-13	.17	.28			
	13-19	.24	.32			
	19-26	.24	.32			
	26-37	.24	.37			
	37-52	.05	.43			
	52-65	.05	.37			
	65	---	---			
815: Mountyana gravelly loam-----	0-1	---	---	5	7	48
	1-2	---	---			
	2-4	.05	.17			
	4-9	.10	.15			
	9-13	.17	.28			
	13-19	.24	.32			
	19-26	.24	.32			
	26-37	.24	.37			
	37-52	.05	.43			
	52-65	.05	.37			
	65	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
817: Lydon very gravelly medial coarse sandy loam-----	0-0.5	---	---	2	4L	86
	0.5-1	---	---			
	1-3	.10	.24			
	3-6	.10	.24			
	6-13	.05	.24			
	13-21	.02	.17			
	21-35	.02	.32			
	35	---	---			
818: Lydon very gravelly medial coarse sandy loam-----	0-0.5	---	---	2	4L	86
	0.5-1	---	---			
	1-3	.10	.24			
	3-6	.10	.24			
	6-13	.05	.24			
	13-21	.02	.17			
	21-35	.02	.32			
	35	---	---			
819: Lydon very gravelly medial coarse sandy loam-----	0-0.5	---	---	2	4L	86
	0.5-1	---	---			
	1-3	.10	.24			
	3-6	.10	.24			
	6-13	.05	.24			
	13-21	.02	.17			
	21-35	.02	.32			
	35	---	---			
Rock outcrop, mudflow breccia.						
820: Lydon very gravelly medial coarse sandy loam-----	0-0.5	---	---	2	4L	86
	0.5-1	---	---			
	1-3	.10	.24			
	3-6	.10	.24			
	6-13	.05	.24			
	13-21	.02	.17			
	21-35	.02	.32			
	35	---	---			
Rock outcrop, mudflow breccia.						
821: Lydon very gravelly medial coarse sandy loam-----	0-0.5	---	---	2	4L	86
	0.5-1	---	---			
	1-3	.10	.24			
	3-6	.10	.24			
	6-13	.05	.24			
	13-21	.02	.17			
	21-35	.02	.32			
	35	---	---			
Rock outcrop, mudflow breccia.						

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
822: Bonepile gravelly medial loam-----	0-1	---	---	4	6	56
	1-3	.20	.28			
	3-9	.15	.28			
	9-18	.10	.24			
	18-30	.10	.24			
	30-44	.10	.32			
	44	---	---			
823: Bonepile gravelly medial loam-----	0-1	---	---	4	6	56
	1-3	.20	.28			
	3-9	.15	.28			
	9-18	.10	.24			
	18-30	.10	.24			
	30-44	.10	.32			
	44	---	---			
824: Beecee very gravelly medial loam-----	0-0.5	---	---	5	6	56
	0.5-1	---	---			
	1-4	.10	.28			
	4-8	.10	.28			
	8-15	.05	.28			
	15-22	.05	.28			
	22-31	.10	.37			
	31-44	.10	.37			
	44-59	.10	.37			
	59-68	.10	.37			
	68-86	.10	.43			
825: Beecee very gravelly medial loam-----	0-0.5	---	---	5	6	56
	0.5-1	---	---			
	1-4	.10	.28			
	4-8	.10	.28			
	8-15	.05	.28			
	15-22	.05	.28			
	22-31	.10	.37			
	31-44	.10	.37			
	44-59	.10	.37			
	59-68	.10	.37			
	68-86	.10	.43			
Lydon very gravelly medial coarse sandy loam-----	0-0.5	---	---	2	4L	86
	0.5-1	---	---			
	1-3	.10	.24			
	3-6	.10	.24			
	6-13	.05	.24			
	13-21	.02	.17			
	21-35	.02	.32			
	35	---	---			
826: Redbone gravelly medial sandy loam-----	0-1	---	---	4	6	48
	1-2	---	---			
	2-4	.05	.10			
	4-7	.05	.10			
	7-17	.05	.15			
	17-28	.05	.17			
	28-41	.10	.24			
	41-54	.05	.24			
	54	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
827: Redbone gravelly medial sandy loam-----	0-1	---	---	4	6	48
	1-2	---	---			
	2-4	.05	.10			
	4-7	.05	.10			
	7-17	.05	.15			
	17-28	.05	.17			
	28-41	.10	.24			
	41-54	.05	.24			
	54	---	---			
829: Paradiso loam-----	0-2	---	---	5	6	48
	2-4	.17	.20			
	4-9	.15	.17			
	9-16	.24	.28			
	16-25	.28	.32			
	25-45	.28	.28			
	45-58	.37	.37			
	58-74	.43	.43			
	74-84	.37	.43			
830: Paradiso loam-----	0-2	---	---	5	6	48
	2-4	.17	.20			
	4-9	.15	.17			
	9-16	.24	.28			
	16-25	.28	.32			
	25-45	.28	.28			
	45-58	.37	.37			
	58-74	.43	.43			
	74-84	.37	.43			
831: Surnuf gravelly loam-----	0-1	---	---	5	7	48
	1-4	.10	.24			
	4-9	.15	.24			
	9-16	.15	.24			
	16-27	.17	.28			
	27-29	.17	.28			
	29-56	.24	.37			
	56-72	.32	.43			
Bigridge loam-----	0-1	---	---	3	5	56
	1-5	.20	.28			
	5-9	.15	.28			
	9-15	.24	.37			
	15-20	.20	.37			
	20-27	.15	.49			
	27-36	.05	.49			
	36-51	.20	.49			
	51-62	---	---			
Spine very gravelly loam-----	0-1	---	---	1	7	56
	1-3	.10	.28			
	3-9	.10	.37			
	9-16	.05	.43			
	16	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
832:						
Surnuf gravelly loam-----	0-1	---	---	5	7	48
	1-4	.10	.24			
	4-9	.15	.24			
	9-16	.15	.24			
	16-27	.17	.28			
	27-29	.17	.28			
	29-56	.24	.37			
	56-72	.32	.43			
Bigridge loam-----	0-1	---	---	3	5	56
	1-5	.20	.28			
	5-9	.15	.28			
	9-15	.24	.37			
	15-20	.20	.37			
	20-27	.15	.49			
	27-36	.05	.49			
	36-51	.20	.49			
	51-62	---	---			
Spine very gravelly loam-----	0-1	---	---	1	7	56
	1-3	.10	.28			
	3-9	.10	.37			
	9-16	.05	.43			
	16	---	---			
833:						
Surnuf gravelly loam-----	0-1	---	---	5	7	48
	1-4	.10	.24			
	4-9	.15	.24			
	9-16	.15	.24			
	16-27	.17	.28			
	27-29	.17	.28			
	29-56	.24	.37			
	56-72	.32	.43			
Bigridge loam-----	0-1	---	---	3	5	56
	1-5	.20	.28			
	5-9	.15	.28			
	9-15	.24	.37			
	15-20	.20	.37			
	20-27	.15	.49			
	27-36	.05	.49			
	36-51	.20	.49			
	51-62	---	---			
Spine very gravelly loam-----	0-1	---	---	1	7	56
	1-3	.10	.28			
	3-9	.10	.37			
	9-16	.05	.43			
	16	---	---			
834:						
Hietanen gravelly loam-----	0-1	---	---	4	7	48
	1-3	.15	.28			
	3-8	.15	.24			
	8-19	.28	.37			
	19-30	.37	.49			
	30-53	.43	.55			
	53	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
834:						
Mac gravelly loam-----	0-1	---	---	3	7	48
	1-4	.17	.24			
	4-9	.10	.24			
	9-15	.20	.37			
	15-23	.32	.43			
	23-37	.10	.55			
	37	---	---			
835:						
Hietanen gravelly loam-----	0-1	---	---	4	7	48
	1-3	.15	.28			
	3-8	.15	.24			
	8-19	.28	.37			
	19-30	.37	.49			
	30-53	.43	.55			
	53	---	---			
Mac gravelly loam-----	0-1	---	---	3	7	48
	1-4	.17	.24			
	4-9	.10	.24			
	9-15	.20	.37			
	15-23	.32	.43			
	23-37	.10	.55			
	37	---	---			
836:						
Hietanen gravelly loam-----	0-1	---	---	4	7	48
	1-3	.15	.28			
	3-8	.15	.24			
	8-19	.28	.37			
	19-30	.37	.49			
	30-53	.43	.55			
	53	---	---			
Mac gravelly loam-----	0-1	---	---	3	7	48
	1-4	.17	.24			
	4-9	.10	.24			
	9-15	.20	.37			
	15-23	.32	.43			
	23-37	.10	.55			
	37	---	---			
Spine very gravelly loam-----	0-1	---	---	1	7	56
	1-3	.10	.28			
	3-9	.10	.37			
	9-16	.05	.43			
	16	---	---			
837:						
Hietanen gravelly loam-----	0-1	---	---	4	7	48
	1-3	.15	.28			
	3-8	.15	.24			
	8-19	.28	.37			
	19-30	.37	.49			
	30-53	.43	.55			
	53	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
837:						
Spine very gravelly loam-----	0-1	---	---	1	7	56
	1-3	.10	.28			
	3-9	.10	.37			
	9-16	.05	.43			
	16	---	---			
Mac gravelly loam-----	0-1	---	---	3	7	48
	1-4	.17	.24			
	4-9	.10	.24			
	9-15	.20	.37			
	15-23	.32	.43			
	23-37	.10	.55			
	37	---	---			
838:						
Dixmine very gravelly loam-----	0-1	---	---	4	8	48
	1-2	---	---			
	2-6	.10	.28			
	6-11	.10	.28			
	11-17	.15	.32			
	17-30	.15	.37			
	30-41	.10	.37			
	41-54	.10	.43			
	54	---	---			
Spine very gravelly loam-----	0-1	---	---	1	7	56
	1-3	.10	.28			
	3-9	.10	.37			
	9-16	.05	.43			
	16	---	---			
Mac gravelly loam-----	0-1	---	---	3	7	48
	1-4	.17	.24			
	4-9	.10	.24			
	9-15	.20	.37			
	15-23	.32	.43			
	23-37	.10	.55			
	37	---	---			
839:						
Chawanakee gravelly sandy loam-----	0-1	---	---	2	4	86
	1-2	---	---			
	2-5	.37	.55			
	5-11	.37	.55			
	11-19	.28	.55			
	19	---	---			
Billscabin gravelly sandy loam-----	0-2	---	---	5	3	86
	2-5	.32	.55			
	5-14	.20	.55			
	14-27	.20	.55			
	27-37	.24	.55			
	37-57	.20	.55			
	57-82	.24	.55			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
841:						
Billscabin gravelly sandy loam-----	0-2	---	---	5	3	86
	2-5	.32	.55			
	5-14	.20	.55			
	14-27	.20	.55			
	27-37	.24	.55			
	37-57	.20	.55			
	57-82	.24	.55			
Bonneyridge sandy loam-----	0-1	---	---	5	3	86
	1-3	.49	.55			
	3-6	.43	.55			
	6-16	.49	.55			
	16-22	.49	.55			
	22-31	.43	.55			
	31-39	.55	.55			
	39-56	.55	.55			
	56-76	.37	.55			
842:						
Billscabin gravelly sandy loam-----	0-2	---	---	5	3	86
	2-5	.32	.55			
	5-14	.20	.55			
	14-27	.20	.55			
	27-37	.24	.55			
	37-57	.20	.55			
	57-82	.24	.55			
Bonneyridge sandy loam-----	0-1	---	---	5	3	86
	1-3	.49	.55			
	3-6	.43	.55			
	6-16	.49	.55			
	16-22	.49	.55			
	22-31	.43	.55			
	31-39	.55	.55			
	39-56	.55	.55			
	56-76	.37	.55			
846:						
Bonneyridge sandy loam-----	0-1	---	---	5	3	86
	1-3	.49	.55			
	3-6	.43	.55			
	6-16	.49	.55			
	16-22	.49	.55			
	22-31	.43	.55			
	31-39	.55	.55			
	39-56	.55	.55			
	56-76	.37	.55			
Lewisflat loam-----	0-3	---	---	5	5	56
	3-5	.24	.28			
	5-9	.32	.37			
	9-18	.32	.43			
	18-33	.49	.49			
	33-49	.49	.49			
	49-65	.55	.55			
	65-75	.55	.55			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
847:						
Bonneyr ridge sandy loam-----	0-1	---	---	5	3	86
	1-3	.49	.55			
	3-6	.43	.55			
	6-16	.49	.55			
	16-22	.49	.55			
	22-31	.43	.55			
	31-39	.55	.55			
	39-56	.55	.55			
	56-76	.37	.55			
Lewisflat loam-----	0-3	---	---	5	5	56
	3-5	.24	.28			
	5-9	.32	.37			
	9-18	.32	.43			
	18-33	.49	.49			
	33-49	.49	.49			
	49-65	.55	.55			
	65-75	.55	.55			
848:						
Bonneyr ridge sandy loam-----	0-1	---	---	5	3	86
	1-3	.49	.55			
	3-6	.43	.55			
	6-16	.49	.55			
	16-22	.49	.55			
	22-31	.43	.55			
	31-39	.55	.55			
	39-56	.55	.55			
	56-76	.37	.55			
Lewisflat loam-----	0-3	---	---	5	5	56
	3-5	.24	.28			
	5-9	.32	.37			
	9-18	.32	.43			
	18-33	.49	.49			
	33-49	.49	.49			
	49-65	.55	.55			
	65-75	.55	.55			
850:						
Lewisflat loam-----	0-3	---	---	5	5	56
	3-5	.24	.28			
	5-9	.32	.37			
	9-18	.32	.43			
	18-33	.49	.49			
	33-49	.49	.49			
	49-65	.55	.55			
	65-75	.55	.55			
851:						
Lewisflat loam-----	0-3	---	---	5	5	56
	3-5	.24	.28			
	5-9	.32	.37			
	9-18	.32	.43			
	18-33	.49	.49			
	33-49	.49	.49			
	49-65	.55	.55			
	65-75	.55	.55			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
852:						
Lewisflat loam-----	0-3	---	---	5	5	56
	3-5	.24	.28			
	5-9	.32	.37			
	9-18	.32	.43			
	18-33	.49	.49			
	33-49	.49	.49			
	49-65	.55	.55			
	65-75	.55	.55			
860:						
Toadtown gravelly loam-----	0-1	---	---	5	5	56
	1-6	.10	.20			
	6-15	.32	.32			
	15-32	.28	.28			
	32-43	.32	.32			
	43-55	.28	.37			
	55-80	.28	.37			
Powellton silt loam-----	0-1	---	---	5	6	48
	1-3	.32	.32			
	3-9	.32	.32			
	9-19	.37	.37			
	19-28	.37	.37			
	28-33	.37	.37			
	33-48	.43	.43			
	48-66	.43	.43			
	66-73	.37	.37			
	73-83	.37	.37			
	83-109	.37	.37			
861:						
Toadtown gravelly loam-----	0-1	---	---	5	5	56
	1-6	.10	.20			
	6-15	.32	.32			
	15-32	.28	.28			
	32-43	.32	.32			
	43-55	.28	.37			
	55-80	.28	.37			
Powellton silt loam-----	0-1	---	---	5	6	48
	1-3	.32	.32			
	3-9	.32	.32			
	9-19	.37	.37			
	19-28	.37	.37			
	28-33	.37	.37			
	33-48	.43	.43			
	48-66	.43	.43			
	66-73	.37	.37			
	73-83	.37	.37			
	83-109	.37	.37			
862:						
Toadtown gravelly loam-----	0-1	---	---	5	5	56
	1-6	.10	.20			
	6-15	.32	.32			
	15-32	.28	.28			
	32-43	.32	.32			
	43-55	.28	.37			
	55-80	.28	.37			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
862:						
Powellton silt loam-----	0-1	---	---	5	6	48
	1-3	.32	.32			
	3-9	.32	.32			
	9-19	.37	.37			
	19-28	.37	.37			
	28-33	.37	.37			
	33-48	.43	.43			
	48-66	.43	.43			
	66-73	.37	.37			
	73-83	.37	.37			
	83-109	.37	.37			
863:						
Toadtown gravelly loam-----	0-1	---	---	5	5	56
	1-6	.10	.20			
	6-15	.32	.32			
	15-32	.28	.28			
	32-43	.32	.32			
	43-55	.28	.37			
	55-80	.28	.37			
Powellton silt loam-----	0-1	---	---	5	6	48
	1-3	.32	.32			
	3-9	.32	.32			
	9-19	.37	.37			
	19-28	.37	.37			
	28-33	.37	.37			
	33-48	.43	.43			
	48-66	.43	.43			
	66-73	.37	.37			
	73-83	.37	.37			
	83-109	.37	.37			
880:						
Sites taxadjunct gravelly loam-----	0-1	---	---	5	5	56
	1-3	.17	.28			
	3-10	.10	.24			
	10-21	.17	.32			
	21-34	.24	.37			
	34-59	.24	.32			
	59-72	.24	.28			
Jocal taxadjunct gravelly loam-----	0-3	---	---	5	5	56
	3-4	.15	.24			
	4-9	.15	.24			
	9-19	.10	.24			
	19-33	.10	.24			
	33-46	.10	.28			
	46-52	.05	.28			
	52-68	---	---			
881:						
Sites taxadjunct gravelly loam-----	0-1	---	---	5	5	56
	1-3	.17	.28			
	3-10	.10	.24			
	10-21	.17	.32			
	21-34	.24	.37			
	34-59	.24	.32			
	59-72	.24	.28			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
881:						
Jocal taxadjunct gravelly loam-----	0-3	---	---	5	5	56
	3-4	.15	.24			
	4-9	.15	.24			
	9-19	.10	.24			
	19-33	.10	.24			
	33-46	.10	.28			
	46-52	.05	.28			
	52-68	---	---			
882:						
Sites taxadjunct gravelly loam-----	0-1	---	---	5	5	56
	1-3	.17	.28			
	3-10	.10	.24			
	10-21	.17	.32			
	21-34	.24	.37			
	34-59	.24	.32			
	59-72	.24	.28			
Jocal taxadjunct gravelly loam-----	0-3	---	---	5	5	56
	3-4	.15	.24			
	4-9	.15	.24			
	9-19	.10	.24			
	19-33	.10	.24			
	33-46	.10	.28			
	46-52	.05	.28			
	52-68	---	---			
883:						
Sites taxadjunct gravelly loam-----	0-1	---	---	5	5	56
	1-3	.17	.28			
	3-10	.10	.24			
	10-21	.17	.32			
	21-34	.24	.37			
	34-59	.24	.32			
	59-72	.24	.28			
Jocal taxadjunct gravelly loam-----	0-3	---	---	5	5	56
	3-4	.15	.24			
	4-9	.15	.24			
	9-19	.10	.24			
	19-33	.10	.24			
	33-46	.10	.28			
	46-52	.05	.28			
	52-68	---	---			
885:						
Rogerville silt loam-----	0-2	---	---	5	5	56
	2-7	.24	.24			
	7-13	.15	.17			
	13-24	.20	.28			
	24-34	.15	.24			
	34-42	.10	.28			
	42-51	.02	.24			
	51-55	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
886: Rogerville silt loam-----	0-2	---	---	5	5	56
	2-7	.24	.24			
	7-13	.15	.17			
	13-24	.20	.28			
	24-34	.15	.24			
	34-42	.10	.28			
	42-51	.02	.24			
	51-55	---	---			
892: Rogerville silt loam-----	0-2	---	---	5	5	56
	2-7	.24	.24			
	7-13	.15	.17			
	13-24	.20	.28			
	24-34	.15	.24			
	34-42	.10	.28			
	42-51	.02	.24			
	51-55	---	---			
893: Rogerville silt loam-----	0-2	---	---	5	5	56
	2-7	.24	.24			
	7-13	.15	.17			
	13-24	.20	.28			
	24-34	.15	.24			
	34-42	.10	.28			
	42-51	.02	.24			
	51-55	---	---			
902: Lava flows, Lovejoy basalt.						
Lumpkin gravelly medial sandy loam----	0-3	.05	.10	1	3	86
	3-8	.02	.10			
	8-14	.02	.10			
	14	---	---			
903: Mudwash gravelly medial sandy loam----	0-1	---	---	5	3	86
	1-4	---	---			
	4-8	.10	.15			
	8-13	.05	.10			
	13-26	.05	.17			
	26-35	.24	.37			
	35-52	.24	.37			
	52-72	.02	.37			
	72-89	---	---			
Timberisland very gravelly medial sandy loam-----	0-2	---	---	3	3	86
	2-3	---	---			
	3-6	.05	.10			
	6-14	.02	.10			
	14-25	.02	.10			
	25-35	.02	.10			
	35-48	.02	.15			
	48	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
903: Lavatop gravelly medial fine sandy loam-----	0-0.5	---	---	2	3	86
	0.5-4	.05	.10			
	4-15	.05	.10			
	15-26	.02	.10			
	26	---	---			
904: Lava flows, Lovejoy basalt. Lavatop gravelly medial fine sandy loam-----	0-0.5	---	---	2	3	86
	0.5-4	.05	.10			
	4-15	.05	.10			
	15-26	.02	.10			
	26	---	---			
905: Lava flows, Lovejoy basalt. Lumpkin gravelly medial sandy loam-----	0-3	.05	.10	1	3	86
	3-8	.02	.10			
	8-14	.02	.10			
	14	---	---			
906: Lava flows, Lovejoy basalt. Lumpkin gravelly medial sandy loam-----	0-3	.05	.10	1	3	86
	3-8	.02	.10			
	8-14	.02	.10			
	14	---	---			
911: Endoquolls loam-----	0-3	.20	.20	5	6	48
	3-8	.24	.24			
	8-17	.24	.24			
	17-28	.32	.32			
	28-43	.28	.28			
	43-58	.37	.37			
	58-73	.20	.20			
923: Powderhouse medial sandy loam-----	0-2	---	---	2	3	86
	2-4	.10	.10			
	4-11	.10	.10			
	11-27	.02	.10			
	27-36	.02	.10			
	36-82	---	---			
McNair medial coarse sandy loam-----	0-3	---	---	4	3	86
	3-6	.10	.17			
	6-16	.10	.15			
	16-25	.05	.15			
	25-33	.05	.10			
	33-48	.05	.10			
	48-57	.02	.10			
	57-88	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
923:						
Greenwell medial sandy loam-----	0-2	---	---	2	3	86
	2-3	---	---			
	3-5	.10	.10			
	5-10	.10	.10			
	10-18	.10	.10			
	18-23	.10	.10			
	23-32	.05	.10			
	32	---	---			
924:						
Powderhouse medial sandy loam-----	0-2	---	---	2	3	86
	2-4	.10	.10			
	4-11	.10	.10			
	11-27	.02	.10			
	27-36	.02	.10			
	36-82	---	---			
McNair medial coarse sandy loam-----	0-3	---	---	4	3	86
	3-6	.10	.17			
	6-16	.10	.15			
	16-25	.05	.15			
	25-33	.05	.10			
	33-48	.05	.10			
	48-57	.02	.10			
	57-88	---	---			
Greenwell medial sandy loam-----	0-2	---	---	2	3	86
	2-3	---	---			
	3-5	.10	.10			
	5-10	.10	.10			
	10-18	.10	.10			
	18-23	.10	.10			
	23-32	.05	.10			
	32	---	---			
925:						
Powderhouse medial sandy loam-----	0-2	---	---	2	3	86
	2-4	.10	.10			
	4-11	.10	.10			
	11-27	.02	.10			
	27-36	.02	.10			
	36-82	---	---			
McNair medial coarse sandy loam-----	0-3	---	---	4	3	86
	3-6	.10	.17			
	6-16	.10	.15			
	16-25	.05	.15			
	25-33	.05	.10			
	33-48	.05	.10			
	48-57	.02	.10			
	57-88	---	---			
Greenwell medial sandy loam-----	0-2	---	---	2	3	86
	2-3	---	---			
	3-5	.10	.10			
	5-10	.10	.10			
	10-18	.10	.10			
	18-23	.10	.10			
	23-32	.05	.10			
	32	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
930:						
Shakeridge gravelly medial coarse sandy loam-----	0-2	---	---	5	3	86
	2-4	.05	.10			
	4-7	.02	.10			
	7-19	.02	.15			
	19-25	.02	.15			
	25-36	.02	.20			
	36-55	.05	.24			
	55-71	.05	.24			
	71-87	.05	.24			
Timberisland very gravelly medial sandy loam-----	0-2	---	---	3	3	86
	2-3	---	---			
	3-6	.05	.10			
	6-14	.02	.10			
	14-25	.02	.10			
	25-35	.02	.10			
	35-48	.02	.15			
	48	---	---			
931:						
Shakeridge gravelly medial coarse sandy loam-----	0-2	---	---	5	3	86
	2-4	.05	.10			
	4-7	.02	.10			
	7-19	.02	.15			
	19-25	.02	.15			
	25-36	.02	.20			
	36-55	.05	.24			
	55-71	.05	.24			
	71-87	.05	.24			
Mudwash gravelly medial sandy loam-----	0-1	---	---	5	3	86
	1-4	---	---			
	4-8	.10	.15			
	8-13	.05	.10			
	13-26	.05	.17			
	26-35	.24	.37			
	35-52	.24	.37			
	52-72	.02	.37			
	72-89	---	---			
Timberisland very gravelly medial sandy loam-----	0-2	---	---	3	3	86
	2-3	---	---			
	3-6	.05	.10			
	6-14	.02	.10			
	14-25	.02	.10			
	25-35	.02	.10			
	35-48	.02	.15			
	48	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
932:						
Shakeridge gravelly medial coarse sandy loam-----	0-2	---	---	5	3	86
	2-4	.05	.10			
	4-7	.02	.10			
	7-19	.02	.15			
	19-25	.02	.15			
	25-36	.02	.20			
	36-55	.05	.24			
	55-71	.05	.24			
	71-87	.05	.24			
Mudwash gravelly medial sandy loam----	0-1	---	---	5	3	86
	1-4	---	---			
	4-8	.10	.15			
	8-13	.05	.10			
	13-26	.05	.17			
	26-35	.24	.37			
	35-52	.24	.37			
	52-72	.02	.37			
	72-89	---	---			
933:						
Shakeridge gravelly medial coarse sandy loam-----	0-2	---	---	5	3	86
	2-4	.05	.10			
	4-7	.02	.10			
	7-19	.02	.15			
	19-25	.02	.15			
	25-36	.02	.20			
	36-55	.05	.24			
	55-71	.05	.24			
	71-87	.05	.24			
934:						
Mudwash gravelly medial sandy loam----	0-1	---	---	5	3	86
	1-4	---	---			
	4-8	.10	.15			
	8-13	.05	.10			
	13-26	.05	.17			
	26-35	.24	.37			
	35-52	.24	.37			
	52-72	.02	.37			
	72-89	---	---			
939:						
Fluvaquentic Humaquepts very fine sandy loam-----	0-7	.24	.24	5	3	86
	7-15	.28	.28			
	15-22	.32	.32			
	22-29	.32	.32			
	29-36	.32	.32			
	36-45	.24	.37			
	45-60	.15	.32			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
940:						
Dejonah gravelly loam-----	0-1	---	---	5	5	56
	1-4	.24	.37			
	4-10	.28	.32			
	10-16	.28	.32			
	16-28	.32	.32			
	28-37	.37	.37			
	37-53	.24	.24			
	53-60	.32	.32			
Stagpoint loam-----	0-0.5	---	---	5	5	56
	0.5-4	.28	.37			
	4-10	.24	.37			
	10-17	.10	.32			
	17-23	.10	.32			
	23-34	.05	.37			
	34-49	.10	.37			
	49-64	.10	.37			
	64-86	.15	.37			
941:						
Dejonah gravelly loam-----	0-1	---	---	5	5	56
	1-4	.24	.37			
	4-10	.28	.32			
	10-16	.28	.32			
	16-28	.32	.32			
	28-37	.37	.37			
	37-53	.24	.24			
	53-60	.32	.32			
Stagpoint loam-----	0-0.5	---	---	5	5	56
	0.5-4	.28	.37			
	4-10	.24	.37			
	10-17	.10	.32			
	17-23	.10	.32			
	23-34	.05	.37			
	34-49	.10	.37			
	49-64	.10	.37			
	64-86	.15	.37			
942:						
Stagpoint loam-----	0-0.5	---	---	5	5	56
	0.5-4	.28	.37			
	4-10	.24	.37			
	10-17	.10	.32			
	17-23	.10	.32			
	23-34	.05	.37			
	34-49	.10	.37			
	49-64	.10	.37			
	64-86	.15	.37			
Dejonah gravelly loam-----	0-1	---	---	5	5	56
	1-4	.24	.37			
	4-10	.28	.32			
	10-16	.28	.32			
	16-28	.32	.32			
	28-37	.37	.37			
	37-53	.24	.24			
	53-60	.32	.32			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
948:						
Stagpoint loam-----	0-0.5	---	---	5	5	56
	0.5-4	.28	.37			
	4-10	.24	.37			
	10-17	.10	.32			
	17-23	.10	.32			
	23-34	.05	.37			
	34-49	.10	.37			
	49-64	.10	.37			
	64-86	.15	.37			
Dejonah gravelly loam-----	0-1	---	---	5	5	56
	1-4	.24	.37			
	4-10	.28	.32			
	10-16	.28	.32			
	16-28	.32	.32			
	28-37	.37	.37			
	37-53	.24	.24			
	53-60	.32	.32			
949:						
Rogerville taxadjunct fine sandy loam--	0-2	---	---	3	3	86
	2-4	.24	.28			
	4-7	.10	.20			
	7-21	.05	.17			
	21-26	.10	.32			
	26-33	.20	.43			
	33-44	.28	.43			
	44-57	.17	.37			
	57	---	---			
950:						
Lumpkin taxadjunct very gravelly medial very fine sandy loam-----	0-4	.05	.24	1	6	48
	4-9	.10	.24			
	9	---	---			
Rock outcrop, olivine basalt, andesite, or mudflow.						
Powderhouse medial sandy loam-----	0-2	---	---	2	3	86
	2-4	.10	.10			
	4-11	.10	.10			
	11-27	.02	.10			
	27-36	.02	.10			
	36-82	---	---			
951:						
Lumpkin taxadjunct very gravelly medial very fine sandy loam-----	0-4	.05	.24	1	6	48
	4-9	.10	.24			
	9	---	---			
Rock outcrop, andesite.						
Powderhouse medial sandy loam-----	0-2	---	---	2	3	86
	2-4	.10	.10			
	4-11	.10	.10			
	11-27	.02	.10			
	27-36	.02	.10			
	36-82	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
960: Surnuf gravelly loam, high elevation---	0-0.5	---	---	5	6	48
	0.5-6	.20	.28			
	6-10	.24	.37			
	10-20	.20	.37			
	20-28	.10	.37			
	28-38	.20	.32			
	38-52	.20	.32			
	52-67	.15	.28			
	67-84	.15	.28			
961: Surnuf gravelly loam, high elevation---	0-0.5	---	---	5	6	48
	0.5-6	.20	.28			
	6-10	.24	.37			
	10-20	.20	.37			
	20-28	.10	.37			
	28-38	.20	.32			
	38-52	.20	.32			
	52-67	.15	.28			
	67-84	.15	.28			
962: Surnuf gravelly loam, high elevation---	0-0.5	---	---	5	6	48
	0.5-6	.20	.28			
	6-10	.24	.37			
	10-20	.20	.37			
	20-28	.10	.37			
	28-38	.20	.32			
	38-52	.20	.32			
	52-67	.15	.28			
	67-84	.15	.28			
963: Surnuf gravelly loam, high elevation---	0-0.5	---	---	5	6	48
	0.5-6	.20	.28			
	6-10	.24	.37			
	10-20	.20	.37			
	20-28	.10	.37			
	28-38	.20	.32			
	38-52	.20	.32			
	52-67	.15	.28			
	67-84	.15	.28			
990. Riverwash, frequently flooded						
991: Xerofluvents sandy loam, frequently flooded-----	0-6	.32	.32	5	3	86
	6-14	.32	.32			
	14-26	.37	.37			
	26-37	.37	.37			
	37-43	.24	.24			
	43-47	.20	.20			
	47-54	.37	.37			
	54-72	.28	.28			
	72-80	.37	.37			
995. Pits, gravel						

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		K	Kf	T		
	In					
996. Dumps, excavated material						
997. Pits						
998. Dumps, landfill						
999. Water						
DAM. Dam, manmade						

Table 23.--Chemical Properties of the Soils

(Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth		Clay Cation- exchange capacity meq/100g	Soil reaction pH	Calcium carbonate Pct	Gypsum Pct	Salinity ds/m	Sodium adsorption ratio
	In	Pct						
100:								
Anita clay-----	0-1	45-55	23-34	6.1-8.4	0	0	0.0-0.5	0
	1-3	45-55	17-27	6.1-8.4	0	0	0.0-0.5	0
	3-10	50-60	18-29	6.1-7.8	0	0	0.0-0.5	0
	10-15	50-60	18-29	6.1-7.8	0-2	0	0.0-0.5	0
	15-20	---	---	---	0-2	0	0	0
Galt clay-----	0-3	40-60	26-46	6.1-7.8	0	0	0.0-0.5	0
	3-13	40-60	26-46	6.1-7.8	0	0	0.0-0.5	0
	13-29	40-60	15-34	6.6-7.8	0	0	0.0-0.5	0
	29-32	37-60	14-34	6.6-8.4	0-2	0	0.0-0.5	0
	32-39	---	---	---	0-1	0	0	0
104:								
Bosquejo clay-----	0-8	40-50	30-45	6.1-7.3	0-2	0	0	0-1
	8-19	40-55	30-45	6.6-8.0	0-2	0	0.0-0.5	0-1
	19-24	40-55	30-45	6.6-8.0	0-1	0	0.0-0.5	0-1
	24-37	30-45	25-40	7.4-8.4	1-15	0	0.0-0.5	0-1
	37-44	20-35	20-35	6.6-8.4	0-5	0	0.0-0.5	0-1
	44-46	20-35	20-35	6.6-8.4	0-5	0	0.0-0.5	0-1
	46-60	18-27	20-30	6.6-8.4	0-2	0	0.0-0.5	0-1
105:								
Busacca clay loam-----	0-3	30-40	24-33	6.1-7.8	0-1	0	0	0-1
	3-8	30-40	24-33	6.1-7.8	0-1	0	0	0-1
	8-16	35-42	26-33	6.6-7.5	0-1	0	0	0-1
	16-28	35-42	26-33	6.6-7.5	0-1	0	0	0-1
	28-43	35-42	26-33	6.6-7.5	0-1	0	0	0-1
	43-60	25-35	19-27	7.0-8.5	0-2	0	0.0-0.5	0-1
	60-72	25-35	19-27	7.0-8.5	0-2	0	0.0-0.5	0-1
108:								
Tuscan gravelly loam-----	0-2	20-27	15-30	6.1-7.3	0	0	0	0
	2-4	30-55	15-30	6.6-7.8	0	0	0.0-0.5	0
	4-7	30-55	15-30	6.6-7.8	0	0	0.0-0.5	0
	7-11	30-55	15-30	6.6-7.8	0	0	0.0-0.5	0
	11	---	---	---	0	0	0	0
Igo gravelly loam-----	0-1	18-30	15-30	5.6-6.5	0	0	0	0
	1-5	22-36	15-30	6.6-7.3	0	0	0	0
	5-9	22-36	15-30	6.6-7.3	0	0	0	0
	9	---	---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m		
108:									
Anita clay-----	0-1	45-55	23-34	6.1-8.4	0	0	0.0-0.5	0	
	1-3	45-55	17-27	6.1-8.4	0	0	0.0-0.5	0	
	3-10	50-60	18-29	6.1-7.8	0	0	0.0-0.5	0	
	10-15	50-60	18-29	6.1-7.8	0-2	0	0.0-0.5	0	
	15-20	---	---	---	0-2	0	0	0	
109:									
Bosquejo clay loam-----	0-5	27-40	23-44	6.1-7.3	0-2	0	0	0-1	
	5-24	40-55	26-42	6.6-8.0	0-2	0	0.0-0.5	0-1	
	24-40	40-55	26-42	6.6-8.0	0-2	0	0.0-0.5	0-1	
	40-60	20-35	6.6-18	6.6-8.4	0-5	0	0.0-0.5	0-1	
110:									
Bosquejo silt loam, overwash, occasionally flooded-----	0-8	18-27	16-31	6.1-7.3	0	0	0	0-1	
	8-22	40-50	32-53	6.6-8.0	0-2	0	0.0-0.5	0-1	
	22-40	40-55	26-42	6.6-8.0	0-2	0	0.0-0.5	0-1	
	40-55	20-35	6.6-23	6.6-8.4	0-5	0	0.0-0.5	0-1	
	55-70	20-35	6.6-23	6.6-8.4	0-5	0	0.0-0.5	0-1	
111yu:									
Auburn loam-----	0-17	12-25	5.0-20	5.6-7.3	0	0	0	0	
	17	---	---	---	---	---	---	---	
Sobrante loam-----	0-5	10-25	5.0-20	5.6-6.5	0	0	0	0	
	5-27	25-35	10-20	5.6-6.5	0	0	0	0	
	27-39	---	---	---	---	---	---	---	
	39	---	---	---	---	---	---	---	
114yu:									
Auburn gravelly loam-----	0-17	12-25	5.0-20	5.6-7.3	0	0	0	0	
	17	---	---	---	---	---	---	---	
Sobrante gravelly loam-----	0-5	10-25	5.0-20	5.6-6.5	0	0	0	0	
	5-35	25-35	10-20	5.6-6.5	0	0	0	0	
	35-40	---	---	---	---	---	---	---	
	40	---	---	---	---	---	---	---	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
118:								
Xerorthents, tailings-----	0-3	10-16	7.4-12	5.1-7.3	0	0	0	0
	3-8	15-18	9.3-12	6.1-7.3	0	0	0	0
	8-21	3-7	2.3-5.4	6.1-7.3	0	0	0	0
	21-26	3-7	2.0-5.4	6.1-7.3	0	0	0	0
	26-35	3-7	2.0-5.4	6.1-7.3	0	0	0	0
	35-48	3-7	2.0-5.4	6.1-7.3	0	0	0	0
	48-59	3-7	2.0-5.4	6.1-7.3	0	0	0	0
	59-81	3-7	2.0-5.4	6.1-7.3	0	0	0	0
118co:								
Clear Lake clay, frequently flooded-----	0-4	40-60	30-50	5.6-7.3	0-2	0-1	0.0-4.0	0-12
	4-10	40-60	30-50	5.6-7.3	0-2	0-1	0.0-4.0	0-12
	10-20	40-60	30-55	5.6-7.8	0-2	0-1	0.0-4.0	0-12
	20-34	40-60	30-50	5.6-7.8	0-2	0-1	0.0-4.0	0-12
	34-47	40-60	30-50	5.6-8.4	0-2	0-1	0.0-4.0	0-12
	47-59	40-60	30-45	7.4-9.0	0-2	0-1	0.0-4.0	0-12
	59-79	40-60	30-45	7.4-9.0	0-2	0-1	0.0-4.0	0-12
119:								
Xerorthents, tailings-----	0-3	10-16	7.4-12	5.1-7.3	0	0	0	0
	3-8	15-18	9.3-12	6.1-7.3	0	0	0	0
	8-21	3-7	2.3-5.4	6.1-7.3	0	0	0	0
	21-26	3-7	2.0-5.4	6.1-7.3	0	0	0	0
	26-35	3-7	2.0-5.4	6.1-7.3	0	0	0	0
	35-48	3-7	2.0-5.4	6.1-7.3	0	0	0	0
	48-59	3-7	2.0-5.4	6.1-7.3	0	0	0	0
	59-81	3-7	2.0-5.4	6.1-7.3	0	0	0	0
Urban land.								
119yu:								
Auburn gravelly loam-----	0-17	12-25	5.0-20	5.6-7.3	0	0	0	0
	17	---	---	---	---	---	---	---
Sobrante gravelly loam-----	0-5	10-25	5.0-20	5.6-6.5	0	0	0	0
	5-35	25-35	10-20	5.6-6.5	0	0	0	0
	35-40	---	---	---	---	---	---	---
	40	---	---	---	---	---	---	---
Rock outcrop.								

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay Pct	Cation- exchange capacity meq/100g	Soil reaction pH	Calcium carbonate Pct	Gypsum Pct	Salinity dS/m	Sodium adsorption ratio
	In	Pct							
120:									
Gridley taxadjunct clay loam-----	0-4	27-30	18-29	6.6-8.4	0-1	0	0.0-2.0	0	
	4-9	35-50	23-45	6.6-8.4	0-1	0	0.0-2.0	0	
	9-15	35-50	6.0-31	6.6-8.4	0-1	0	0.0-2.0	0	
	15-21	30-50	5.2-31	7.4-8.4	1-5	0	0.0-2.0	0	
	21-60	5-25	1.1-4.5	---	1-5	0	0.0-2.0	0	
121:									
Boga loam-----	0-3	18-27	15-20	6.1-7.3	0	0	0.0-3.0	0	
	3-6	18-27	15-20	6.1-7.3	0	0	0.0-1.0	0	
	6-14	20-40	15-20	6.1-7.8	0	0	0.0-0.5	0	
	14-29	20-40	20-30	6.1-7.8	0	0	0.0-0.5	0	
	29-53	20-40	20-30	6.1-7.8	0	0	0.0-0.5	0	
	53-73	20-40	20-30	6.1-7.8	0	0	0.0-0.5	0	
	73-80	5-20	15-20	6.1-8.4	0	0	0.0-0.5	0	
Loemstone loam-----	0-2	18-27	15-20	6.1-7.3	0	0	0.0-3.0	0	
	2-4	18-27	15-20	6.1-7.3	0	0	0.0-1.0	0-1	
	4-10	18-27	15-20	6.1-7.3	0	0	0.0-0.5	0	
	10-18	20-40	20-30	6.1-7.8	0	0	0.0-0.5	0	
	18-23	20-40	20-30	6.1-7.8	0	0	0.0-0.5	0	
	23-32	20-40	20-30	6.1-7.8	0	0	0.0-0.5	0	
	32-40	20-40	20-30	6.1-7.8	0	0	0.0-0.5	0	
	40-48	20-40	20-30	6.1-7.8	0	0	0.0-0.5	0	
	48-57	5-20	15-20	6.1-8.4	0	0	0.0-0.5	0	
121su:									
Columbia fine sandy loam, frequently flooded	0-14	8-18	5.0-10	6.6-7.8	0	0	0.0-2.0	0	
	14-60	10-18	5.0-10	6.6-7.8	0	0	0.0-2.0	0	
125:									
Gridley taxadjunct loam-----	0-10	25-27	17-26	6.6-8.4	0	0	0.0-2.0	0	
	10-20	35-50	23-45	6.6-8.4	0	0	0.0-2.0	0	
	20-22	30-50	5.2-31	7.4-8.4	1-5	0	0.0-2.0	0	
	22-60	---	---	---	1-5	0	0.0-2.0	0	
Calcic Haploxerolls sandy loam-----	0-5	15-23	5.0-15	6.8-8.5	0-1	0	4.0-8.0	5-13	
	5-17	15-25	5.0-15	7.8-8.5	1-5	0	4.0-8.0	5-13	
	17-20	12-27	5.0-15	7.8-8.5	1-5	0	4.0-8.0	5-13	
	20-33	12-27	5.0-15	7.8-8.5	1-5	0	4.0-8.0	5-13	
	33-44	12-20	5.0-15	8.0-8.6	0-5	0	4.0-8.0	5-13	
	44-72	---	---	---	0-5	0	4.0-8.0	5-13	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay Cation- exchange capacity	Soil reaction pH	Calcium carbonate Pct	Gypsum Pct	Salinity ds/m	Sodium adsorption ratio
	In	Pct						
126: Liveoak sandy loam-----	0-4	16-20	14-17	6.1-7.3	0-1	0	0	0
	4-17	16-20	14-17	6.1-7.3	0-1	0	0	0
	17-37	12-25	10-20	6.6-7.3	0-1	0	0	0
	37-48	12-25	10-20	6.6-7.3	0-1	0	0	0
	48-61	12-25	9.8-20	6.6-7.3	0-1	0	0	0
	61-71	4-19	3.6-15	6.6-7.3	0-1	0	0	0
	71-75	4-19	3.6-15	6.6-7.3	0-1	0	0	0
127: Gridley taxadjunct loam-----	0-10	25-27	17-26	6.6-8.4	0	0	0.0-2.0	0
	10-20	35-50	23-45	6.6-8.4	0	0	0.0-2.0	0
	20-22	30-50	5.2-31	7.4-8.4	1-5	0	0.0-2.0	0
	22-60	---	---	---	---	0	---	---
130: Eastbiggs loam-----	0-3	15-27	8.0-14	5.6-7.3	0	0	0	0
	3-10	15-27	7.9-14	5.6-7.3	0	0	0	0
	10-17	20-35	10-18	6.1-7.3	0	0	0	0
	17-27	40-50	21-26	6.6-7.3	0	0	0	0
	27-34	---	---	---	---	0	---	---
	34-60	---	---	---	---	0	---	---
133: Eastbiggs loam-----	0-3	15-27	8.0-14	5.6-7.3	0	0	0	0
	3-10	15-27	7.9-14	5.6-7.3	0	0	0	0
	10-17	20-35	10-18	6.1-7.3	0	0	0	0
	17-27	40-50	21-26	6.6-7.3	0	0	0	0
	27-34	---	---	---	---	0	---	---
	34-60	---	---	---	---	0	---	---
Galt clay loam-----	0-6	30-40	20-32	6.1-7.8	0	0	0.0-0.5	0
	6-20	30-60	20-46	6.6-7.8	0	0	0.0-0.5	0
	20-27	40-60	15-34	6.6-7.8	0	0	0.0-0.5	0
	27-30	40-60	15-34	6.6-7.8	0	0	0.0-0.5	0
	30	---	---	---	0-1	0	0.0-0.5	0
136: Duric Xerarents, cut-----	0-3	17-45	10-27	6.0-7.2	0	0	0	0
	3-8	25-48	14-29	6.0-8.0	0	0	0.0-0.5	0
	8-10	25-48	14-29	6.0-8.0	0	0	0.0-0.5	0
	10-13	42-55	23-31	6.5-8.0	0	0	0.0-0.5	0
	13	---	---	---	---	0	---	---

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m		
136:									
Duric Xerarents, fill-----	0-5	16-35	12-25	6.0-6.5	0	0	0	0	
	5-12	22-42	13-26	6.3-7.5	0	0	0	0	
	12-16	45-55	24-31	7.0-7.5	0	0	0	0	
	16-30	0-15	0.0-10	7.0-7.5	0	0	0	0	
	30-38	22-42	13-25	6.3-7.5	0	0	0	0	
	38-48	22-42	13-25	6.3-7.5	0	0	0	0	
	48	---	---	---	---	0	---	---	
Eastbiggs fine sandy loam, leveled-----	0-5	15-27	8.0-14	5.6-7.3	0	0	0	0	
	5-12	15-27	7.9-14	5.6-7.3	0	0	0	0	
	12-18	20-30	10-16	6.1-7.3	0	0	0	0	
	18-23	20-30	10-16	6.1-7.3	0	0	0	0	
	23-26	27-35	14-18	6.1-7.3	0	0	0	0	
	26-30	40-50	21-26	6.6-7.3	0	0	0	0	
	30	---	---	---	---	0	---	---	
138su:									
Liveoak sandy clay loam-----	0-13	14-25	10-20	6.1-7.8	0-1	0	0.0-2.0	0	
	13-53	15-25	10-25	6.6-7.8	0-1	0	0.0-2.0	0	
	53-60	5-19	5.0-15	6.1-7.8	0-1	0	0.0-2.0	0	
139su:									
Liveoak taxadjunct loam, frequently flooded	0-6	18-25	10-15	7.4-8.4	0	0	0.0-2.0	0	
	6-54	18-25	10-15	7.4-8.4	0-1	0	0.0-2.0	0	
	54-63	---	---	---	---	---	---	---	
	63-73	10-18	5.0-10	6.6-7.3	0	0	0.0-2.0	0	
Galt taxadjunct clay loam, frequently flooded-----	0-21	27-35	15-20	6.6-8.4	0	0	0.0-2.0	0	
	21-22	0-0	---	---	1-3	---	---	---	
	22-25	10-20	5.0-10	6.6-8.4	1-2	0	0.0-2.0	0	
	25-26	---	---	---	---	---	---	---	
	26	---	---	---	---	---	---	---	
143su:									
Marcum clay loam-----	0-16	27-35	20-25	6.6-8.4	0	0	0.0-2.0	0	
	16-28	30-40	20-30	6.6-8.4	0	0	0.0-2.0	0	
	28-40	40-60	30-40	6.6-8.4	0	0	0.0-2.0	0	
	40-43	30-40	20-30	6.6-8.4	0-1	0	0.0-2.0	0	
	43-62	---	---	---	---	---	---	---	
Gridley clay loam-----	0-19	27-35	20-25	6.6-8.4	0	0	0.0-2.0	0	
	19-37	35-55	30-35	6.6-8.4	0	0	0.0-2.0	0	
	37	---	---	---	---	---	---	---	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
149yu:								
Flanly sandy loam-----	0-9	8-20	5.0-15	6.1-6.5	0	0	0	0
	9-16	18-25	5.0-15	5.6-6.0	0	0	0	0
	16-34	25-35	10-25	5.6-6.0	0	0	0	0
	34-38	---	---	---	---	---	---	---
150:								
Columbia stratified sand to fine sandy loam	0-5	5-20	5.0-10	6.6-7.8	0	0	0	0
	5-10	5-18	5.0-10	6.6-7.8	0	0	0	0
	10-29	5-18	5.0-10	6.6-7.8	0	0	0	0
	29-37	5-18	5.0-10	6.6-7.8	0	0	0	0
	37-46	5-18	5.0-10	6.6-7.8	0	0	0	0
	46-60	5-18	5.0-10	6.6-7.8	0	0	0	0
150su:								
Olashes sandy loam-----	0-4	15-20	10-15	6.1-7.3	0	0	0.0-2.0	0
	4-52	20-35	15-20	6.6-7.8	0	0	0.0-2.0	0
	52-60	5-10	5.0-8.0	7.4-7.8	0	0	0.0-2.0	0
151yu:								
Flanly sandy loam-----	0-9	8-20	5.0-15	6.1-6.5	0	0	0	0
	9-16	18-25	5.0-15	5.6-6.0	0	0	0	0
	16-34	25-35	10-25	5.6-6.0	0	0	0	0
	34-38	---	---	---	---	---	---	---
152:								
Gianella fine sandy loam, frequently flooded	0-6	4-20	3.9-18	5.6-8.4	0	0	0.0-0.5	0
	6-15	1-15	1.0-13	6.1-8.4	0	0	0.0-0.5	0
	15-20	1-15	1.0-13	6.1-8.4	0	0	0.0-0.5	0
	20-22	1-15	1.0-13	6.1-8.4	0	0	0.0-0.5	0
	22-27	1-15	1.0-13	6.1-8.4	0	0	0.0-0.5	0
	27-32	1-15	1.0-13	6.1-8.4	0	0	0.0-0.5	0
	32-43	1-15	1.0-13	6.1-8.4	0	0	0.0-0.5	0
	43-64	1-15	1.0-13	6.1-8.4	0	0	0.0-0.5	0
	64-80	1-15	1.0-13	6.1-8.4	0	0	0.0-0.5	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
153:								
Gianella sandy loam, frequently flooded-----	0-6	4-20	3.9-18	5.6-8.4	0	0	0.0-0.5	0
	6-17	1-15	1.0-13	6.1-8.4	0	0	0.0-0.5	0
	17-24	1-15	1.0-13	6.1-8.4	0	0	0.0-0.5	0
	24-29	1-15	1.0-13	6.1-8.4	0	0	0.0-0.5	0
	29-32	1-15	1.0-13	6.1-8.4	0	0	0.0-0.5	0
	32-43	1-15	1.0-13	6.1-8.4	0	0	0.0-0.5	0
	43-57	1-15	1.0-13	6.1-8.4	0	0	0.0-0.5	0
	57-67	1-15	1.0-13	6.1-8.4	0	0	0.0-0.5	0
	67-68	1-15	1.0-13	6.1-8.4	0	0	0.0-0.5	0
	68-71	1-15	1.0-13	6.1-8.4	0	0	0.0-0.5	0
	71-80	1-15	1.0-13	6.1-8.4	0	0	0.0-0.5	0
	80-84	1-15	1.0-13	6.1-8.4	0	0	0.0-0.5	0
154:								
Gianella silt loam, frequently flooded-----	0-2	4-22	3.9-25	5.6-8.4	0	0	0.0-0.5	0
	2-8	1-15	1.0-15	6.1-8.4	0	0	0.0-0.5	0
	8-15	1-15	1.0-15	6.1-8.4	0	0	0.0-0.5	0
	15-22	1-15	1.0-15	6.1-8.4	0	0	0.0-0.5	0
	22-31	1-15	1.0-20	6.1-8.4	0	0	0.0-0.5	0
	31-41	1-15	1.0-20	6.1-8.4	0	0	0.0-0.5	0
	41-50	1-15	1.0-25	6.1-8.4	0	0	0.0-0.5	0
	50-54	1-15	1.0-25	6.1-8.4	0	0	0.0-0.5	0
	54-64	1-15	1.0-25	6.1-8.4	0	0	0.0-0.5	0
	64-66	1-15	1.0-20	6.1-8.4	0	0	0.0-0.5	0
	66-69	1-15	1.0-20	6.1-8.4	0	0	0.0-0.5	0
	69-83	1-15	1.0-15	6.1-8.4	0	0	0.0-0.5	0
158:								
Gianella fine sandy loam, occasionally flooded-----	0-3	4-20	3.9-18	5.6-8.4	0	0	0.0-0.5	0
	3-12	4-20	3.9-18	5.6-8.4	0	0	0.0-0.5	0
	12-19	1-15	1.0-13	6.1-8.4	0	0	0.0-0.5	0
	19-28	1-15	1.0-13	6.1-8.4	0	0	0.0-0.5	0
	28-48	1-15	1.0-13	6.1-8.4	0	0	0.0-0.5	0
	48-57	1-15	1.0-13	6.1-8.4	0	0	0.0-0.5	0
	57-80	1-15	1.0-13	6.1-8.4	0	0	0.0-0.5	0
160:								
Gianella loam, occasionally flooded-----	0-18	7-22	6.4-19	5.6-8.4	0	0	0.0-0.5	0
	18-42	1-15	1.0-13	6.1-8.4	0	0	0.0-0.5	0
	42-52	1-15	1.0-13	6.1-8.4	0	0	0.0-0.5	0
	52-70	1-15	1.0-13	6.1-8.4	0	0	0.0-0.5	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
161:								
Gianella fine sandy loam, rarely flooded----	0-3	4-20	3.9-18	5.6-8.4	0	0	0.0-0.5	0
	3-12	4-20	3.9-18	5.6-8.4	0	0	0.0-0.5	0
	12-19	1-15	1.0-13	6.1-8.4	0	0	0.0-0.5	0
	19-28	1-15	1.0-13	6.1-8.4	0	0	0.0-0.5	0
	28-48	1-15	1.0-13	6.1-8.4	0	0	0.0-0.5	0
	48-57	1-15	1.0-13	6.1-8.4	0	0	0.0-0.5	0
	57-80	1-15	1.0-13	6.1-8.4	0	0	0.0-0.5	0
162:								
Gianella loam, rarely flooded-----	0-18	7-22	6.4-19	5.6-8.4	0	0	0.0-0.5	0
	18-42	1-15	1.0-13	6.1-8.4	0	0	0.0-0.5	0
	42-52	1-15	1.0-13	6.1-8.4	0	0	0.0-0.5	0
	52-70	1-15	1.0-13	6.1-8.4	0	0	0.0-0.5	0
163yu:								
Holillipah loamy sand-----	0-6	0-10	0.0-10	6.1-7.3	0	0	0	0
	6-66	0-10	0.0-10	6.1-7.3	0	0	0	0
165yu:								
Holland loam-----	0-15	12-25	10-25	5.1-6.5	0	0	0	0
	15-65	25-35	10-20	5.1-6.0	0	0	0	0
Hoda loam-----	0-7	7-18	5.0-25	5.6-6.5	0	0	0	0
	7-14	18-30	5.0-20	5.1-6.0	0	0	0	0
	14-72	35-50	---	4.5-5.5	0	0	0	0
Hotaw loam-----	0-12	7-15	5.0-10	5.6-6.5	0	0	0	0
	12-34	20-35	10-20	5.1-6.5	0	0	0	0
	34	---	---	---	---	---	---	---
173yu:								
Hotaw loam-----	0-12	7-15	5.0-10	5.6-6.5	0	0	0	0
	12-34	20-35	10-20	5.1-6.5	0	0	0	0
	34	---	---	---	---	---	---	---
Chawanakee gravelly sandy loam-----	0-1	---	---	---	0	0	0	0
	1-2	---	---	---	0	0	0	0
	2-5	2-6	8.0-15	5.6-6.5	0	0	0	0
	5-11	2-6	2.0-10	5.1-6.5	0	0	0	0
	11-19	2-6	2.0-10	5.1-6.5	0	0	0	0
	19	---	---	---	0	0	0	0
Holland loam-----	0-15	12-25	10-25	5.1-6.5	0	0	0	0
	15-65	25-35	10-20	5.1-6.0	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
175:								
Farwell clay loam, rarely flooded-----	0-5	27-35	22-32	6.1-7.8	0-1	0	0.0-1.5	0-1
	5-9	27-35	22-29	6.6-8.4	0-1	0	0.0-0.5	0-1
	9-18	27-35	22-28	6.6-8.4	0-1	0	0.0-0.5	0-1
	18-26	27-35	22-28	6.6-8.4	0-1	0	0.0-0.5	0-1
	26-33	27-35	22-28	6.6-8.4	0-1	0	0.0-0.5	0-1
	33-43	27-40	22-33	6.6-7.8	0-1	0	0.0-0.5	0-1
	43-57	27-40	22-33	6.6-7.8	0-1	0	0.0-0.5	0-1
	57-72	27-35	20-32	6.6-7.8	0-1	0	0.0-0.5	0-1
	72-81	20-35	15-28	6.6-7.8	0-1	0	0.0-0.5	0-1
176:								
Farwell loam, occasionally flooded-----	0-6	20-25	17-28	6.6-7.3	0	0	0.0-1.0	0-1
	6-20	20-25	17-27	7.0-7.3	0	0	0.0-0.5	0-1
	20-36	20-25	17-27	7.0-7.3	0	0	0.0-0.5	0-1
	36-50	27-35	22-32	7.0-7.3	0	0	0.0-0.5	0-1
	50-60	22-27	17-27	7.0-7.5	0-1	0	0.0-0.5	0-1
176yu:								
Jocal loam-----	0-8	15-27	10-30	5.5-6.0	0	0	0	0
	8-73	27-35	---	4.5-5.0	0	0	0	0
177:								
Farwell silt loam, occasionally flooded----	0-6	12-27	10-30	6.5-7.3	0	0	0.0-1.0	0-1
	6-11	20-40	17-33	7.2-8.0	0	0	0.0-0.5	0-1
	11-22	25-35	20-28	7.0-8.0	0	0	0.0-0.5	0-1
	22-33	25-35	20-33	7.0-8.0	0	0	0.0-0.5	0-1
	33-39	25-35	20-30	7.0-8.0	0	0	0.0-0.5	0-1
	39-49	20-30	16-25	7.5-7.7	0-1	0	0.0-0.5	0-1
	49-62	20-30	16-25	7.5-7.7	0-1	0	0.0-0.5	0-1
178:								
Arbuckle gravelly loam-----	0-4	20-24	16-19	6.1-7.3	0	0	0	0
	4-9	20-24	14-19	6.1-7.8	0	0	0.0-0.5	0
	9-20	24-35	17-27	6.1-7.8	0	0	0.0-0.5	0
	20-32	24-35	17-27	6.1-7.8	0	0	0.0-0.5	0
	32-49	24-35	17-27	6.1-7.8	0	0	0.0-0.5	0
	49-68	24-26	17-20	7.4-7.8	0	0	0.0-0.5	0
	68-86	20-26	14-20	7.4-7.8	0	0	0.0-0.5	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m		
179:									
Moda taxadjunct loam-----	0-2	10-20	5.4-11	5.6-6.5	0-1	0	0	0	
	2-6	10-20	5.1-11	5.6-6.5	0-1	0	0	0	
	6-13	24-30	12-16	6.1-7.3	0-1	0	0	0	
	13-22	45-50	22-26	6.6-8.4	0-1	0	0.0-0.5	0	
	22	---	---	---	1-3	0	0.0-0.5	0	
Arbuckle gravelly loam-----	0-4	20-24	16-19	6.1-7.3	0	0	0	0	
	4-9	20-24	14-19	6.1-7.8	0	0	0.0-0.5	0	
	9-20	24-35	17-27	6.1-7.8	0	0	0.0-0.5	0	
	20-32	24-35	17-27	6.1-7.8	0	0	0.0-0.5	0	
	32-49	24-35	17-27	6.1-7.8	0	0	0.0-0.5	0	
	49-68	24-26	17-20	7.4-7.8	0	0	0.0-0.5	0	
	68-86	20-26	14-20	7.4-7.8	0	0	0.0-5.0	0	
180:									
Dodgeland silty clay loam, occasionally flooded-----	0-4	30-40	20-37	5.6-6.5	0-1	0	0.0-0.5	0	
	4-8	40-45	26-41	6.1-7.3	0-1	0	0.0-0.5	0	
	8-18	45-55	23-39	6.6-7.8	0-1	0	0.0-0.5	0	
	18-33	45-55	23-39	6.6-7.8	0-1	0	0.0-0.5	0	
	33-45	45-55	23-34	6.6-7.8	0-1	0	0.0-0.5	0	
	45-53	40-55	15-27	7.4-8.4	0-1	0	0.0-0.5	0	
	53-60	18-35	6.0-15	7.4-8.4	0-1	0	0.0-0.5	0	
	60-70	18-35	6.0-15	7.4-8.4	0-1	0	0.0-0.5	0	
	70-80	18-35	6.0-15	7.4-8.4	0-1	0	0.0-0.5	0	
181:									
Dodgeland silty clay loam, frequently flooded-----	0-4	30-40	20-37	5.6-6.5	0-1	0	0.0-0.5	0	
	4-8	40-45	26-41	6.1-7.3	0-1	0	0.0-0.5	0	
	8-18	45-55	23-39	6.6-7.8	0-1	0	0.0-0.5	0	
	18-33	45-55	23-39	6.6-7.8	0-1	0	0.0-0.5	0	
	33-45	45-55	23-34	6.6-7.8	0-1	0	0.0-0.5	0	
	45-53	40-55	15-27	7.4-8.4	0-1	0	0.0-0.5	0	
	53-60	18-35	6.0-15	7.4-8.4	0-1	0	0.0-0.5	0	
	60-70	18-35	6.0-15	7.4-8.4	0-1	0	0.0-0.5	0	
	70-80	18-35	6.0-15	7.4-8.4	0-1	0	0.0-0.5	0	
188yu:									
Mariposa taxadjunct gravelly loam-----	0-4	10-20	5.0-15	5.6-7.3	0	0	0	0	
	4-23	20-35	---	4.5-6.0	0	0	0	0	
	23	---	---	---	---	---	---	---	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay Pct	Cation- exchange capacity meq/100g	Soil reaction pH	Calcium carbonate Pct	Gypsum Pct	Salinity dS/m	Sodium adsorption ratio
	In	Pct							
189:									
Esquon silt loam, overwash-----	0-4	12-27	12-27	9.1-29	6.1-7.3	0	0	0.0-0.5	0
	4-9	12-27	12-27	7.2-29	6.6-8.4	0	0	0.0-0.5	0
	9-15	12-27	12-27	4.2-29	6.6-8.4	0	0	0.0-0.5	0
	15-35	40-60	40-60	20-29	7.4-8.4	0-1	0	0.0-0.5	0
	35-48	40-60	40-60	12-29	7.4-8.4	0-1	0	0.0-0.5	0
	48-60	27-60	27-60	8.5-34	7.4-8.4	0-2	0	0.0-0.5	0
	60	---	---	---	---	5-14	0	0.0-0.5	0
189yu:									
Mariposa taxadjunct gravelly loam-----	0-4	10-20	10-20	5.0-15	5.6-7.3	0	0	0	0
	4-23	20-35	20-35	---	4.5-6.0	0	0	0	0
	23	---	---	---	---	---	---	---	---
196yu:									
Mildred cobbly loam-----	0-3	18-27	18-27	10-20	5.6-6.5	0	0	0	0
	3-9	27-35	27-35	10-20	6.1-7.3	0	0	0	0
	9-23	35-60	35-60	15-40	6.1-7.3	0	0	0	0
	23	---	---	---	---	---	---	---	---
200:									
Parrott silt loam, occasionally flooded-----	0-2	18-27	18-27	16-30	6.1-7.8	0	0	0.0-2.0	0-1
	2-8	18-27	18-27	15-25	6.1-7.8	0	0	0.0-0.5	0-1
	8-20	18-27	18-27	15-30	6.1-7.8	0	0	0.0-0.5	0-1
	20-37	18-27	18-27	15-30	6.6-7.8	0	0	0.0-0.5	0-1
	37-49	18-27	18-27	15-30	6.6-7.8	0	0	0.0-0.5	0-1
	49-63	12-30	12-30	9.8-30	6.6-7.8	0-1	0	0.0-0.5	0-1
	63-89	12-30	12-30	9.8-30	6.6-7.8	0-1	0	0.0-0.5	0-1
201:									
Parrott silt loam, frequently flooded-----	0-2	18-27	18-27	16-30	6.1-7.8	0	0	0.0-2.0	0-1
	2-8	18-27	18-27	15-25	6.1-7.8	0	0	0.0-0.5	0-1
	8-20	18-27	18-27	15-30	6.1-7.8	0	0	0.0-0.5	0-1
	20-37	18-27	18-27	15-30	6.6-7.8	0	0	0.0-0.5	0-1
	37-49	18-27	18-27	15-30	6.6-7.8	0	0	0.0-0.5	0-1
	49-63	12-30	12-30	9.8-30	6.6-7.8	0-1	0	0.0-0.5	0-1
	63-89	12-30	12-30	9.8-30	6.6-7.8	0-1	0	0.0-0.5	0-1

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	Pct	meq/100g	pH	Pct	Pct	dS/m	
203:									
Kusalslough silty clay loam, occasionally flooded-----	0-4	28-35	22-29	5.6-7.3	0-1	0	0	0	0-1
	4-12	28-35	22-29	5.6-7.3	0-1	0	0	0	0-1
	12-21	30-40	23-32	6.6-7.8	0-1	0	0	0.0-0.5	0-1
	21-31	30-40	24-32	6.6-7.8	0-1	0	0	0.0-0.5	0-1
	31-41	35-40	27-32	6.6-7.8	0-1	0	0	0.0-0.5	0-1
	41-57	40-55	28-42	6.6-7.8	0-1	0	0	0.0-0.5	0-1
	57-69	40-55	28-42	6.6-7.8	0-1	0	0	0.0-0.5	0-1
	69-80	40-55	28-42	6.6-7.8	0-1	0	0	0.0-0.5	0-1
205:									
Parrott silt loam, frequently flooded-----	0-2	18-27	16-30	6.1-7.8	0	0	0	0.0-2.0	0-1
	2-8	18-27	15-25	6.1-7.8	0	0	0	0.0-0.5	0-1
	8-20	18-27	15-30	6.1-7.8	0	0	0	0.0-0.5	0-1
	20-37	18-27	15-30	6.6-7.8	0	0	0	0.0-0.5	0-1
	37-49	18-27	15-30	6.6-7.8	0	0	0	0.0-0.5	0-1
	49-63	12-30	9.8-30	6.6-7.8	0-1	0	0	0.0-0.5	0-1
	63-89	12-30	9.8-30	6.6-7.8	0-1	0	0	0.0-0.5	0-1
Vermet silt loam, frequently flooded-----									
	0-2	18-25	15-30	6.1-7.8	0	0	0	0.0-0.5	0
	2-8	18-25	15-30	6.1-7.8	0	0	0	0.0-0.5	0
	8-13	18-25	15-30	6.1-7.8	0	0	0	0.0-0.5	0
	13-16	29-35	15-30	6.6-8.4	0-1	0	0	0.0-0.5	0
	16-26	29-35	15-30	6.6-8.4	0-1	0	0	0.0-0.5	0
	26-41	29-35	15-30	6.6-8.4	0-1	0	0	0.0-0.5	0
	41-62	30-40	9.0-30	6.6-8.4	0-1	0	0	0.0-0.5	0
	62-72	30-40	9.0-30	6.6-8.4	0-1	0	0	0.0-0.5	0
206:									
Islandbar sandy loam-----	0-2	---	---	---	0	0	0	0	0
	2-5	10-18	12-20	5.6-7.3	0	0	0	0	0
	5-9	10-18	5.0-16	5.6-7.3	0	0	0	0	0
	9-27	5-18	2.0-10	5.1-7.3	0	0	0	0	0
	27-36	5-18	2.0-10	5.1-7.3	0	0	0	0	0
	36-47	5-18	2.0-10	5.1-7.3	0	0	0	0	0
	47-58	5-18	2.0-10	5.1-7.3	0	0	0	0	0
	58-62	2-18	2.0-5.0	5.1-7.3	0	0	0	0	0
	62-72	2-18	2.0-5.0	5.1-7.3	0	0	0	0	0
Chawanakee gravelly sandy loam-----									
	0-1	---	---	---	0	0	0	0	0
	1-2	---	---	---	0	0	0	0	0
	2-5	2-6	8.0-15	5.6-6.5	0	0	0	0	0
	5-11	2-6	2.0-10	5.1-6.5	0	0	0	0	0
	11-19	2-6	2.0-10	5.1-6.5	0	0	0	0	0
	19	---	---	---	0	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
207:								
Islandbar sandy loam-----	0-2	---	---	---	0	0	0	0
	2-5	10-18	12-20	5.6-7.3	0	0	0	0
	5-9	10-18	5.0-16	5.6-7.3	0	0	0	0
	9-27	5-18	2.0-10	5.1-7.3	0	0	0	0
	27-36	5-18	2.0-10	5.1-7.3	0	0	0	0
	36-47	5-18	2.0-10	5.1-7.3	0	0	0	0
	47-58	5-18	2.0-10	5.1-7.3	0	0	0	0
	58-62	2-18	2.0-5.0	5.1-7.3	0	0	0	0
	62-72	2-18	2.0-5.0	5.1-7.3	0	0	0	0
Chawanakee gravelly sandy loam-----	0-1	---	---	---	0	0	0	0
	1-2	---	---	---	0	0	0	0
	2-5	2-6	8.0-15	5.6-6.5	0	0	0	0
	5-11	2-6	2.0-10	5.1-6.5	0	0	0	0
	11-19	2-6	2.0-10	5.1-6.5	0	0	0	0
	19	---	---	---	0	0	0	0
208:								
Islandbar sandy loam-----	0-2	---	---	---	0	0	0	0
	2-5	10-18	12-20	5.6-7.3	0	0	0	0
	5-9	10-18	5.0-16	5.6-7.3	0	0	0	0
	9-27	5-18	2.0-10	5.1-7.3	0	0	0	0
	27-36	5-18	2.0-10	5.1-7.3	0	0	0	0
	36-47	5-18	2.0-10	5.1-7.3	0	0	0	0
	47-58	5-18	2.0-10	5.1-7.3	0	0	0	0
	58-62	2-18	2.0-5.0	5.1-7.3	0	0	0	0
	62-72	2-18	2.0-5.0	5.1-7.3	0	0	0	0
Chawanakee gravelly sandy loam-----	0-1	---	---	---	0	0	0	0
	1-2	---	---	---	0	0	0	0
	2-5	2-6	8.0-15	5.6-6.5	0	0	0	0
	5-11	2-6	2.0-10	5.1-6.5	0	0	0	0
	11-19	2-6	2.0-10	5.1-6.5	0	0	0	0
	19	---	---	---	0	0	0	0
209:								
Islandbar sandy loam-----	0-2	---	---	---	0	0	0	0
	2-5	10-18	12-20	5.6-7.3	0	0	0	0
	5-9	10-18	5.0-16	5.6-7.3	0	0	0	0
	9-27	5-18	2.0-10	5.1-7.3	0	0	0	0
	27-36	5-18	2.0-10	5.1-7.3	0	0	0	0
	36-47	5-18	2.0-10	5.1-7.3	0	0	0	0
	47-58	5-18	2.0-10	5.1-7.3	0	0	0	0
	58-62	2-18	2.0-5.0	5.1-7.3	0	0	0	0
	62-72	2-18	2.0-5.0	5.1-7.3	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
209:								
Chawanakee gravelly sandy loam-----	0-1	---	---	---	0	0	0	0
	1-2	---	---	---	0	0	0	0
	2-5	2-6	8.0-15	5.6-6.5	0	0	0	0
	5-11	2-6	2.0-10	5.1-6.5	0	0	0	0
	11-19	2-6	2.0-10	5.1-6.5	0	0	0	0
	19	---	---	---	0	0	0	0
210:								
Featherfalls sandy loam-----	0-1	---	---	---	0	0	0	0
	1-4	8-23	10-20	5.1-6.5	0	0	0	0
	4-7	8-23	10-20	5.1-6.5	0	0	0	0
	7-17	16-33	20-30	5.1-7.3	0	0	0	0
	17-24	16-33	20-30	5.1-7.3	0	0	0	0
	24-32	16-33	20-30	5.1-7.3	0	0	0	0
	32-42	16-33	20-30	5.1-7.3	0	0	0	0
	42-61	25-38	30-40	5.6-6.5	0	0	0	0
	61-72	25-38	30-40	5.6-6.5	0	0	0	0
	72-80	5-27	---	5.0-6.0	0	0	0	0
Islandbar sandy loam-----	0-2	---	---	---	0	0	0	0
	2-5	10-18	12-20	5.6-7.3	0	0	0	0
	5-9	10-18	5.0-16	5.6-7.3	0	0	0	0
	9-27	5-18	2.0-10	5.1-7.3	0	0	0	0
	27-36	5-18	2.0-10	5.1-7.3	0	0	0	0
	36-47	5-18	2.0-10	5.1-7.3	0	0	0	0
	47-58	5-18	2.0-10	5.1-7.3	0	0	0	0
	58-62	2-18	2.0-5.0	5.1-7.3	0	0	0	0
	62-72	2-18	2.0-5.0	5.1-7.3	0	0	0	0
211:								
Featherfalls sandy loam-----	0-1	---	---	---	0	0	0	0
	1-4	8-23	10-20	5.1-6.5	0	0	0	0
	4-7	8-23	10-20	5.1-6.5	0	0	0	0
	7-17	16-33	20-30	5.1-7.3	0	0	0	0
	17-24	16-33	20-30	5.1-7.3	0	0	0	0
	24-32	16-33	20-30	5.1-7.3	0	0	0	0
	32-42	16-33	20-30	5.1-7.3	0	0	0	0
	42-61	25-38	30-40	5.6-6.5	0	0	0	0
	61-72	25-38	30-40	5.6-6.5	0	0	0	0
	72-80	5-27	---	5.0-6.0	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
211:								
Islandbar sandy loam-----	0-2	---	---	---	0	0	0	0
	2-5	10-18	12-20	5.6-7.3	0	0	0	0
	5-9	10-18	5.0-16	5.6-7.3	0	0	0	0
	9-27	5-18	2.0-10	5.1-7.3	0	0	0	0
	27-36	5-18	2.0-10	5.1-7.3	0	0	0	0
	36-47	5-18	2.0-10	5.1-7.3	0	0	0	0
	47-58	5-18	2.0-10	5.1-7.3	0	0	0	0
	58-62	2-18	2.0-5.0	5.1-7.3	0	0	0	0
	62-72	2-18	2.0-5.0	5.1-7.3	0	0	0	0
212:								
Featherfalls sandy loam-----	0-1	---	---	---	0	0	0	0
	1-4	8-23	10-20	5.1-6.5	0	0	0	0
	4-7	8-23	10-20	5.1-6.5	0	0	0	0
	7-17	16-33	20-30	5.1-7.3	0	0	0	0
	17-24	16-33	20-30	5.1-7.3	0	0	0	0
	24-32	16-33	20-30	5.1-7.3	0	0	0	0
	32-42	16-33	20-30	5.1-7.3	0	0	0	0
	42-61	25-38	30-40	5.6-6.5	0	0	0	0
	61-72	25-38	30-40	5.6-6.5	0	0	0	0
	72-80	5-27	---	5.0-6.0	0	0	0	0
Islandbar sandy loam-----	0-2	---	---	---	0	0	0	0
	2-5	10-18	12-20	5.6-7.3	0	0	0	0
	5-9	10-18	5.0-16	5.6-7.3	0	0	0	0
	9-27	5-18	2.0-10	5.1-7.3	0	0	0	0
	27-36	5-18	2.0-10	5.1-7.3	0	0	0	0
	36-47	5-18	2.0-10	5.1-7.3	0	0	0	0
	47-58	5-18	2.0-10	5.1-7.3	0	0	0	0
	58-62	2-18	2.0-5.0	5.1-7.3	0	0	0	0
	62-72	2-18	2.0-5.0	5.1-7.3	0	0	0	0
213:								
Featherfalls sandy loam-----	0-1	---	---	---	0	0	0	0
	1-4	8-23	10-20	5.1-6.5	0	0	0	0
	4-7	8-23	10-20	5.1-6.5	0	0	0	0
	7-17	16-33	20-30	5.1-7.3	0	0	0	0
	17-24	16-33	20-30	5.1-7.3	0	0	0	0
	24-32	16-33	20-30	5.1-7.3	0	0	0	0
	32-42	16-33	20-30	5.1-7.3	0	0	0	0
	42-61	25-38	30-40	5.6-6.5	0	0	0	0
	61-72	25-38	30-40	5.6-6.5	0	0	0	0
	72-80	5-27	---	5.0-6.0	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m		
213:									
Islandbar sandy loam-----	0-2	---	---	---	0	0	0	0	
	2-5	10-18	12-20	5.6-7.3	0	0	0	0	
	5-9	10-18	5.0-16	5.6-7.3	0	0	0	0	
	9-27	5-18	2.0-10	5.1-7.3	0	0	0	0	
	27-36	5-18	2.0-10	5.1-7.3	0	0	0	0	
	36-47	5-18	2.0-10	5.1-7.3	0	0	0	0	
	47-58	5-18	2.0-10	5.1-7.3	0	0	0	0	
	58-62	2-18	2.0-5.0	5.1-7.3	0	0	0	0	
	62-72	2-18	2.0-5.0	5.1-7.3	0	0	0	0	
214:									
Crystalhill gravelly coarse sandy loam-----	0-2	---	---	---	0	0	0	0	
	2-7	5-8	5.0-16	4.5-6.5	0	0	0	0	
	7-14	5-12	2.0-10	5.1-6.5	0	0	0	0	
	14-22	5-12	2.0-10	5.1-6.5	0	0	0	0	
	22-33	5-12	2.0-10	5.1-6.5	0	0	0	0	
	33-44	5-12	2.0-10	5.1-6.5	0	0	0	0	
	44-66	1-14	2.0-10	5.1-6.5	0	0	0	0	
	66	---	---	---	0	0	0	0	
Oregongulch gravelly sandy loam-----	0-1	---	---	---	0	0	0	0	
	1-4	5-12	5.0-16	6.1-7.3	0	0	0	0	
	4-7	3-15	2.0-10	5.1-6.5	0	0	0	0	
	7-13	3-15	2.0-10	5.1-6.5	0	0	0	0	
	13-18	3-15	2.0-10	5.1-6.5	0	0	0	0	
	18-24	3-13	2.0-10	5.6-6.5	0	0	0	0	
	24-60	0-10	---	---	0	0	0	0	
Craigsaddle coarse sandy loam-----	0-5	5-10	2.7-5.5	5.1-6.5	0	0	0	0	
	5-11	8-12	4.3-6.5	5.1-6.5	0	0	0	0	
	11-17	8-12	4.3-6.5	5.1-6.5	0	0	0	0	
	17-21	8-12	4.2-6.4	5.1-6.5	0	0	0	0	
	21-31	15-27	7.6-14	5.1-6.5	0	0	0	0	
	31-51	15-27	7.6-14	5.1-6.5	0	0	0	0	
	51-58	13-25	6.6-13	4.5-6.5	0	0	0	0	
	58-80	---	6.6-13	4.5-6.0	0	0	0	0	
Rock outcrop, trondhjemite.									

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
215:								
Crystalhill gravelly coarse sandy loam-----	0-2	---	---	---	0	0	0	0
	2-7	5-8	5.0-16	4.5-6.5	0	0	0	0
	7-14	5-12	2.0-10	5.1-6.5	0	0	0	0
	14-22	5-12	2.0-10	5.1-6.5	0	0	0	0
	22-33	5-12	2.0-10	5.1-6.5	0	0	0	0
	33-44	5-12	2.0-10	5.1-6.5	0	0	0	0
	44-66	1-14	2.0-10	5.1-6.5	0	0	0	0
	66	---	---	---	0	0	0	0
Oregongulch gravelly sandy loam-----	0-1	---	---	---	0	0	0	0
	1-4	5-12	5.0-16	6.1-7.3	0	0	0	0
	4-7	3-15	2.0-10	5.1-6.5	0	0	0	0
	7-13	3-15	2.0-10	5.1-6.5	0	0	0	0
	13-18	3-15	2.0-10	5.1-6.5	0	0	0	0
	18-24	3-13	2.0-10	5.6-6.5	0	0	0	0
	24-60	0-10	---	---	0	0	0	0
Craigsaddle coarse sandy loam-----	0-5	5-10	2.7-5.5	5.1-6.5	0	0	0	0
	5-11	8-12	4.3-6.5	5.1-6.5	0	0	0	0
	11-17	8-12	4.3-6.5	5.1-6.5	0	0	0	0
	17-21	8-12	4.2-6.4	5.1-6.5	0	0	0	0
	21-31	15-27	7.6-14	5.1-6.5	0	0	0	0
	31-51	15-27	7.6-14	5.1-6.5	0	0	0	0
	51-58	13-25	6.6-13	4.5-6.5	0	0	0	0
	58-80	---	6.6-13	4.5-6.0	0	0	0	0
Rock outcrop, trondhjemite.								
216:								
Crystalhill gravelly coarse sandy loam-----	0-2	---	---	---	0	0	0	0
	2-7	5-8	5.0-16	4.5-6.5	0	0	0	0
	7-14	5-12	2.0-10	5.1-6.5	0	0	0	0
	14-22	5-12	2.0-10	5.1-6.5	0	0	0	0
	22-33	5-12	2.0-10	5.1-6.5	0	0	0	0
	33-44	5-12	2.0-10	5.1-6.5	0	0	0	0
	44-66	1-14	2.0-10	5.1-6.5	0	0	0	0
	66	---	---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
216:								
Oregongulch gravelly sandy loam-----	0-1	---	---	---	0	0	0	0
	1-4	5-12	5.0-16	6.1-7.3	0	0	0	0
	4-7	3-15	2.0-10	5.1-6.5	0	0	0	0
	7-13	3-15	2.0-10	5.1-6.5	0	0	0	0
	13-18	3-15	2.0-10	5.1-6.5	0	0	0	0
	18-24	3-13	2.0-10	5.6-6.5	0	0	0	0
	24-60	0-10	---	---	0	0	0	0
Craigsaddle coarse sandy loam-----	0-5	5-10	2.7-5.5	5.1-6.5	0	0	0	0
	5-11	8-12	4.3-6.5	5.1-6.5	0	0	0	0
	11-17	8-12	4.3-6.5	5.1-6.5	0	0	0	0
	17-21	8-12	4.2-6.4	5.1-6.5	0	0	0	0
	21-31	15-27	7.6-14	5.1-6.5	0	0	0	0
	31-51	15-27	7.6-14	5.1-6.5	0	0	0	0
	51-58	13-25	6.6-13	4.5-6.5	0	0	0	0
	58-80	---	6.6-13	4.5-6.0	0	0	0	0
Rock outcrop, trondhjemite.								
217:								
Crystalhill gravelly coarse sandy loam-----	0-2	---	---	---	0	0	0	0
	2-7	5-8	5.0-16	4.5-6.5	0	0	0	0
	7-14	5-12	2.0-10	5.1-6.5	0	0	0	0
	14-22	5-12	2.0-10	5.1-6.5	0	0	0	0
	22-33	5-12	2.0-10	5.1-6.5	0	0	0	0
	33-44	5-12	2.0-10	5.1-6.5	0	0	0	0
	44-66	1-14	2.0-10	5.1-6.5	0	0	0	0
	66	---	---	---	0	0	0	0
Oregongulch gravelly sandy loam-----	0-1	---	---	---	0	0	0	0
	1-4	5-12	5.0-16	6.1-7.3	0	0	0	0
	4-7	3-15	2.0-10	5.1-6.5	0	0	0	0
	7-13	3-15	2.0-10	5.1-6.5	0	0	0	0
	13-18	3-15	2.0-10	5.1-6.5	0	0	0	0
	18-24	3-13	2.0-10	5.6-6.5	0	0	0	0
	24-60	0-10	---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
217:								
Craigsaddle coarse sandy loam-----	0-5	5-10	2.7-5.5	5.1-6.5	0	0	0	0
	5-11	8-12	4.3-6.5	5.1-6.5	0	0	0	0
	11-17	8-12	4.3-6.5	5.1-6.5	0	0	0	0
	17-21	8-12	4.2-6.4	5.1-6.5	0	0	0	0
	21-31	15-27	7.6-14	5.1-6.5	0	0	0	0
	31-51	15-27	7.6-14	5.1-6.5	0	0	0	0
	51-58	13-25	6.6-13	4.5-6.5	0	0	0	0
	58-80	---	6.6-13	4.5-6.0	0	0	0	0
Rock outcrop, trondhjemite.								
218:								
Rock outcrop, quartz diorite.								
Lithic Xerorthents gravelly sandy loam-----	0-2	---	---	---	0	0	0	0
	2-4	6-8	5.0-16	5.1-6.0	0	0	0	0
	4-8	6-10	2.0-10	5.1-6.0	0	0	0	0
	8	---	---	---	0	0	0	0
Chawanakee gravelly sandy loam-----	0-1	---	---	---	0	0	0	0
	1-2	---	---	---	0	0	0	0
	2-5	2-6	8.0-15	5.6-6.5	0	0	0	0
	5-11	2-6	2.0-10	5.1-6.5	0	0	0	0
	11-19	2-6	2.0-10	5.1-6.5	0	0	0	0
	19	---	---	---	0	0	0	0
219:								
Rock outcrop, quartz diorite.								
Lithic Xerorthents gravelly sandy loam-----	0-2	---	---	---	0	0	0	0
	2-4	6-8	5.0-16	5.1-6.0	0	0	0	0
	4-8	6-10	2.0-10	5.1-6.0	0	0	0	0
	8	---	---	---	0	0	0	0
Chawanakee gravelly sandy loam-----	0-1	---	---	---	0	0	0	0
	1-2	---	---	---	0	0	0	0
	2-5	2-6	8.0-15	5.6-6.5	0	0	0	0
	5-11	2-6	2.0-10	5.1-6.5	0	0	0	0
	11-19	2-6	2.0-10	5.1-6.5	0	0	0	0
	19	---	---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
220:								
Esquon clay, frequently flooded-----	0-10	40-60	26-49	6.1-7.3	0-1	0	0.0-0.5	0-2
	10-22	40-60	20-36	7.4-8.4	0-2	0	0.0-0.5	0-2
	22-40	40-60	19-36	7.4-8.4	0-2	0	0.0-0.5	0-2
	40-50	25-45	8.0-34	7.4-8.4	0-2	0	0.0-0.5	0-2
	50	---	---	7.9-8.4	5-14	0	0.0-0.5	0
Clear Lake silty clay loam, overwash-----	0-0.5	35-40	23-32	6.6-8.4	0-1	0	0.0-0.5	0-2
	0.5-7	40-60	26-49	7.4-8.4	0-2	0	0.0-0.5	0-2
	7-19	40-60	20-36	7.9-9.0	0-2	0	0.0-0.5	0-2
	19-29	40-60	19-36	7.9-9.0	0-2	0	0.0-0.5	0-2
	29-40	35-60	11-29	7.9-9.0	0-2	0	0.0-0.5	0-2
	40-55	35-60	11-29	7.9-9.0	0-2	0	0.0-0.5	0-2
	55-80	35-60	11-29	7.9-9.0	0-2	0	0.0-0.5	0-2
221yu:								
Sites loam-----	0-6	15-27	10-30	5.6-6.5	0	0	0	0
	6-16	27-35	---	5.1-6.0	0	0	0	0
	16-51	35-60	---	5.1-6.0	0	0	0	0
	51-61	27-35	---	4.5-6.0	0	0	0	0
	61	---	---	---	---	---	---	---
222yu:								
Sites loam-----	0-6	15-27	10-30	5.6-6.5	0	0	0	0
	6-16	27-35	---	5.1-6.0	0	0	0	0
	16-51	35-60	---	5.1-6.0	0	0	0	0
	51-61	27-35	---	4.5-6.0	0	0	0	0
	61	---	---	---	---	---	---	---
225yu:								
Sites gravelly loam, bedrock substratum-----	0-5	15-27	10-30	5.6-6.5	0	0	0	0
	5-53	30-40	---	4.5-6.0	0	0	0	0
	53	---	---	---	---	---	---	---
226yu:								
Sites gravelly loam, bedrock substratum-----	0-5	15-27	10-30	5.6-6.5	0	0	0	0
	5-53	30-40	---	4.5-6.0	0	0	0	0
	53	---	---	---	---	---	---	---
227yu:								
Sites gravelly loam, bedrock substratum-----	0-5	15-27	10-30	5.6-6.5	0	0	0	0
	5-53	30-40	---	4.5-6.0	0	0	0	0
	53	---	---	---	---	---	---	---

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m		
242yu:									
Surnuf loam-----	0-12	18-27	5.0-15	5.6-6.5	0	0	0	0	
	12-77	35-60	5.0-25	5.1-6.0	0	0	0	0	
243yu:									
Surnuf loam-----	0-12	18-27	5.0-15	5.6-6.5	0	0	0	0	
	12-77	35-60	5.0-25	5.1-6.0	0	0	0	0	
244yu:									
Surnuf loam-----	0-12	18-27	5.0-15	5.6-6.5	0	0	0	0	
	12-77	35-60	5.0-25	5.1-6.0	0	0	0	0	
245:									
Surnuf loam-----	0-12	18-27	5.0-15	5.6-6.5	0	0	0	0	
	12-77	35-60	5.0-25	5.1-6.0	0	0	0	0	
248yu:									
Trainer loam-----	0-9	18-27	10-20	6.6-7.8	0	0	0	0	
	9-36	18-27	10-15	7.9-8.4	0	0	0	0	
	36-66	10-18	5.0-10	7.9-8.4	0	0	0	0	
250:									
Llanoseco, occasionally flooded-----	0-8	27-35	25-35	5.6-6.5	0	0	0.0-2.0	0-1	
	8-18	35-40	25-35	6.1-7.3	0	0	0.0-2.0	0-1	
	18-28	40-50	30-40	6.6-7.8	0	0	0.0-2.0	0-1	
	28-41	40-50	30-40	6.6-7.8	0	0	0.0-2.0	0-1	
	41-57	40-60	30-40	7.4-9.0	0	0	0.0-2.0	0-1	
	57-71	40-60	30-40	7.4-9.0	0	0	0.0-2.0	0-1	
	71-83	40-60	30-35	7.9-9.0	0-2	0	0.0-2.0	0-1	
	83-89	40-50	30-35	7.9-9.0	0-2	0	0.0-2.0	0-1	
	89-93	---	20-25	---	0-49	0	0.0-2.0	0-1	
252:									
Whitecabin silty clay, occasionally flooded	0-5	40-55	26-42	5.6-7.3	0-1	0	0.0-2.0	0-2	
	5-13	45-55	13-36	6.1-9.0	0-1	0	0.0-0.5	0-2	
	13-26	45-55	13-37	6.1-9.0	0-1	0	0.0-0.5	0-2	
	26-35	45-55	13-37	6.1-9.0	0-1	0	0.0-0.5	0-2	
	35-45	35-55	11-35	7.9-9.0	0-1	0	0.0-0.5	0-10	
	45-53	35-55	11-33	7.9-9.0	0-1	0	0.0-0.5	0-10	
	53-63	---	---	---	0-5	0	0.0-0.5	0-2	
	63-72	---	---	---	0-5	0	0.0-0.5	0-2	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m		
252:									
Ord ferry silty clay, occasionally flooded---	0-3	40-50	26-39	6.1-7.3	0-1	0	0.0-2.0	0-2	
	3-6	40-60	26-46	6.1-7.3	0-1	0	0.0-0.5	0-2	
	6-13	40-60	12-37	6.6-7.8	0-1	0	0.0-0.5	0-2	
	13-25	40-60	12-37	7.4-8.4	0-1	0	0.0-0.5	0-2	
	25-29	35-50	11-33	7.9-9.0	0-1	0	0.0-0.5	0-10	
	29-33	---	---	---	0-5	0	0.0-0.5	0-2	
	33-40	---	---	---	0-5	0	0.0-0.5	0-2	
252yu:									
Woodleaf gravelly loam-----	0-9	18-27	10-20	5.6-6.5	0	0	0	0	
	9-28	35-60	15-35	5.6-6.5	0	0	0	0	
	28	---	---	---	---	---	---	---	
253yu:									
Woodleaf gravelly loam-----	0-9	18-27	10-20	5.6-6.5	0	0	0	0	
	9-28	35-60	15-35	5.6-6.5	0	0	0	0	
	28	---	---	---	---	---	---	---	
255:									
Whitecabin silty clay loam, occasionally flooded-----	0-8	27-40	26-42	5.6-7.3	0-1	0	0.0-2.0	0-1	
	8-20	45-55	13-36	6.1-9.0	0-1	0	0.0-0.5	1-2	
	20-44	45-55	13-37	6.1-9.0	0-1	0	0.0-0.5	1-10	
	44-60	---	---	---	0-5	0	0.0-0.5	0-2	
Ord ferry silty clay, occasionally flooded---	0-3	40-50	26-39	6.1-7.3	0-1	0	0.0-2.0	0-2	
	3-6	40-60	26-46	6.1-7.3	0-1	0	0.0-0.5	0-2	
	6-13	40-60	12-37	6.6-7.8	0-1	0	0.0-0.5	0-2	
	13-25	40-60	12-37	7.4-8.4	0-1	0	0.0-0.5	0-2	
	25-29	35-50	11-33	7.9-9.0	0-1	0	0.0-0.5	0-10	
	29-33	---	---	---	0-5	0	0.0-0.5	0-2	
	33-40	---	---	---	0-5	0	0.0-0.5	0-2	
256:									
Whitecabin silt loam, occasionally flooded--	0-6	18-27	26-42	5.6-7.3	0-1	0	0.0-2.0	0-2	
	6-13	45-55	13-36	6.1-9.0	0-1	0	0.0-0.5	0-2	
	13-27	45-55	13-37	6.1-9.0	0-1	0	0.0-0.5	0-2	
	27-42	45-55	11-35	7.9-9.0	0-1	0	0.0-0.5	0-10	
	42-54	35-40	11-33	7.9-9.0	0-1	0	0.0-0.5	0-10	
	54-62	---	---	7.9-9.0	0-5	0	0.0-0.5	0-2	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay Pct	Cation- exchange capacity meq/100g	Soil reaction pH	Calcium carbonate Pct	Gypsum Pct	Salinity dS/m	Sodium adsorption ratio
	In	Pct							
257:									
Llanoseco, frequently flooded-----	0-8	27-35	25-35	5.6-6.5	0	0	0.0-2.0	0-1	
	8-18	35-40	25-35	6.1-7.3	0	0	0.0-2.0	0-1	
	18-28	40-50	30-40	6.6-7.8	0	0	0.0-2.0	0-1	
	28-41	40-50	30-40	6.6-7.8	0	0	0.0-2.0	0-1	
	41-57	40-60	30-40	7.4-9.0	0	0	0.0-2.0	0-1	
	57-71	40-60	30-40	7.4-9.0	0	0	0.0-2.0	0-1	
	71-83	40-60	30-35	7.9-9.0	0-2	0	0.0-2.0	0-1	
	83-89	40-50	30-35	7.9-9.0	0-2	0	0.0-2.0	0-1	
	89-93	---	20-25	---	0-49	0	0.0-2.0	0-1	
258:									
Codora, occasionally flooded-----	0-6	27-35	22-29	6.1-7.8	0	0	0.0-0.5	0	
	6-11	27-35	22-29	6.1-7.8	0	0	0.0-0.5	0	
	11-22	35-40	27-32	6.6-7.8	0	0	0.0-0.5	0	
	22-38	35-40	27-31	6.6-7.8	0	0	0.0-0.5	0	
	38-60	27-45	21-34	7.8-8.4	0-2	0	0.0-0.5	0	
260:									
Ordferry silty clay, occasionally flooded---	0-3	40-50	26-39	6.1-7.3	0-1	0	0.0-2.0	0-2	
	3-6	40-60	26-46	6.1-7.3	0-1	0	0.0-0.5	0-2	
	6-13	40-60	12-37	6.6-7.8	0-1	0	0.0-0.5	0-2	
	13-25	40-60	12-37	7.4-8.4	0-1	0	0.0-0.5	0-2	
	25-29	35-50	11-33	7.9-9.0	0-1	0	0.0-0.5	0-10	
	29-33	---	---	---	0-5	0	0.0-0.5	0-2	
	33-40	---	---	---	0-5	0	0.0-0.5	0-2	
280:									
Columbia taxadjunct very fine sandy loam---	0-8	5-15	4.6-14	6.6-7.8	0	0	0.0-0.5	0	
	8-10	5-15	4.6-14	6.6-7.8	0	0	0.0-0.5	0	
	10-19	5-15	4.6-14	6.6-7.8	0	0	0.0-0.5	0	
	19-30	5-15	4.6-14	6.6-7.8	0	0	0.0-0.5	0	
	30-40	5-15	4.6-22	6.6-7.8	0	0	0.0-0.5	0	
	40-60	5-15	4.6-22	6.6-7.8	0	0	0.0-0.5	0	
290:									
Perkins gravelly loam-----	0-8	13-26	6.0-20	6.6-7.8	0	0	0.0-0.5	0	
	8-24	20-35	11-22	6.6-7.8	0	0	0.0-0.5	0	
	24-38	17-35	8.0-17	6.6-7.8	0	0	0.0-0.5	0	
	38-48	12-20	4.0-12	6.6-7.8	0	0	0.0-0.5	0	
	48-73	10-20	2.0-7.0	6.6-7.8	0	0	0.0-0.5	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay Pct	Cation- exchange capacity meq/100g	Soil reaction pH	Calcium carbonate Pct	Gypsum Pct	Salinity ds/m	Sodium adsorption ratio
	In	Pct							
300:									
Redsluff gravelly loam-----	0-2	16-24	20-30	6.1-7.8	0	0	0.0-0.5	0	
	2-5	20-35	15-25	6.1-7.8	0	0	0.0-0.5	0	
	5-12	20-35	15-25	6.1-7.8	0	0	0.0-0.5	0	
	12-21	20-35	15-25	6.1-7.8	0	0	0.0-0.5	0	
	21-29	20-35	15-25	6.1-7.8	0	0	0.0-0.5	0	
	29-37	10-20	15-25	6.6-7.8	0	0	0.0-0.5	0	
	37-42	10-20	15-25	6.6-7.8	0	0	0.0-0.5	0	
	42-80	1-8	5.0-10	6.6-8.4	0	0	0.0-0.5	0	
301:									
Wafap gravelly loam-----	0-1	16-26	20-35	6.4-7.0	0	0	0	0	
	1-5	22-35	20-30	6.5-7.2	0	0	0	0	
	5-13	30-45	20-30	6.6-8.0	0	0	0.0-0.5	0	
	13-32	30-45	20-30	6.6-8.0	0	0	0.0-0.5	0	
	32-39	30-45	20-30	6.6-8.0	0	0	0.0-0.5	0	
	39-46	20-40	20-30	6.6-8.4	0	0	0.0-0.5	0	
	46	---	---	---	0	0	0	0	
Hamslough clay-----	0-3	40-60	40-50	6.6-7.8	0	0	0.0-0.5	0	
	3-14	40-60	40-50	6.6-7.8	0	0	0.0-0.5	0	
	14-19	40-60	40-50	7.4-8.4	0-5	0	0.0-0.5	0	
	19-27	30-60	30-50	7.9-8.5	0-15	0	0.0-0.5	0	
	27	---	---	---	0	0	0	0	
302:									
Redtough loam-----	0-1	15-22	15-25	5.6-7.0	0	0	0	0	
	1-7	18-27	15-25	6.1-7.0	0	0	0	0	
	7-13	18-27	15-25	6.1-7.0	0	0	0	0	
	13	---	---	---	0	0	0	0	
Redswale cobbly loam-----	0-1	15-22	18-25	5.6-7.0	0	0	0	0	
	1-7	18-27	18-25	6.1-7.0	0	0	0	0	
	7	---	---	---	0	0	0	0	
303:									
Munjar gravelly loam-----	0-2	20-24	17-21	6.1-7.3	0	0	0	0	
	2-5	23-24	19-20	6.1-7.3	0	0	0	0	
	5-9	24-35	19-27	6.6-7.8	0	0	0.0-0.5	0	
	9-16	24-35	19-27	6.6-7.8	0	0	0.0-0.5	0	
	16-22	24-35	19-27	6.6-7.8	0	0	0.0-0.5	0	
	22-31	35-40	23-30	6.6-7.8	0	0	0.0-0.5	0	
	31-46	27-35	---	6.6-7.8	0	0	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m		
303:									
Tuscan taxadjunct gravelly clay loam-----	0-2	18-30	16-25	5.6-7.3	0	0	0	0	
	2-5	25-46	20-35	6.1-8.4	0	0	0.0-0.5	0	
	5-13	35-46	27-35	6.6-8.4	0	0	0.0-0.5	0	
	13-23	35-46	27-35	6.6-8.4	0	0	0.0-0.5	0	
	23-29	35-46	23-34	6.6-8.4	0	0	0.0-0.5	0	
	29	---	---	---	0	0	0	0	
Galt clay-----	0-3	40-60	26-46	6.1-7.8	0	0	0.0-0.5	0	
	3-13	40-60	26-46	6.1-7.8	0	0	0.0-0.5	0	
	13-29	40-60	15-34	6.6-7.8	0	0	0.0-0.5	0	
	29-32	37-60	14-34	6.6-8.4	0-1	0	0.0-0.5	0	
	32-39	---	---	---	0-1	0	0.0-0.5	0	
304:									
Redtough loam-----	0-1	15-22	15-25	5.6-7.0	0	0	0	0	
	1-7	18-27	15-25	6.1-7.0	0	0	0	0	
	7-13	18-27	15-25	6.1-7.0	0	0	0	0	
	13	---	---	---	0	0	0	0	
305:									
Redtough gravelly loam-----	0-2	15-22	15-25	5.6-7.0	0	0	0	0	
	2-5	18-27	15-25	6.1-7.0	0	0	0	0	
	5-8	18-27	15-25	6.1-7.0	0	0	0	0	
	8-15	18-30	15-25	6.1-7.0	0	0	0	0	
	15	---	---	---	0	0	0	0	
Redswale loam-----	0-1	15-22	18-25	5.6-7.0	0	0	0	0	
	1-5	18-27	18-25	6.1-7.0	0	0	0	0	
	5	---	---	---	0	0	0	0	
Anita, gravelly duripan-----	0-3	40-60	40-50	6.3-8.0	0	0	0.0-0.5	0	
	3-8	40-60	40-50	6.3-8.0	0	0	0.0-0.5	0	
	8-15	40-60	40-50	6.3-8.0	0	0	0.0-0.5	0	
	15	---	---	---	0-1	0	0	0	
306:									
Duric Xerarents, fill-----	0-8	18-27	9.5-20	6.0-7.0	0	0	0	0	
	8-14	18-35	9.5-25	7.0-8.0	0	0	0.0-0.5	0	
	14-20	18-35	9.5-25	7.0-8.0	0	0	0.0-0.5	0	
	20-36	10-27	5.7-20	5.5-8.0	0	0	0.0-0.5	0	
	36-40	40-55	19-36	7.0-8.0	0	0	0.0-0.5	0	
	40	---	---	---	---	0	---	---	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
306:								
Duric Xerarents, cut-----	0-13	10-30	5.7-21	6.0-7.0	0	0	0	0
	13-15	12-50	6.6-33	6.5-8.0	0	0	0	0
	15	---	---	---	---	0	---	---
307:								
Duric Xerarents clay loam, leveled-----	0-2	18-40	9.5-28	5.1-7.0	0	0	0	0
	2-12	30-55	15-36	7.0-8.0	0	0	0.0-0.5	0
	12	---	---	---	---	0	---	---
310:								
Kimball loam-----	0-2	10-25	5.4-14	6.1-7.3	0	0	0	0
	2-4	10-25	5.4-14	6.1-7.3	0	0	0	0
	4-6	10-25	5.4-13	6.1-7.3	0	0	0	0
	6-10	10-25	5.4-13	6.1-7.3	0	0	0	0
	10-17	24-30	12-16	6.1-7.3	0	0	0	0
	17-34	40-50	20-26	6.6-7.3	0	0	0	0
	34-46	30-40	15-21	6.6-7.3	0	0	0	0
	46-64	27-35	14-18	6.1-7.8	0	0	0.0-0.5	0
317:								
Thompsonflat loam-----	0-2	12-22	6.4-12	5.6-6.5	0	0	0	0
	2-5	18-38	9.3-20	5.6-7.3	0	0	0	0
	5-12	18-38	9.3-20	5.6-7.3	0	0	0	0
	12-19	18-38	9.3-20	5.6-7.3	0	0	0	0
	19-29	18-38	9.3-20	5.6-7.3	0	0	0	0
	29-35	38-55	20-29	5.6-8.4	0	0	0.0-0.5	0
	35-43	5-38	2.6-20	6.6-8.4	0	0	0.0-0.5	0
	43-80	5-38	2.6-20	6.6-8.4	0	0	0.0-0.5	0
318:								
Thompsonflat fine sandy loam-----	0-3	12-22	6.4-12	5.6-6.5	0	0	0	0
	3-7	18-38	9.3-20	5.6-7.3	0	0	0	0
	7-11	18-38	9.3-20	5.6-7.3	0	0	0	0
	11-15	18-38	9.3-20	5.6-7.3	0	0	0	0
	15-22	38-55	20-29	5.6-8.4	0	0	0	0
	22-35	5-38	2.6-20	6.1-8.4	0	0	0	0
	35-45	5-38	2.6-20	6.1-8.4	0	0	0	0
	45-53	5-38	2.6-20	6.1-8.4	0	0	0.0-0.5	0
	53-66	5-38	2.6-20	6.1-8.4	0	0	0.0-0.5	0
	66-80	5-38	2.6-20	6.1-8.4	0	0	0.0-0.5	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
318:								
Oroville gravelly fine sandy loam-----	0-2	15-24	8.0-13	5.6-6.5	0	0	0	0
	2-6	18-25	9.4-13	5.6-7.3	0	0	0	0
	6-13	22-35	11-18	5.6-7.3	0	0	0	0
	13-17	45-52	23-27	5.6-7.3	0	0	0	0
	17-23	45-52	22-27	5.6-7.3	0	0	0	0
	23-31	---	---	---	0	0	0	0
	31-60	---	---	---	0	0	0	0
320:								
Vistarobles sandy loam-----	0-5	16-26	8.6-14	5.1-7.3	0	0	0	0
	5-10	16-26	8.6-14	5.1-7.3	0	0	0	0
	10-14	40-50	21-26	6.1-7.3	0	0	0	0
	14-34	3-10	1.6-5.3	6.6-8.4	0	0	0.0-0.5	0
	34-40	3-15	1.6-7.9	6.6-8.4	0	0	0.0-0.5	0
Redding loam-----	0-4	12-26	6.5-14	5.6-7.3	0	0	0	0
	4-11	12-26	6.3-14	5.6-7.3	0	0	0	0
	11-24	15-26	7.8-14	5.6-7.3	0	0	0	0
	24-35	40-50	21-26	6.1-7.3	0	0	0	0
	35-40	---	---	---	0	0	0	0
321:								
Durixeralfs, fine-loamy, gravelly fine sandy loam-----	0-1	12-15	8.9-13	5.8-6.3	0	0	0	0
	1-5	15-30	11-24	5.8-6.5	0	0	0	0
	5-10	15-30	11-23	5.8-6.5	0	0	0	0
	10-18	15-30	11-23	5.8-6.5	0	0	0	0
	18-24	28-35	19-27	6.0-6.5	0	0	0	0
	24-27	35-50	23-36	6.5-7.0	0	0	0	0
	27	---	---	---	---	0	---	---
Durixeralfs, loamy-skeletal, gravelly fine sandy loam-----	0-1	10-26	7.6-21	5.5-6.0	0	0	0	0
	1-4	18-30	13-24	5.8-6.5	0	0	0	0
	4-9	28-38	19-29	6.0-6.5	0	0	0	0
	9	---	---	---	---	0	---	---
Typic Petraquepts silty clay-----	0-3	38-50	6.4-31	5.1-6.5	0	0	0	0
	3-11	42-55	7.0-31	5.1-6.5	0	0	0	0
	11	---	---	---	---	0	---	---

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
330:								
Wilsoncreek loam, occasionally flooded-----	0-7	13-18	12-16	6.1-7.3	0	0	0	0
	7-14	13-27	11-23	6.1-7.8	0	0	0.0-0.5	0
	14-25	13-27	11-23	6.1-7.8	0	0	0.0-0.5	0
	25-34	18-27	15-23	6.1-7.8	0	0	0.0-0.5	0
	34-44	18-27	15-22	6.6-7.8	0	0	0.0-0.5	0
	44-60	15-27	12-22	6.6-7.8	0	0	0.0-0.5	0
Trainer loam, occasionally flooded-----	0-7	18-27	10-20	6.1-7.3	0	0	0	0
	7-13	18-27	10-20	6.1-7.3	0	0	0	0
	13-26	18-27	10-15	6.1-7.3	0	0	0	0
	26-36	18-27	10-15	6.1-7.3	0	0	0	0
	36-46	10-18	5.0-10	6.1-7.3	0	0	0	0
	46-61	10-18	5.0-10	6.1-7.3	0	0	0	0
331:								
Thompsonflat loam-----	0-2	12-22	6.4-12	5.6-6.5	0	0	0	0
	2-5	18-38	9.3-20	5.6-7.3	0	0	0	0
	5-12	18-38	9.3-20	5.6-7.3	0	0	0	0
	12-19	18-38	9.3-20	5.6-7.3	0	0	0	0
	19-29	18-38	9.3-20	5.6-7.3	0	0	0	0
	29-35	38-55	20-29	5.6-8.4	0	0	0.0-0.5	0
	35-43	5-38	2.6-20	6.6-8.4	0	0	0.0-0.5	0
	43-80	5-38	2.6-20	6.6-8.4	0	0	0.0-0.5	0
335:								
Galt clay loam-----	0-6	30-40	20-32	6.1-7.8	0	0	0.0-0.5	0
	6-20	30-60	20-46	6.6-7.8	0	0	0.0-0.5	0
	20-27	40-60	15-34	6.6-7.8	0	0	0.0-0.5	0
	27-30	40-60	15-34	6.6-7.8	0	0	0.0-0.5	0
	30	---	---	---	0	0	0.0-0.5	0
336:								
Galt clay-----	0-3	40-60	26-46	6.1-7.8	0	0	0.0-0.5	0
	3-13	40-60	26-46	6.1-7.8	0	0	0.0-0.5	0
	13-29	40-60	15-34	6.6-7.8	0	0	0.0-0.5	0
	29-32	37-60	14-34	6.6-8.4	0-2	0	0.0-0.5	0
	32-39	---	---	---	0-2	0	0.0-0.5	0
337:								
Galt clay loam-----	0-6	30-40	20-32	6.1-7.8	0	0	0.0-0.5	0
	6-20	30-60	20-46	6.6-7.8	0	0	0.0-0.5	0
	20-27	40-60	15-34	6.6-7.8	0	0	0.0-0.5	0
	27-30	40-60	15-34	6.6-7.8	0	0	0.0-0.5	0
	30	---	---	---	0	0	0.0-0.5	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay Pct	Cation- exchange capacity meq/100g	Soil reaction pH	Calcium carbonate Pct	Gypsum Pct	Salinity dS/m	Sodium adsorption ratio
	In	Pct							
338:									
Oxyaquic Xerofluvents silt loam-----	0-6	15-20	12-17	5.6-7.4	0	0	0.0-0.5	0	
	6-20	15-20	11-16	6.6-8.4	0	0	0.0-0.5	0	
	20-32	5-10	4.1-8.6	6.6-8.4	0	0	0.0-0.5	0	
	32-36	5-10	4.1-8.6	6.6-8.4	0	0	0.0-0.5	0	
	36-46	5-5	4.1-4.6	6.6-8.4	0	0	0.0-0.5	0	
	46-50	15-20	11-16	6.6-8.4	0	0	0.0-0.5	0	
	50-55	5-10	4.1-8.6	6.6-8.4	0	0	0.0-0.5	0	
	55-60	15-20	11-16	6.6-8.4	0	0	0.0-0.5	0	
339:									
Oxyaquic Xerofluvents sandy loam, frequently flooded-----	0-8	10-17	8.6-15	5.6-7.3	0	0	0	0	
	8-12	5-17	4.1-14	6.6-8.4	0	0	0.0-0.5	0	
	12-16	5-17	4.1-14	6.6-8.4	0	0	0.0-0.5	0	
	16-60	5-17	4.1-14	6.6-8.4	0	0	0.0-0.5	0	
340:									
Rock outcrop, Lovejoy basalt.									
Thermalrocks very gravelly loam-----	0-1	14-18	20-42	4.5-6.5	0	0	0	0	
	1-5	18-28	20-35	4.5-6.0	0	0	0	0	
	5	---	---	---	0	0	0	0	
Campbellhills gravelly loam-----	0-2	15-22	25-35	6.0-6.5	0	0	0	0	
	2-7	18-27	18-25	6.0-6.5	0	0	0	0	
	7-17	25-40	15-20	6.0-6.8	0	0	0	0	
	17-29	25-40	15-20	6.0-6.8	0	0	0	0	
	29-39	25-40	15-20	6.0-6.8	0	0	0	0	
	39-50	25-40	15-20	6.0-6.8	0	0	0	0	
	50	---	---	---	0	0	0	0	
341:									
Elsley loam-----	0-3	15-22	20-30	5.1-6.0	0	0	0	0	
	3-8	18-24	20-30	5.1-6.0	0	0	0	0	
	8-17	19-27	20-25	5.1-6.0	0	0	0	0	
	17-25	19-27	20-25	5.1-6.0	0	0	0	0	
	25-32	25-33	15-25	5.1-6.0	0	0	0	0	
	32-38	25-33	15-25	5.1-6.0	0	0	0	0	
	38	---	---	---	0	0	0	0	
Beatsonhollow gravelly loam-----	0-3	14-22	20-25	5.5-6.5	0	0	0	0	
	3-10	14-22	20-25	5.5-6.5	0	0	0	0	
	10-17	20-28	20-25	5.0-6.0	0	0	0	0	
	17	---	---	---	0	0	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
341:								
Campbellhills gravelly loam-----	0-2	15-22	25-35	6.0-6.5	0	0	0	0
	2-7	18-27	18-25	6.0-6.5	0	0	0	0
	7-17	25-40	15-20	6.0-6.8	0	0	0	0
	17-29	25-40	15-20	6.0-6.8	0	0	0	0
	29-39	25-40	15-20	6.0-6.8	0	0	0	0
	39-50	25-40	15-20	6.0-6.8	0	0	0	0
	50	---	---	---	0	0	0	0
Rock outcrop, Lovejoy basalt.								
342:								
Thermalrocks very gravelly loam-----	0-1	14-18	20-42	4.5-6.5	0	0	0	0
	1-5	18-28	20-35	4.5-6.0	0	0	0	0
	5	---	---	---	0	0	0	0
Beatsonhollow taxadjunct fine sandy loam---	0-1	15-18	14-16	6.0-6.3	0	0	0	0
	1-6	18-27	15-23	5.5-6.5	0	0	0	0
	6-10	18-27	15-23	5.5-6.5	0	0	0	0
	10-15	18-27	15-23	5.5-6.5	0	0	0	0
	15-18	18-27	15-23	5.5-6.5	0	0	0	0
	18	---	---	5.5-6.5	0	0	0	0
Rock outcrop, Lovejoy basalt.								
343:								
Coalcanyon very cobbly loam-----	0-2	14-18	30-45	6.1-7.3	0	0	0	0
	2-11	16-22	25-35	6.1-7.3	0	0	0	0
	11-27	22-35	20-30	5.6-7.3	0	0	0	0
	27-43	22-35	20-30	5.6-7.3	0	0	0	0
	43-65	22-35	20-30	5.6-7.3	0	0	0	0
Coonhollow gravelly loam-----	0-3	16-22	30-45	5.5-7.3	0	0	0	0
	3-11	18-22	25-35	5.6-7.3	0	0	0	0
	11-22	18-38	20-30	6.1-7.3	0	0	0	0
	22-32	18-38	20-30	6.1-7.3	0	0	0	0
	32-45	18-38	20-30	6.1-7.3	0	0	0	0
	45-50	---	---	---	0	0	0	0
	50	---	---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay Pct	Cation- exchange capacity meq/100g	Soil reaction pH	Calcium carbonate Pct	Gypsum Pct	Salinity dS/m	Sodium adsorption ratio
	In	Pct							
344:									
Coalcanyon very cobbly loam-----	0-2	14-18		30-45	6.1-7.3	0	0	0	0
	2-11	16-22		25-35	6.1-7.3	0	0	0	0
	11-27	22-35		20-30	5.6-7.3	0	0	0	0
	27-43	22-35		20-30	5.6-7.3	0	0	0	0
	43-65	22-35		20-30	5.6-7.3	0	0	0	0
Coonhollow gravelly loam-----	0-3	16-22		30-45	5.5-7.3	0	0	0	0
	3-11	18-22		25-35	5.6-7.3	0	0	0	0
	11-22	18-38		20-30	6.1-7.3	0	0	0	0
	22-32	18-38		20-30	6.1-7.3	0	0	0	0
	32-45	18-38		20-30	6.1-7.3	0	0	0	0
	45-50	---		---	---	0	0	0	0
50	---		---	---	0	0	0	0	
Rock outcrop, Lovejoy basalt.									
346:									
Cherotable loam-----	0-2	18-24		25-35	4.5-6.5	0	0	0	0
	2-8	18-35		15-25	5.1-6.5	0	0	0	0
	8-14	18-35		15-25	5.1-6.5	0	0	0	0
	14-21	18-35		15-25	5.1-6.5	0	0	0	0
	21-30	18-35		15-25	5.1-6.5	0	0	0	0
	30-45	35-50		15-20	5.1-6.0	0	0	0	0
	45	---		---	---	0	0	0	0
Elsely loam-----	0-3	15-22		20-30	5.1-6.0	0	0	0	0
	3-8	18-24		20-30	5.1-6.0	0	0	0	0
	8-17	19-27		20-25	5.1-6.0	0	0	0	0
	17-25	19-27		20-25	5.1-6.0	0	0	0	0
	25-32	25-33		15-25	5.1-6.0	0	0	0	0
	32-38	25-33		15-25	5.1-6.0	0	0	0	0
	38	---		---	---	0	0	0	0
347:									
Haplic Palexeralfs loam-----	0-3	15-18		13-16	5.6-6.5	0	0	0	0
	3-9	22-30		18-25	5.6-6.5	0	0	0	0
	9-22	22-30		18-25	5.6-6.5	0	0	0	0
	22-31	25-40		20-31	6.1-6.5	0	0	0	0
	31-45	25-40		20-31	6.1-6.5	0	0	0	0
	45-52	25-40		20-31	6.1-6.5	0	0	0	0
	52-64	40-50		29-38	6.6-7.3	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m		
353:									
Cherokeespring gravelly silt loam-----	0-3	15-20	30-45	6.1-6.5	0	0	0	0	
	3-7	20-30	25-35	5.6-7.3	0	0	0	0	
	7-16	20-30	25-35	5.6-7.3	0	0	0	0	
	16-30	28-35	20-30	5.1-6.5	0	0	0	0	
	30-42	28-35	20-30	5.1-6.5	0	0	0	0	
	42-60	35-42	20-30	5.1-7.3	0	0	0	0	
	60-68	35-42	20-30	5.1-7.3	0	0	0	0	
355:									
Coalcanyon very cobbly loam-----	0-2	14-18	30-45	6.1-7.3	0	0	0	0	
	2-11	16-22	25-35	6.1-7.3	0	0	0	0	
	11-27	22-35	20-30	5.6-7.3	0	0	0	0	
	27-43	22-35	20-30	5.6-7.3	0	0	0	0	
	43-65	22-35	20-30	5.6-7.3	0	0	0	0	
Talus.									
356:									
Coalcanyon very cobbly loam-----	0-2	14-18	30-45	6.1-7.3	0	0	0	0	
	2-11	16-22	25-35	6.1-7.3	0	0	0	0	
	11-27	22-35	20-30	5.6-7.3	0	0	0	0	
	27-43	22-35	20-30	5.6-7.3	0	0	0	0	
	43-65	22-35	20-30	5.6-7.3	0	0	0	0	
Rock outcrop, basalt cliffs.									
Talus.									
Coonhollow gravelly loam-----	0-3	16-22	30-45	5.5-7.3	0	0	0	0	
	3-11	18-22	25-35	5.6-7.3	0	0	0	0	
	11-22	18-38	20-30	6.1-7.3	0	0	0	0	
	22-32	18-38	20-30	6.1-7.3	0	0	0	0	
	32-45	18-38	20-30	6.1-7.3	0	0	0	0	
	45-50	---	---	---	0	0	0	0	
	50	---	---	---	0	0	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
360:								
Typic Xerofluvents, coarse-loamy-----	0-3	6-18	3.6-12	4.0-7.5	0	0	0	0
	3-11	1-32	0.8-19	5.8-7.5	0	0	0	0
	11-20	1-32	0.8-19	6.5-8.0	0	0	0	0
	20-24	1-32	0.8-19	6.5-8.0	0	0	0	0
	24-31	1-32	0.8-19	6.5-8.0	0	0	0	0
	31-45	1-32	0.8-19	6.5-8.0	0	0	0	0
	45-51	1-32	0.8-19	6.5-8.0	0	0	0	0
	51-66	1-32	0.8-19	6.5-8.0	0	0	0	0
	66-84	1-32	0.8-19	6.5-8.0	0	0	0	0
	84-95	1-32	0.8-19	6.5-8.0	0	0	0	0
Typic Xerofluvents, sandy-skeletal-----	0-3	5-18	3.1-12	6.5-7.0	0	0	0	0
	3-9	1-18	0.8-11	6.5-7.0	0	0	0	0
	9-16	1-5	0.8-3.7	6.5-7.0	0	0	0	0
	16-22	1-5	0.8-3.7	6.5-7.0	0	0	0	0
	22-30	1-5	0.8-3.7	6.5-7.0	0	0	0	0
	30-40	1-5	0.8-3.7	6.5-7.0	0	0	0	0
	40-50	1-5	0.8-3.7	6.5-7.0	0	0	0	0
	50-98	1-5	0.8-3.7	6.5-7.0	0	0	0	0
361:								
Typic Xerofluvents, sandy-skeletal-----	0-3	5-18	3.1-12	6.5-7.0	0	0	0	0
	3-9	1-18	0.8-12	6.5-7.0	0	0	0	0
	9-16	1-5	0.8-3.7	6.5-7.0	0	0	0	0
	16-22	1-5	0.8-3.7	6.5-7.0	0	0	0	0
	22-30	1-5	0.8-3.7	6.5-7.0	0	0	0	0
	30-40	1-5	0.8-3.7	6.5-7.0	0	0	0	0
	40-50	1-5	0.8-3.7	6.5-7.0	0	0	0	0
	50-98	1-5	0.8-3.7	6.5-7.0	0	0	0	0
362:								
Ultic Haploxeralfs, sandstone, low elevation, very deep-----	0-2	14-20	12-18	6.1-7.3	0	0	0	0
	2-8	20-35	16-27	5.6-6.5	0	0	0	0
	8-18	20-35	16-27	5.6-6.5	0	0	0	0
	18-28	25-40	19-30	5.6-6.5	0	0	0	0
	28-39	25-40	19-30	5.6-6.5	0	0	0	0
	39-49	25-35	19-26	5.6-6.5	0	0	0	0
	49-56	12-22	9.6-17	5.6-6.5	0	0	0	0
	56-70	12-22	9.6-17	5.6-6.5	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
362:								
Ultic Haploxeralfs, sandstone, low elevation, deep-----	0-3	14-20	12-18	6.1-7.3	0	0	0	0
	3-8	20-30	16-24	5.6-6.5	0	0	0	0
	8-15	20-30	16-24	5.6-6.5	0	0	0	0
	15-24	10-30	8.1-23	5.6-6.5	0	0	0	0
	24-32	10-30	8.1-23	5.6-6.5	0	0	0	0
	32-41	10-30	8.1-23	5.6-6.5	0	0	0	0
	41	---	---	---	0	0	0	0
363:								
Ultic Haploxeralfs, sandstone, low elevation, very deep-----	0-2	14-20	12-18	6.1-7.3	0	0	0	0
	2-8	20-35	16-27	5.6-6.5	0	0	0	0
	8-18	20-35	16-27	5.6-6.5	0	0	0	0
	18-28	25-40	19-30	5.6-6.5	0	0	0	0
	28-39	25-40	19-30	5.6-6.5	0	0	0	0
	39-49	25-35	19-26	5.6-6.5	0	0	0	0
	49-56	12-22	9.6-17	5.6-6.5	0	0	0	0
	56-70	12-22	9.6-17	5.6-6.5	0	0	0	0
Ultic Haploxeralfs, sandstone, low elevation, deep-----	0-3	14-20	12-18	6.1-7.3	0	0	0	0
	3-8	20-30	16-24	5.6-6.5	0	0	0	0
	8-15	20-30	16-24	5.6-6.5	0	0	0	0
	15-24	10-30	8.1-23	5.6-6.5	0	0	0	0
	24-32	10-30	8.1-23	5.6-6.5	0	0	0	0
	32-41	10-30	8.1-23	5.6-6.5	0	0	0	0
	41	---	---	---	0	0	0	0
364:								
Ultic Haploxeralfs, sandstone, low elevation, deep-----	0-3	14-20	12-18	6.1-7.3	0	0	0	0
	3-8	20-30	16-24	5.6-6.5	0	0	0	0
	8-15	20-30	16-24	5.6-6.5	0	0	0	0
	15-24	10-30	8.1-23	5.6-6.5	0	0	0	0
	24-32	10-30	8.1-23	5.6-6.5	0	0	0	0
	32-41	10-30	8.1-23	5.6-6.5	0	0	0	0
	41	---	---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay Cation- exchange capacity meq/100g	Soil reaction pH	Calcium carbonate Pct	Gypsum Pct	Salinity dS/m	Sodium adsorption ratio
	In	Pct						
364: Ultic Haploxeralfs, sandstone, low elevation, very deep-----	0-2	14-20	12-18	6.1-7.3	0	0	0	0
	2-8	20-35	16-27	5.6-6.5	0	0	0	0
	8-18	20-35	16-27	5.6-6.5	0	0	0	0
	18-28	25-40	19-30	5.6-6.5	0	0	0	0
	28-39	25-40	19-30	5.6-6.5	0	0	0	0
	39-49	25-35	19-26	5.6-6.5	0	0	0	0
	49-56	12-22	9.6-17	5.6-6.5	0	0	0	0
	56-70	12-22	9.6-17	5.6-6.5	0	0	0	0
365: Palexerults gravelly loam-----	0-2	16-24	5.0-10	5.6-7.3	0	0	0	0
	2-12	20-35	5.0-10	4.5-6.5	0	0	0	0
	12-20	20-35	---	4.5-6.5	0	0	0	0
	20-29	35-60	---	4.3-5.5	0	0	0	0
	29-46	30-60	---	4.3-5.5	0	0	0	0
	46-65	40-60	---	4.3-5.5	0	0	0	0
	65	---	---	---	0	0	0	0
366: Palexerults gravelly loam-----	0-2	16-24	5.0-10	5.6-7.3	0	0	0	0
	2-12	20-35	5.0-10	4.5-6.5	0	0	0	0
	12-20	20-35	---	4.5-6.5	0	0	0	0
	20-29	35-60	---	4.3-5.5	0	0	0	0
	29-46	30-60	---	4.3-5.5	0	0	0	0
	46-65	40-60	---	4.3-5.5	0	0	0	0
	65	---	---	---	0	0	0	0
370: Palexerults gravelly loam-----	0-2	16-24	5.0-10	5.6-7.3	0	0	0	0
	2-12	20-35	5.0-10	4.5-6.5	0	0	0	0
	12-20	20-35	---	4.5-6.5	0	0	0	0
	20-29	35-60	---	4.3-5.5	0	0	0	0
	29-46	30-60	---	4.3-5.5	0	0	0	0
	46-65	40-60	---	4.3-5.5	0	0	0	0
	65	---	---	---	0	0	0	0
375: Wickscorner loam-----	0-2	15-20	25-30	5.6-6.5	0	0	0	0
	2-8	20-33	15-25	4.5-6.0	0	0	0	0
	8-22	20-33	15-25	4.5-6.0	0	0	0	0
	22-38	28-45	15-25	5.1-7.3	0	0	0	0
	38-59	28-45	15-25	5.1-7.3	0	0	0	0
	59-72	35-55	15-25	5.1-7.3	0	0	0	0
	72-84	35-55	15-25	5.1-7.3	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m		
376:									
Flagcanyon gravelly loam-----	0-3	15-22	25-35	5.1-6.5	0	0	0	0	
	3-9	22-30	15-25	5.1-7.3	0	0	0	0	
	9-14	22-30	15-25	5.1-7.3	0	0	0	0	
	14-30	30-50	12-20	5.6-7.3	0	0	0	0	
	30-53	22-50	12-20	6.6-8.4	0	0	0	0	
	53-65	22-50	12-20	6.6-8.4	0	0	0	0	
Wickscorner loam-----									
	0-2	15-20	25-30	5.6-6.5	0	0	0	0	
	2-8	20-33	15-25	4.5-6.0	0	0	0	0	
	8-22	20-33	15-25	4.5-6.0	0	0	0	0	
	22-38	28-45	15-25	5.1-7.3	0	0	0	0	
	38-59	28-45	15-25	5.1-7.3	0	0	0	0	
	59-72	35-55	15-25	5.1-7.3	0	0	0	0	
	72-84	35-55	15-25	5.1-7.3	0	0	0	0	
377:									
Flagcanyon taxadjunct fine sandy loam-----	0-3	15-18	12-15	5.6-6.0	0	0	0	0	
	3-7	24-32	19-25	5.1-6.5	0	0	0	0	
	7-16	24-32	18-25	5.1-6.5	0	0	0	0	
	16-23	35-50	25-37	5.6-7.3	0	0	0	0	
	23-31	35-50	25-37	5.6-7.3	0	0	0	0	
	31-63	2-5	1.8-4.5	6.1-7.3	0	0	0	0	
Durixeralfs, clayey-skeletal, loam-----									
	0-1	18-25	3.4-17	6.0-6.5	0	0	0	0	
	1-4	24-30	4.3-19	6.0-6.5	0	0	0	0	
	4-9	40-50	6.7-26	7.0-7.3	0	0	0	0	
	9-15	40-50	6.7-25	7.0-7.3	0	0	0	0	
	15-60	5-50	1.1-18	7.0-7.8	0	0	0.0-0.5	0	
Duraquerts gravelly clay-----									
	0-3	40-50	26-39	6.0-6.5	0	0	0	0	
	3-6	40-50	15-29	6.0-6.5	0	0	0	0	
	6-15	45-55	17-27	6.5-8.0	0	0	0.0-0.5	0	
	15-21	45-55	17-23	6.5-8.0	0	0	0.0-0.5	0	
	21-23	50-55	15-20	7.0-8.0	0	0	0.0-0.5	0	
	23-60	5-10	2.0-4.6	7.0-8.0	0	0	0.0-0.5	0	
400:									
Subaco taxadjunct clay-----	0-8	45-55	28-48	7.4-8.4	0	0	0.0-4.0	0-2	
	8-16	50-60	31-52	7.4-9.0	0-2	0	0.0-4.0	2-3	
	16-29	50-60	31-52	7.9-9.0	1-5	0	0.0-4.0	3-7	
	29-35	35-60	6.0-36	8.5-11.0	15-20	0	0.0-4.0	5-10	
	35-42	---	---	7.4-9.0	0-3	0	0.0-4.0	0-10	
	40-60	---	---	---	0-3	0	0.0-4.0	0-10	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
415:								
Ignord fine sandy loam-----	0-4	8-20	7.3-18	7.4-8.4	1-4	0	0.0-0.5	0
	4-14	8-15	7.3-13	7.4-8.4	1-4	0	0.0-0.5	0
	14-25	8-15	7.3-13	7.4-8.4	1-4	0	0.0-0.5	0
	25-32	8-15	7.3-13	7.4-8.4	1-4	0	0.0-0.5	0
	32-53	8-15	6.6-13	7.4-8.4	1-4	0	0.0-0.5	0
	53-58	8-15	6.6-13	7.4-8.4	1-4	0	0.0-0.5	0
	58-77	8-15	6.6-13	7.4-8.4	1-4	0	0.0-0.5	0
416:								
Calcic Haploxerolls sandy loam-----	0-5	15-23	5.0-15	6.8-8.5	0-1	0	4.0-8.0	5-13
	5-17	15-25	5.0-15	7.8-8.5	1-5	0	4.0-8.0	5-13
	17-20	12-27	5.0-15	7.8-8.5	1-5	0	4.0-8.0	5-13
	20-33	12-27	5.0-15	7.8-8.5	1-5	0	4.0-8.0	5-13
	33-44	12-20	5.0-15	8.0-8.6	0-5	0	4.0-8.0	5-13
	44-72	---	---	---	0-5	0	4.0-8.0	5-13
418:								
Almendra loam-----	0-4	15-27	25-30	5.6-7.8	0-1	0	0.0-3.0	0
	4-14	15-27	25-30	5.6-7.8	0-1	0	0.0-0.5	0
	14-29	17-27	20-30	6.1-7.8	0-1	0	0.0-0.5	0
	29-40	17-27	20-30	6.1-7.8	0-1	0	0.0-0.5	0
	40-52	15-27	20-25	6.1-7.8	0-2	0	0.0-0.5	0
	52-74	12-25	15-25	6.1-7.8	0-2	0	0.0-0.5	0
	74-86	12-25	15-25	6.1-7.8	0-2	0	0.0-0.5	0
419:								
Conejo fine sandy loam, overwash-----	0-17	10-20	8.9-17	6.1-7.8	0	0	0	0
	17-35	18-35	16-29	6.1-7.8	0-1	0	0.0-3.0	0-1
	35-45	18-35	15-28	6.1-7.8	0-1	0	0.0-0.5	0-1
	45-56	18-35	15-28	6.1-7.8	0-2	0	0.0-0.5	0-1
	56-62	15-35	12-27	6.6-8.4	0-2	0	0.0-0.5	0-1
	62-70	15-35	12-27	6.6-8.4	0-2	0	0.0-0.5	0-1
	70-72	15-35	12-27	6.6-8.4	0-2	0	0.0-0.5	0-1
420:								
Conejo clay loam-----	0-5	27-35	23-29	6.1-7.8	0-1	0	0.0-3.0	0-1
	5-19	27-35	22-29	6.1-7.8	0-1	0	0.0-0.5	0-1
	19-30	27-35	22-29	6.1-7.8	0-1	0	0.0-0.5	0-1
	30-48	27-35	21-28	6.1-7.8	0-2	0	0.0-0.5	0-1
	48-70	15-35	12-27	6.6-8.4	0-2	0	0.0-0.5	0-1

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
425:								
Vina fine sandy loam-----	0-3	12-20	11-18	6.1-8.4	0-1	0	0.0-0.5	0
	3-11	12-20	11-18	6.1-8.4	0-1	0	0.0-0.5	0
	11-23	10-18	8.9-16	6.1-8.4	0-1	0	0.0-0.5	0
	23-37	10-18	8.9-16	6.1-8.4	0-1	0	0.0-0.5	0
	37-50	1-15	1.0-13	6.6-8.4	0-2	0	0.0-0.5	0
	50-54	1-15	1.0-13	6.6-8.4	0-2	0	0.0-0.5	0
	54-80	1-15	1.0-13	6.6-8.4	0-2	0	0.0-0.5	0
426:								
Vina loam-----	0-4	12-20	11-18	6.1-8.4	0-1	0	0.0-0.5	0
	4-15	5-18	4.9-16	6.1-8.4	0-1	0	0.0-0.5	0
	15-28	5-18	4.8-16	6.1-8.4	0-1	0	0.0-0.5	0
	28-44	5-18	4.8-16	6.6-8.4	0-2	0	0.0-0.5	0
	44-63	5-18	4.6-16	6.6-8.4	0-2	0	0.0-0.5	0
	63-72	5-18	4.3-15	6.6-8.4	0-2	0	0.0-0.5	0
439:								
Oxyaquic Xerofluvents clay-----	0-10	40-60	30-46	5.6-8.4	0	0	0.0-0.5	0
	10-13	40-60	31-46	6.6-8.4	0	0	0.0-0.5	0
	13-21	40-60	31-46	6.6-8.4	0	0	0.0-0.5	0
	21-27	5-15	4.1-12	6.6-8.4	0	0	0.0-0.5	0
	27-32	40-60	26-43	6.6-8.4	0	0	0.0-0.5	0
	32-37	35-40	23-30	6.6-8.4	0	0	0.0-0.5	0
	37-55	60-80	38-58	7.4-8.4	0	0	0.0-0.5	0-1
	55-63	60-80	38-56	7.4-8.4	0	0	0.0-0.5	0-1
	63-65	---	---	---	---	0	0.0-0.5	0-1
	65-80	40-60	26-43	7.4-8.4	0	0	0.0-0.5	0-1
440:								
Oxyaquic Xerofluvents silt loam, frequently flooded-----	0-9	5-27	4.6-22	5.6-8.4	0	0	0.0-0.5	0
	9-18	5-10	4.8-9.1	6.6-8.4	0	0	0.0-0.5	0
	18-25	10-27	8.9-22	6.6-8.4	0	0	0.0-0.5	0
	25-33	5-27	4.1-21	6.6-8.4	0	0	0.0-0.5	0
	33-44	15-30	11-23	6.6-8.4	0	0	0.0-1.0	0
	44-51	15-30	11-23	6.6-8.4	0	0	0.0-1.0	0
	51-60	40-70	26-51	7.4-8.4	0	0	0.0-1.0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay Pct	Cation- exchange capacity meq/100g	Soil reaction pH	Calcium carbonate Pct	Gypsum Pct	Salinity dS/m	Sodium adsorption ratio
	In	Pct							
441:									
Oxyaquic Xerofluvents very fine sandy loam--	0-6	15-20	12-17	5.6-7.4	0	0	0.0-0.5	0	
	6-20	18-27	15-22	6.6-7.4	0	0	0.0-0.5	0	
	20-30	18-27	15-22	6.6-7.4	0	0	0.0-0.5	0	
	30-43	5-15	4.1-12	6.6-7.4	0	0	0.0-0.5	0	
	43-55	18-27	13-21	6.6-7.4	0	0	0.0-0.5	0	
	55-72	5-20	4.1-16	6.6-7.4	0	0	0.0-0.5	0	
	72-75	40-60	26-45	7.4-8.4	0	0	0.0-2.0	0	
442:									
Durixerolls clay loam-----	0-6	27-40	22-33	6.5-7.3	0	0	0	0	
	6-12	27-40	22-32	6.6-8.0	0	0	0.0-0.5	0	
	12-24	25-35	20-27	6.6-8.0	0	0	0.0-0.5	0	
	24-33	17-35	13-27	6.6-8.0	0	0	0.0-0.5	0	
	33	---	---	---	---	0	---	---	
Haploxerolls clay loam-----	0-5	27-35	23-29	6.6-7.8	0	0	0.0-0.5	0	
	5-18	27-35	23-29	6.6-7.8	0	0	0.0-0.5	0	
	18-29	25-35	20-28	6.6-7.8	0	0	0.0-0.5	0	
	29-44	20-35	17-28	6.6-8.0	0	0	0.0-0.5	0	
	44-57	10-35	8.1-27	6.6-8.0	0	0	0.0-0.5	0	
	57	---	---	---	0	0	0.0-0.5	0	
443:									
Durixerolls loam-----	0-4	18-25	15-21	6.0-7.3	0	0	0	0	
	4-10	17-25	14-21	6.6-7.3	0	0	0	0	
	10-17	18-25	15-20	6.6-7.3	0	0	0	0	
	17-23	18-30	15-24	6.6-7.3	0	0	0	0	
	23-26	18-30	14-24	6.6-7.3	0	0	0	0	
	26	---	---	---	---	0	---	---	
Haploxerolls loam-----	0-5	20-27	17-23	6.0-7.3	0	0	0	0	
	5-16	20-27	17-23	6.6-7.3	0	0	0	0	
	16-27	18-27	15-23	6.6-7.3	0	0	0	0	
	27-40	18-27	15-23	6.6-8.0	0	0	0.0-0.5	0	
	40-48	9-27	8.1-23	6.6-8.0	0	0	0.0-0.5	0	
	48-52	9-27	7.4-22	6.6-8.0	0	0	0.0-0.5	0	
	52	---	---	---	0	0	0.0-0.5	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
445:								
Chico loam-----	0-5	20-27	17-24	6.1-7.8	0	0	0.0-0.5	0
	5-10	25-35	20-29	6.4-7.8	0	0	0.0-0.5	0
	10-21	25-35	20-29	6.4-7.8	0	0	0.0-0.5	0
	21-32	25-35	20-28	6.4-7.8	0	0	0.0-0.5	0
	32-50	18-35	14-27	6.6-7.8	0-1	0	0.0-0.5	0
	50-70	18-35	14-27	6.6-7.8	0-1	0	0.0-0.5	0
	70-80	18-35	14-27	6.6-7.8	0-1	0	0.0-0.5	0
447:								
Charger fine sandy loam-----	0-3	8-17	20-30	5.6-7.3	0	0	0	0
	3-7	8-17	20-30	6.1-8.4	0	0	0.0-0.5	0
	7-15	8-17	20-30	6.1-8.4	0	0	0.0-0.5	0
	15-32	8-17	15-25	6.6-8.4	0	0	0.0-0.5	0
	32-42	8-17	15-25	6.6-8.4	0	0	0.0-0.5	0
	42-53	8-17	15-25	6.6-8.4	0	0	0.0-0.5	0
	53-63	8-17	15-25	6.6-8.4	0	0	0.0-0.5	0
	63-80	1-10	5.0-20	6.6-8.4	0	0	0.0-0.5	0
448:								
Haploxerolls clay loam-----	0-5	27-35	23-29	6.0-7.3	0	0	0	0
	5-10	27-35	23-29	6.0-7.3	0	0	0	0
	10-24	27-35	22-28	6.6-7.8	0-2	0	0.0-0.5	0
	24-39	27-35	22-28	6.6-7.8	0-2	0	0.0-0.5	0
	39-66	18-35	14-27	6.6-7.8	0-2	0	0.0-0.5	0
449:								
Haploxerolls loam-----	0-4	18-27	16-23	5.5-7.3	0	0	0	0
	4-10	18-27	16-23	5.5-7.3	0	0	0	0
	10-24	18-27	15-23	6.6-7.8	0	0	0.0-0.5	0
	24-36	18-27	15-23	6.6-7.8	0	0	0.0-0.5	0
	36-52	18-27	15-22	6.6-7.8	0	0	0.0-0.5	0
	52-60	10-27	8.1-22	6.6-7.8	0	0	0.0-0.5	0
500:								
Lofgren clay-----	0-5	60-70	36-50	5.1-6.5	0	0	0.0-1.0	0-1
	5-12	60-70	36-52	6.1-8.4	0	0	0.0-0.5	0-1
	12-29	60-70	29-53	6.1-8.4	0	0	0.0-0.5	0-1
	29-38	60-70	29-51	7.4-8.4	0-2	0	0.0-0.5	0-1
	38-44	60-70	29-47	7.9-8.4	0-2	0	0.0-0.5	0-1
	44-47	27-40	8.5-41	7.9-8.5	5-14	0	0.0-0.5	0-1
	47-62	---	---	---	5-14	0	0.0-0.5	0-1
	62-82	---	---	---	1-5	0	0.0-0.5	0-1

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay Cation- exchange capacity	Soil reaction pH	Calcium carbonate Pct	Gypsum Pct	Salinity dS/m	Sodium adsorption ratio
	In	Pct						
500:								
Blavo clay-----	0-5	60-70	36-60	5.6-7.3	0	0	0.0-1.0	0-1
	5-16	60-70	36-52	7.4-8.4	0	0	0.0-0.5	0-1
	16-24	60-70	29-53	7.4-8.4	0	0	0.0-0.5	0-1
	24-30	60-70	29-51	7.4-8.4	0-2	0	0.0-0.5	0-1
	30-36	35-60	11-41	7.9-9.0	5-11	0	0.0-0.5	0-1
	36-60	---	---	---	5-11	0	0.0-0.5	0-1
501:								
Lofgren clay, occasionally flooded-----	0-5	60-70	36-60	5.1-6.5	0	0	0.0-1.0	0-1
	5-12	60-70	36-52	6.1-8.4	0	0	0.0-0.5	0-1
	12-22	60-70	29-53	6.1-8.4	0	0	0.0-0.5	0-1
	22-30	60-70	29-51	7.4-8.4	0-2	0	0.0-0.5	0-1
	30-41	60-70	29-47	7.9-8.4	0-2	0	0.0-0.5	0-1
	41-45	27-40	8.5-41	7.9-8.5	5-14	0	0.0-0.5	0-1
	45-60	---	---	---	5-14	0	0.0-0.5	0-1
Blavo clay, occasionally flooded-----	0-6	60-70	36-60	5.6-7.3	0	0	0.0-1.0	0-1
	6-10	60-70	36-52	7.4-8.4	0	0	0.0-0.5	0-1
	10-22	60-70	29-53	7.4-8.4	0	0	0.0-0.5	0-1
	22-29	60-70	29-51	7.4-8.4	0-2	0	0.0-0.5	0-1
	29-36	35-60	11-41	7.9-9.0	5-11	0	0.0-0.5	0-1
	36-42	---	---	---	5-11	0	0.0-0.5	0-1
502:								
Blavo silt loam, overwash, occasionally flooded-----	0-7	18-27	13-40	5.6-7.3	0	0	0.0-1.0	0-1
	7-14	60-70	36-52	6.6-8.4	0	0	0.0-0.5	0-1
	14-22	60-70	29-50	7.4-8.4	0	0	0.0-0.5	0-1
	22-29	60-70	29-53	7.4-8.4	0	0	0.0-0.5	0-1
	29-36	60-70	17-41	7.9-9.0	0-2	0	0.0-0.5	0-1
	36-50	---	---	---	0-2	0	0.0-0.5	0
519:								
Edjobe silty clay-----	0-8	40-55	26-48	6.1-7.8	0-2	0	0.0-0.5	0
	8-25	40-55	20-39	6.6-8.4	0-2	0	0.0-0.5	0
	25-32	40-50	15-31	7.4-8.4	1-15	0	0.0-0.5	0
	32-48	27-40	8.5-22	7.4-8.4	1-15	0	0.0-0.5	0
	48-60	25-40	8.0-20	7.4-8.4	1-15	0	0.0-0.5	0
	60-69	25-35	8.0-15	7.4-8.4	1-15	0	0.0-0.5	0
	69-75	---	---	7.9-8.4	1-15	0	0.0-0.5	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
520:								
Esquon clay-----	0-5	40-60	---	4.5-7.3	0-1	0	0.0-0.5	0
	5-11	40-60	20-36	6.1-8.4	0-1	0	0.0-0.5	0
	11-22	40-60	19-36	6.6-8.4	0-1	0	0.0-0.5	0
	22-35	40-60	19-36	6.6-8.4	0-1	0	0.0-0.5	0
	35-46	40-60	12-31	7.4-8.4	0-2	0	0.0-0.5	0
	46-50	40-60	12-33	7.4-8.4	0-2	0	0.0-0.5	0
	50-56	25-60	8.0-34	7.4-8.4	0-2	0	0.0-0.5	0
	56-67	---	---	7.9-8.4	5-14	0	0.0-0.5	0
Neerdoobe clay-----	0-5	40-60	26-49	5.6-7.3	0-1	0	0.0-0.5	0
	5-15	40-60	20-44	7.4-8.4	0-1	0	0.0-0.5	0
	15-23	40-60	20-44	7.4-8.4	0-1	0	0.0-0.5	0
	23-28	40-60	20-43	7.4-8.4	0-2	0	0.0-0.5	0
	28-33	35-60	11-41	7.9-9.0	5-14	0	0.0-0.5	0
	33-38	18-27	6.0-36	7.9-9.0	5-14	0	0.0-0.5	0
	38-56	18-27	3.4-38	7.9-9.0	5-14	0	0.0-0.5	0
521:								
Neerdoobe silt loam, overwash-----	0-7	2-25	1.9-21	5.6-7.3	0	0	0.0-0.5	0
	7-16	2-25	1.5-17	7.4-8.4	0	0	0.0-0.5	0
	16-20	2-10	0.9-6.2	7.4-8.4	0	0	0.0-0.5	0
	20-33	40-60	26-45	7.4-8.4	0-1	0	0.0-0.5	0
	33-47	40-60	20-43	7.4-8.4	0-2	0	0.0-0.5	0
	47-52	---	---	7.9-9.0	5-14	0	0.0-0.5	0
	52-60	---	---	7.9-9.0	5-14	0	0.0-0.5	0
522:								
Clear Lake silty clay loam, overwash-----	0-6	35-40	23-32	6.6-8.4	0-1	0	0.0-0.5	0-2
	6-12	40-60	26-49	7.4-8.4	0-2	0	0.0-0.5	0-2
	12-35	40-60	20-36	7.9-9.0	0-2	0	0.0-0.5	0-2
	35-50	40-60	19-36	7.9-9.0	0-2	0	0.0-0.5	0-2
	50-60	35-60	11-29	7.9-9.0	0-2	0	0.0-0.5	0-2
	60-70	35-60	11-29	7.9-9.0	0-2	0	0.0-0.5	0-2
	70-72	35-60	11-29	7.9-9.0	0-2	0	0.0-0.5	0-2
523:								
Esquon silty clay loam, overwash-----	0-10	35-40	23-32	6.1-7.9	0-1	0	0.0-0.5	0
	10-18	40-60	26-49	7.4-8.4	0-2	0	0.0-0.5	0
	18-46	40-60	12-29	7.4-8.4	0-2	0	0.0-0.5	0
	46-60	---	---	---	5-14	0	0.0-0.5	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
525:								
Govstanford loam-----	0-3	15-27	11-23	6.1-7.8	0	0	0.0-0.5	0
	3-11	15-27	11-23	6.1-7.8	0	0	0.0-0.5	0
	11-18	3-18	1.3-12	6.6-8.4	0	0	0.0-0.5	0
	18-25	3-18	1.3-12	6.6-8.4	0	0	0.0-0.5	0
	25-34	5-18	2.0-10	6.6-8.4	0	0	0.0-0.5	0
	34-42	40-60	26-52	6.6-8.4	0	0	0.0-0.5	0
	42-61	40-60	20-42	6.6-8.4	0	0	0.0-0.5	0
	61-72	35-55	13-34	6.6-8.4	0	0	0.0-0.5	0
526:								
Govstanford loam, occasionally flooded-----	0-3	15-27	11-23	6.1-7.8	0	0	0.0-0.5	0
	3-11	15-27	11-23	6.1-7.8	0	0	0.0-0.5	0
	11-18	3-18	1.3-12	6.6-8.4	0	0	0.0-0.5	0
	18-25	3-18	1.3-12	6.6-8.4	0	0	0.0-0.5	0
	25-34	5-18	2.0-10	6.6-8.4	0	0	0.0-0.5	0
	34-42	40-60	26-52	6.6-8.4	0	0	0.0-0.5	0
	42-61	40-60	20-42	6.6-8.4	0	0	0.0-0.5	0
	61-72	35-55	13-34	6.6-8.4	0	0	0.0-0.5	0
528:								
Neerdobe clay loam-----	0-10	35-40	23-45	5.6-7.3	0-1	0	0.0-0.5	0
	10-18	40-60	20-44	7.4-8.4	0-1	0	0.0-0.5	0
	18-25	40-60	12-43	7.4-8.4	0-1	0	0.0-0.5	0
	25	---	---	---	0-1	0	0.0-0.5	0
550:								
Dunstone loam, dry-----	0-2	12-20	16-29	5.0-6.5	0	0	0	0
	2-7	16-22	9.0-18	6.0-6.6	0	0	0	0
	7-10	16-24	11-19	6.0-6.7	0	0	0	0
	10-16	23-32	11-18	5.8-6.8	0	0	0	0
	16	---	0.0-0.0	---	0	0	0	0
Loafercreek silt loam, dry-----	0-2	14-22	16-33	5.5-7.0	0	0	0	0
	2-4	15-24	8.0-22	5.5-7.0	0	0	0	0
	4-11	15-24	8.0-22	5.8-6.7	0	0	0	0
	11-20	18-30	8.0-21	6.0-6.8	0	0	0	0
	20-29	18-30	8.0-25	6.0-7.0	0	0	0	0
	29	---	0.0-0.0	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
551:								
Dunstone loam, dry-----	0-2	12-20	16-29	5.0-6.5	0	0	0	0
	2-7	16-22	9.0-18	6.0-6.6	0	0	0	0
	7-10	16-24	11-19	6.0-6.7	0	0	0	0
	10-16	23-32	11-18	5.8-6.8	0	0	0	0
	16	---	0.0-0.0	---	0	0	0	0
Lomarica loam-----	0-1	15-20	14-18	6.0-6.6	0	0	0	0
	1-5	18-23	15-20	6.1-6.6	0	0	0	0
	5-9	29-38	23-30	6.1-6.5	0	0	0	0
	9-12	32-44	25-35	6.0-6.5	0	0	0	0
	12-25	35-45	27-35	6.1-7.3	0	0	0	0
	25-32	45-55	34-41	6.6-7.3	0	0	0	0
	32	---	---	---	0	0	0	0
Argonaut taxadjunct loam-----	0-2	18-30	9.8-16	5.9-7.0	0	0	0	0
	2-8	28-40	15-22	6.0-6.7	0	0	0	0
	8-14	40-50	21-27	6.0-6.9	0	0	0	0
	14-20	40-50	21-27	6.0-6.9	0	0	0	0
	20-26	36-45	18-24	6.1-7.0	0	0	0	0
	26-30	36-45	18-24	6.1-7.0	0	0	0	0
	30	---	---	---	0	0	0	0
552:								
Dunstone gravelly loam-----	0-4	12-20	16-29	6.0-6.5	0	0	0	0
	4-6	14-22	9.0-18	6.0-6.5	0	0	0	0
	6-10	15-27	11-18	5.8-7.0	0	0	0	0
	10-15	18-35	11-18	5.8-7.0	0	0	0	0
	15-37	---	---	---	0	0	0	0
	37	---	---	---	0	0	0	0
Loafercreek gravelly loam-----	0-0.5	---	---	---	0	0	0	0
	0.5-2	14-22	20-25	6.0-6.3	0	0	0	0
	2-6	15-24	15-25	6.0-6.3	0	0	0	0
	6-12	18-30	15-25	6.0-6.5	0	0	0	0
	12-23	20-30	20-25	6.0-6.5	0	0	0	0
	23-31	20-30	20-30	6.0-6.5	0	0	0	0
	31-42	---	0.0-0.0	---	0	0	0	0
	42	---	0.0-0.0	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay Pct	Cation- exchange capacity meq/100g	Soil reaction pH	Calcium carbonate Pct	Gypsum Pct	Salinity dS/m	Sodium adsorption ratio
	In	Pct							
553:									
Dunstone gravelly loam-----	0-4	12-20	16-29	6.0-6.5	0	0	0	0	
	4-6	14-22	9.0-18	6.0-6.5	0	0	0	0	
	6-10	15-27	11-18	5.8-7.0	0	0	0	0	
	10-15	18-35	11-18	5.8-7.0	0	0	0	0	
	15-37	---	---	---	0	0	0	0	
	37	---	---	---	0	0	0	0	
Loafercreek gravelly loam-----	0-0.5	---	---	---	0	0	0	0	
	0.5-2	14-22	20-25	6.0-6.3	0	0	0	0	
	2-6	15-24	15-25	6.0-6.3	0	0	0	0	
	6-12	18-30	15-25	6.0-6.5	0	0	0	0	
	12-23	20-30	20-25	6.0-6.5	0	0	0	0	
	23-31	20-30	20-30	6.0-6.5	0	0	0	0	
	31-42	---	0.0-0.0	---	0	0	0	0	
	42	---	0.0-0.0	---	0	0	0	0	
554:									
Dunstone gravelly loam-----	0-4	12-20	16-29	6.0-6.5	0	0	0	0	
	4-6	14-22	9.0-18	6.0-6.5	0	0	0	0	
	6-10	15-27	11-18	5.8-7.0	0	0	0	0	
	10-15	18-35	11-18	5.8-7.0	0	0	0	0	
	15-37	---	---	---	0	0	0	0	
	37	---	---	---	0	0	0	0	
Loafercreek gravelly loam-----	0-0.5	---	---	---	0	0	0	0	
	0.5-2	14-22	20-25	6.0-6.3	0	0	0	0	
	2-6	15-24	15-25	6.0-6.3	0	0	0	0	
	6-12	18-30	15-25	6.0-6.5	0	0	0	0	
	12-23	20-30	20-25	6.0-6.5	0	0	0	0	
	23-31	20-30	20-30	6.0-6.5	0	0	0	0	
	31-42	---	0.0-0.0	---	0	0	0	0	
	42	---	0.0-0.0	---	0	0	0	0	
555:									
Dunstone gravelly loam-----	0-4	12-20	16-29	6.0-6.5	0	0	0	0	
	4-6	14-22	9.0-18	6.0-6.5	0	0	0	0	
	6-10	15-27	11-18	5.8-7.0	0	0	0	0	
	10-15	18-35	11-18	5.8-7.0	0	0	0	0	
	15-37	---	---	---	0	0	0	0	
	37	---	---	---	0	0	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m		
555:									
Loafercreek gravelly loam-----	0-0.5	---	---	---	---	0	0	0	0
	0.5-2	14-22	20-25	6.0-6.3	0	0	0	0	0
	2-6	15-24	15-25	6.0-6.3	0	0	0	0	0
	6-12	18-30	15-25	6.0-6.5	0	0	0	0	0
	12-23	20-30	20-25	6.0-6.5	0	0	0	0	0
	23-31	20-30	20-30	6.0-6.5	0	0	0	0	0
	31-42	---	0.0-0.0	---	0	0	0	0	0
	42	---	0.0-0.0	---	0	0	0	0	0
556:									
Mounthope loam-----	0-1	---	---	---	---	0	0	0	0
	1-3	17-25	14-21	5.6-7.3	0	0	0	0	0
	3-7	20-27	17-23	5.6-6.5	0	0	0	0	0
	7-15	20-27	17-24	5.6-6.5	0	0	0	0	0
	15-22	27-35	22-28	5.6-6.5	0	0	0	0	0
	22-26	27-35	21-29	5.6-6.5	0	0	0	0	0
	26-31	27-35	21-32	5.6-6.5	0	0	0	0	0
	31-42	27-35	20-32	5.6-6.5	0	0	0	0	0
	42-52	20-35	13-28	5.6-6.5	0	0	0	0	0
	52	---	---	---	0	0	0	0	0
Hartsmill gravelly loam-----	0-1	---	---	---	---	0	0	0	0
	1-3	14-18	12-16	5.6-6.5	0	0	0	0	0
	3-6	17-30	14-25	5.6-7.3	0	0	0	0	0
	6-13	17-30	14-25	5.6-7.3	0	0	0	0	0
	13-24	17-30	14-24	5.6-7.3	0	0	0	0	0
	24-35	28-40	22-31	5.6-6.5	0	0	0	0	0
	35-62	28-40	21-31	5.6-6.5	0	0	0	0	0
	62	---	---	---	0	0	0	0	0
557:									
Mounthope loam-----	0-1	---	---	---	---	0	0	0	0
	1-3	17-25	14-21	5.6-7.3	0	0	0	0	0
	3-7	20-27	17-23	5.6-6.5	0	0	0	0	0
	7-15	20-27	17-24	5.6-6.5	0	0	0	0	0
	15-22	27-35	22-28	5.6-6.5	0	0	0	0	0
	22-26	27-35	21-29	5.6-6.5	0	0	0	0	0
	26-31	27-35	21-32	5.6-6.5	0	0	0	0	0
	31-42	27-35	20-32	5.6-6.5	0	0	0	0	0
	42-52	20-35	13-28	5.6-6.5	0	0	0	0	0
	52	---	---	---	0	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay Cation- exchange capacity	Soil reaction pH	Calcium carbonate Pct	Gypsum Pct	Salinity dS/m	Sodium adsorption ratio
	In	Pct						
557:								
Hartsmill gravelly loam-----	0-1	---	---	---	0	0	0	0
	1-3	14-18	12-16	5.6-6.5	0	0	0	0
	3-6	17-30	14-25	5.6-7.3	0	0	0	0
	6-13	17-30	14-25	5.6-7.3	0	0	0	0
	13-24	17-30	14-24	5.6-7.3	0	0	0	0
	24-35	28-40	22-31	5.6-6.5	0	0	0	0
	35-62	28-40	21-31	5.6-6.5	0	0	0	0
	62	---	---	---	0	0	0	0
558:								
Hartsmill gravelly loam-----	0-1	---	---	---	0	0	0	0
	1-3	14-18	12-16	5.6-6.5	0	0	0	0
	3-6	17-30	14-25	5.6-7.3	0	0	0	0
	6-13	17-30	14-25	5.6-7.3	0	0	0	0
	13-24	17-30	14-24	5.6-7.3	0	0	0	0
	24-35	28-40	22-31	5.6-6.5	0	0	0	0
	35-62	28-40	21-31	5.6-6.5	0	0	0	0
	62	---	---	---	0	0	0	0
Mounthope loam-----	0-1	---	---	---	0	0	0	0
	1-3	17-25	14-21	5.6-7.3	0	0	0	0
	3-7	20-27	17-23	5.6-6.5	0	0	0	0
	7-15	20-27	17-24	5.6-6.5	0	0	0	0
	15-22	27-35	22-28	5.6-6.5	0	0	0	0
	22-26	27-35	21-29	5.6-6.5	0	0	0	0
	26-31	27-35	21-32	5.6-6.5	0	0	0	0
	31-42	27-35	20-32	5.6-6.5	0	0	0	0
	42-52	20-35	13-28	5.6-6.5	0	0	0	0
	52	---	---	---	0	0	0	0
559:								
Hartsmill gravelly loam-----	0-1	---	---	---	0	0	0	0
	1-3	14-18	12-16	5.6-6.5	0	0	0	0
	3-6	17-30	14-25	5.6-7.3	0	0	0	0
	6-13	17-30	14-25	5.6-7.3	0	0	0	0
	13-24	17-30	14-24	5.6-7.3	0	0	0	0
	24-35	28-40	22-31	5.6-6.5	0	0	0	0
	35-62	28-40	21-31	5.6-6.5	0	0	0	0
	62	---	---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m		
559:									
Mounthope loam-----	0-1	---	---	---	---	0	0	0	0
	1-3	17-25	14-21	5.6-7.3	0	0	0	0	0
	3-7	20-27	17-23	5.6-6.5	0	0	0	0	0
	7-15	20-27	17-24	5.6-6.5	0	0	0	0	0
	15-22	27-35	22-28	5.6-6.5	0	0	0	0	0
	22-26	27-35	21-29	5.6-6.5	0	0	0	0	0
	26-31	27-35	21-32	5.6-6.5	0	0	0	0	0
	31-42	27-35	20-32	5.6-6.5	0	0	0	0	0
	42-52	20-35	13-28	5.6-6.5	0	0	0	0	0
	52	---	---	---	0	0	0	0	0
560:									
Hartsmill gravelly loam-----	0-1	---	---	---	---	0	0	0	0
	1-3	14-18	12-16	5.6-6.5	0	0	0	0	0
	3-6	17-30	14-25	5.6-7.3	0	0	0	0	0
	6-13	17-30	14-25	5.6-7.3	0	0	0	0	0
	13-24	17-30	14-24	5.6-7.3	0	0	0	0	0
	24-35	28-40	22-31	5.6-6.5	0	0	0	0	0
	35-62	28-40	21-31	5.6-6.5	0	0	0	0	0
	62	---	---	---	0	0	0	0	0
Mounthope loam-----	0-1	---	---	---	---	0	0	0	0
	1-3	17-25	14-21	5.6-7.3	0	0	0	0	0
	3-7	20-27	17-23	5.6-6.5	0	0	0	0	0
	7-15	20-27	17-24	5.6-6.5	0	0	0	0	0
	15-22	27-35	22-28	5.6-6.5	0	0	0	0	0
	22-26	27-35	21-29	5.6-6.5	0	0	0	0	0
	26-31	27-35	21-32	5.6-6.5	0	0	0	0	0
	31-42	27-35	20-32	5.6-6.5	0	0	0	0	0
	42-52	20-35	13-28	5.6-6.5	0	0	0	0	0
	52	---	---	---	0	0	0	0	0
561:									
Bigridge loam-----	0-1	---	---	---	---	0	0	0	0
	1-5	15-25	8.1-14	5.6-7.3	0	0	0	0	0
	5-9	19-30	8.6-16	5.6-7.3	0	0	0	0	0
	9-15	18-35	8.3-19	4.5-7.3	0	0	0	0	0
	15-20	18-35	8.0-19	4.5-6.5	0	0	0	0	0
	20-27	15-35	7.8-19	4.5-6.5	0	0	0	0	0
	27-36	15-35	5.8-19	4.5-6.5	0	0	0	0	0
	36-51	15-35	7.7-19	4.5-6.5	0	0	0	0	0
	51-62	---	---	---	0	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay Cation- exchange capacity	Soil reaction pH	Calcium carbonate Pct	Gypsum Pct	Salinity dS/m	Sodium adsorption ratio
	In	Pct						
561:								
Minniecreek loam-----	0-2	15-20	8.1-11	5.1-6.5	0	0	0	0
	2-8	18-22	9.7-12	5.6-6.5	0	0	0	0
	8-15	24-30	13-16	5.6-6.5	0	0	0	0
	15-24	24-30	13-16	5.6-6.5	0	0	0	0
	24-32	29-37	15-20	5.1-6.5	0	0	0	0
	32-47	---	---	---	0	0	0	0
	47-58	---	---	---	0	0	0	0
	58-75	---	---	---	0	0	0	0
562:								
Bigridge loam-----	0-1	---	---	---	0	0	0	0
	1-5	15-25	8.1-14	5.6-7.3	0	0	0	0
	5-9	19-30	8.6-16	5.6-7.3	0	0	0	0
	9-15	18-35	8.3-19	4.5-7.3	0	0	0	0
	15-20	18-35	8.0-19	4.5-6.5	0	0	0	0
	20-27	15-35	7.8-19	4.5-6.5	0	0	0	0
	27-36	15-35	5.8-19	4.5-6.5	0	0	0	0
	36-51	15-35	7.7-19	4.5-6.5	0	0	0	0
	51-62	---	---	---	0	0	0	0
Minniecreek loam-----	0-2	15-20	8.1-11	5.1-6.5	0	0	0	0
	2-8	18-22	9.7-12	5.6-6.5	0	0	0	0
	8-15	24-30	13-16	5.6-6.5	0	0	0	0
	15-24	24-30	13-16	5.6-6.5	0	0	0	0
	24-32	29-37	15-20	5.1-6.5	0	0	0	0
	32-47	---	---	---	0	0	0	0
	47-58	---	---	---	0	0	0	0
	58-75	---	---	---	0	0	0	0
563:								
Bigridge loam-----	0-1	---	---	---	0	0	0	0
	1-5	15-25	8.1-14	5.6-7.3	0	0	0	0
	5-9	19-30	8.6-16	5.6-7.3	0	0	0	0
	9-15	18-35	8.3-19	4.5-7.3	0	0	0	0
	15-20	18-35	8.0-19	4.5-6.5	0	0	0	0
	20-27	15-35	7.8-19	4.5-6.5	0	0	0	0
	27-36	15-35	5.8-19	4.5-6.5	0	0	0	0
	36-51	15-35	7.7-19	4.5-6.5	0	0	0	0
	51-62	---	---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
563:								
Minniecreek loam-----	0-2	15-20	8.1-11	5.1-6.5	0	0	0	0
	2-8	18-22	9.7-12	5.6-6.5	0	0	0	0
	8-15	24-30	13-16	5.6-6.5	0	0	0	0
	15-24	24-30	13-16	5.6-6.5	0	0	0	0
	24-32	29-37	15-20	5.1-6.5	0	0	0	0
	32-47	---	---	---	0	0	0	0
	47-58	---	---	---	0	0	0	0
	58-75	---	---	---	0	0	0	0
564:								
Bigridge loam-----	0-1	---	---	---	0	0	0	0
	1-5	15-25	8.1-14	5.6-7.3	0	0	0	0
	5-9	19-30	8.6-16	5.6-7.3	0	0	0	0
	9-15	18-35	8.3-19	4.5-7.3	0	0	0	0
	15-20	18-35	8.0-19	4.5-6.5	0	0	0	0
	20-27	15-35	7.8-19	4.5-6.5	0	0	0	0
	27-36	15-35	5.8-19	4.5-6.5	0	0	0	0
	36-51	15-35	7.7-19	4.5-6.5	0	0	0	0
	51-62	---	---	---	0	0	0	0
Minniecreek loam-----	0-2	15-20	8.1-11	5.1-6.5	0	0	0	0
	2-8	18-22	9.7-12	5.6-6.5	0	0	0	0
	8-15	24-30	13-16	5.6-6.5	0	0	0	0
	15-24	24-30	13-16	5.6-6.5	0	0	0	0
	24-32	29-37	15-20	5.1-6.5	0	0	0	0
	32-47	---	---	---	0	0	0	0
	47-58	---	---	---	0	0	0	0
	58-75	---	---	---	0	0	0	0
565:								
Dunstone loam, dry-----	0-2	12-20	16-29	5.0-6.5	0	0	0	0
	2-7	16-22	9.0-18	6.0-6.6	0	0	0	0
	7-10	16-24	11-19	6.0-6.7	0	0	0	0
	10-16	23-32	11-18	5.8-6.8	0	0	0	0
	16	---	0.0-0.0	---	0	0	0	0
Argonaut taxadjunct loam-----	0-2	18-30	9.8-16	5.9-7.0	0	0	0	0
	2-8	28-40	15-22	6.0-6.7	0	0	0	0
	8-14	40-50	21-27	6.0-6.9	0	0	0	0
	14-20	40-50	21-27	6.0-6.9	0	0	0	0
	20-26	36-45	18-24	6.1-7.0	0	0	0	0
	26-30	36-45	18-24	6.1-7.0	0	0	0	0
	30	---	---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay Pct	Cation- exchange capacity meq/100g	Soil reaction pH	Calcium carbonate Pct	Gypsum Pct	Salinity dS/m	Sodium adsorption ratio
	In	Pct							
565:									
Sunnyslope loam-----	0-2	10-18	10-25	6.1-6.5	0	0	0	0	
	2-6	15-20	8.0-20	6.0-6.5	0	0	0	0	
	6-10	15-30	7.0-22	5.6-6.5	0	0	0	0	
	10-14	15-30	7.0-22	5.6-6.5	0	0	0	0	
	14	---	---	---	0	0	0	0	
566:									
Dunstone loam, dry-----	0-2	12-20	16-29	5.0-6.5	0	0	0	0	
	2-7	16-22	9.0-18	6.0-6.6	0	0	0	0	
	7-10	16-24	11-19	6.0-6.7	0	0	0	0	
	10-16	23-32	11-18	5.8-6.8	0	0	0	0	
	16	---	0.0-0.0	---	0	0	0	0	
Loafercreek silt loam, dry-----	0-2	14-22	16-33	5.5-7.0	0	0	0	0	
	2-4	15-24	8.0-22	5.5-7.0	0	0	0	0	
	4-11	15-24	8.0-22	5.8-6.7	0	0	0	0	
	11-20	18-30	8.0-21	6.0-6.8	0	0	0	0	
	20-29	18-30	8.0-25	6.0-7.0	0	0	0	0	
	29	---	0.0-0.0	---	0	0	0	0	
Katskillhill loam-----	0-2	12-18	---	5.0-6.5	0	0	0	0	
	2-8	15-20	13-18	6.0-6.5	0	0	0	0	
	8-12	21-25	17-21	6.0-6.5	0	0	0	0	
	12-19	35-50	27-38	4.5-6.5	0	0	0	0	
	19-29	45-55	29-40	6.6-8.0	0	0	0	0	
	29-42	45-55	29-40	6.6-8.0	0	0	0	0	
	42	---	---	---	0	0	0	0	
567:									
Dunstone loam, dry-----	0-2	12-20	16-29	5.0-6.5	0	0	0	0	
	2-7	16-22	9.0-18	6.0-6.6	0	0	0	0	
	7-10	16-24	11-19	6.0-6.7	0	0	0	0	
	10-16	23-32	11-18	5.8-6.8	0	0	0	0	
	16	---	0.0-0.0	---	0	0	0	0	
Loafercreek silt loam, dry-----	0-2	14-22	16-33	5.5-7.0	0	0	0	0	
	2-4	15-24	8.0-22	5.5-7.0	0	0	0	0	
	4-11	15-24	8.0-22	5.8-6.7	0	0	0	0	
	11-20	18-30	8.0-21	6.0-6.8	0	0	0	0	
	20-29	18-30	8.0-25	6.0-7.0	0	0	0	0	
	29	---	0.0-0.0	---	0	0	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m		
567:									
Argonaut taxadjunct loam-----	0-2	18-30	9.8-16	5.9-7.0	0	0	0	0	
	2-8	28-40	15-22	6.0-6.7	0	0	0	0	
	8-14	40-50	21-27	6.0-6.9	0	0	0	0	
	14-20	40-50	21-27	6.0-6.9	0	0	0	0	
	20-26	36-45	18-24	6.1-7.0	0	0	0	0	
	26-30	36-45	18-24	6.1-7.0	0	0	0	0	
	30	---	---	---	0	0	0	0	
577:									
Parkshill coarse sandy loam-----	0-2	12-17	6.5-9.4	5.8-6.7	0	0	0	0	
	2-8	14-17	7.5-9.3	5.6-6.7	0	0	0	0	
	8-18	16-19	8.4-10	5.6-6.5	0	0	0	0	
	18-26	16-19	8.4-10	5.6-6.5	0	0	0	0	
	26-35	18-23	9.1-12	5.7-6.7	0	0	0	0	
	35-53	18-33	9.1-17	5.6-7.0	0	0	0	0	
	53-61	16-26	8.1-14	5.9-6.6	0	0	0	0	
Flanly loam-----	0-2	12-18	6.6-9.9	4.7-6.5	0	0	0	0	
	2-5	15-20	8.1-11	5.8-6.5	0	0	0	0	
	5-10	18-28	9.7-15	5.6-6.5	0	0	0	0	
	10-23	22-35	12-19	5.6-7.0	0	0	0	0	
	23-26	---	---	---	0	0	0	0	
Hurleton gravelly sandy loam-----	0-3	10-17	5.5-9.4	6.5-6.5	0	0	0	0	
	3-7	10-17	5.5-9.4	5.8-6.5	0	0	0	0	
	7-12	14-20	7.6-11	5.8-6.5	0	0	0	0	
	12-16	16-24	8.5-13	5.6-6.5	0	0	0	0	
	16-19	19-32	10-17	4.5-6.5	0	0	0	0	
	19-25	20-35	10-18	5.4-6.5	0	0	0	0	
	25	---	---	---	0	0	0	0	
578:									
Flanly loam-----	0-2	12-18	6.6-9.9	4.7-6.5	0	0	0	0	
	2-5	15-20	8.1-11	5.8-6.5	0	0	0	0	
	5-10	18-28	9.7-15	5.6-6.5	0	0	0	0	
	10-23	22-35	12-19	5.6-7.0	0	0	0	0	
	23-26	---	---	---	0	0	0	0	
Swedesflat cobbly fine sandy loam-----	0-2	12-20	6.5-11	5.1-6.9	0	0	0	0	
	2-8	13-20	7.1-11	5.6-6.3	0	0	0	0	
	8-12	18-25	9.4-13	6.0-7.0	0	0	0	0	
	12-18	---	---	---	0	0	0	0	
	18	---	---	---	0	0	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
580:								
Surnuf taxadjunct loam-----	0-1	---	---	---	0	0	0	0
	1-5	20-25	10-13	6.5-7.0	0	0	0	0
	5-11	22-40	9.5-16	5.5-6.5	0	0	0	0
	11-18	35-55	11-18	5.5-6.5	0	0	0	0
	18-31	35-65	11-20	5.0-6.0	0	0	0	0
	31-43	35-65	11-20	5.0-6.0	0	0	0	0
	43-54	35-65	11-20	5.0-6.0	0	0	0	0
	54-67	25-35	---	5.0-5.8	0	0	0	0
Griffgulch very gravelly silt loam-----	0-2	---	---	---	0	0	0	0
	2-3	---	---	---	0	0	0	0
	3-7	18-27	20-30	5.6-6.5	0	0	0	0
	7-11	27-35	15-25	5.6-6.5	0	0	0	0
	11-20	27-35	15-25	5.6-6.5	0	0	0	0
	20-33	35-50	15-25	5.6-6.5	0	0	0	0
	33-47	35-50	15-25	5.6-6.5	0	0	0	0
	47-58	35-50	15-25	5.6-6.5	0	0	0	0
	58	---	---	---	0	0	0	0
Rock outcrop, metavolcanic.								
581:								
Surnuf taxadjunct loam-----	0-1	---	---	---	0	0	0	0
	1-5	20-25	10-13	6.5-7.0	0	0	0	0
	5-11	22-40	9.5-16	5.5-6.5	0	0	0	0
	11-18	35-55	11-18	5.5-6.5	0	0	0	0
	18-31	35-65	11-20	5.0-6.0	0	0	0	0
	31-43	35-65	11-20	5.0-6.0	0	0	0	0
	43-54	35-65	11-20	5.0-6.0	0	0	0	0
	54-67	25-35	---	5.0-5.8	0	0	0	0
Griffgulch very gravelly silt loam-----	0-2	---	---	---	0	0	0	0
	2-3	---	---	---	0	0	0	0
	3-7	18-27	20-30	5.6-6.5	0	0	0	0
	7-11	27-35	15-25	5.6-6.5	0	0	0	0
	11-20	27-35	15-25	5.6-6.5	0	0	0	0
	20-33	35-50	15-25	5.6-6.5	0	0	0	0
	33-47	35-50	15-25	5.6-6.5	0	0	0	0
	47-58	35-50	15-25	5.6-6.5	0	0	0	0
	58	---	---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
582:								
Surnuf taxadjunct loam-----	0-1	---	---	---	0	0	0	0
	1-5	20-25	10-13	6.5-7.0	0	0	0	0
	5-11	22-40	9.5-16	5.5-6.5	0	0	0	0
	11-18	35-55	11-18	5.5-6.5	0	0	0	0
	18-31	35-65	11-20	5.0-6.0	0	0	0	0
	31-43	35-65	11-20	5.0-6.0	0	0	0	0
	43-54	35-65	11-20	5.0-6.0	0	0	0	0
	54-67	25-35	---	5.0-5.8	0	0	0	0
Griffgulch very gravelly silt loam-----	0-2	---	---	---	0	0	0	0
	2-3	---	---	---	0	0	0	0
	3-7	18-27	20-30	5.6-6.5	0	0	0	0
	7-11	27-35	15-25	5.6-6.5	0	0	0	0
	11-20	27-35	15-25	5.6-6.5	0	0	0	0
	20-33	35-50	15-25	5.6-6.5	0	0	0	0
	33-47	35-50	15-25	5.6-6.5	0	0	0	0
	47-58	35-50	15-25	5.6-6.5	0	0	0	0
	58	---	---	---	0	0	0	0
583:								
Surnuf taxadjunct loam-----	0-1	---	---	---	0	0	0	0
	1-5	20-25	10-13	6.5-7.0	0	0	0	0
	5-11	22-40	9.5-16	5.5-6.5	0	0	0	0
	11-18	35-55	11-18	5.5-6.5	0	0	0	0
	18-31	35-65	11-20	5.0-6.0	0	0	0	0
	31-43	35-65	11-20	5.0-6.0	0	0	0	0
	43-54	35-65	11-20	5.0-6.0	0	0	0	0
	54-67	25-35	---	5.0-5.8	0	0	0	0
Griffgulch very gravelly silt loam-----	0-2	---	---	---	0	0	0	0
	2-3	---	---	---	0	0	0	0
	3-7	18-27	20-30	5.6-6.5	0	0	0	0
	7-11	27-35	15-25	5.6-6.5	0	0	0	0
	11-20	27-35	15-25	5.6-6.5	0	0	0	0
	20-33	35-50	15-25	5.6-6.5	0	0	0	0
	33-47	35-50	15-25	5.6-6.5	0	0	0	0
	47-58	35-50	15-25	5.6-6.5	0	0	0	0
	58	---	---	---	0	0	0	0
584:								
Flanly loam-----	0-2	12-18	6.6-9.9	4.7-6.5	0	0	0	0
	2-5	15-20	8.1-11	5.8-6.5	0	0	0	0
	5-10	18-28	9.7-15	5.6-6.5	0	0	0	0
	10-23	22-35	12-19	5.6-7.0	0	0	0	0
	23-26	---	---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay Pct	Cation- exchange capacity meq/100g	Soil reaction pH	Calcium carbonate Pct	Gypsum Pct	Salinity dS/m	Sodium adsorption ratio
	In	Pct							
584:									
Swedesflat cobbly fine sandy loam-----	0-2	12-20	6.5-11	5.1-6.9	0	0	0	0	
	2-8	13-20	7.1-11	5.6-6.3	0	0	0	0	
	8-12	18-25	9.4-13	6.0-7.0	0	0	0	0	
	12-18	---	---	---	0	0	0	0	
	18	---	---	---	0	0	0	0	
Rackerby very gravelly sandy loam-----	0-2	8-16	4.4-8.8	6.1-6.5	0	0	0	0	
	2-5	10-20	5.4-11	6.1-6.5	0	0	0	0	
	5-13	10-20	5.3-11	6.1-6.5	0	0	0	0	
	13	---	---	---	0	0	0	0	
585:									
Flanly loam-----	0-2	12-18	6.6-9.9	4.7-6.5	0	0	0	0	
	2-5	15-20	8.1-11	5.8-6.5	0	0	0	0	
	5-10	18-28	9.7-15	5.6-6.5	0	0	0	0	
	10-23	22-35	12-19	5.6-7.0	0	0	0	0	
	23-26	---	---	---	0	0	0	0	
Sommeyleft loam-----	0-2	15-20	14-18	6.1-7.3	0	0	0	0	
	2-9	14-21	12-18	6.1-6.5	0	0	0	0	
	9-14	18-30	15-24	6.1-6.5	0	0	0	0	
	14-24	22-33	17-26	6.1-7.3	0	0	0	0	
	24-31	18-30	13-23	6.1-6.5	0	0	0	0	
	31-62	16-22	12-15	6.1-7.3	0	0	0	0	
	62-70	16-22	12-15	6.1-7.3	0	0	0	0	
586:									
Sommeyleft loam-----	0-2	15-20	14-18	6.1-7.3	0	0	0	0	
	2-9	14-21	12-18	6.1-6.5	0	0	0	0	
	9-14	18-30	15-24	6.1-6.5	0	0	0	0	
	14-24	22-33	17-26	6.1-7.3	0	0	0	0	
	24-31	18-30	13-23	6.1-6.5	0	0	0	0	
	31-62	16-22	12-15	6.1-7.3	0	0	0	0	
	62-70	16-22	12-15	6.1-7.3	0	0	0	0	
Mounthope loam-----	0-1	---	---	---	0	0	0	0	
	1-3	17-25	14-21	5.6-7.3	0	0	0	0	
	3-7	20-27	17-23	5.6-6.5	0	0	0	0	
	7-15	20-27	17-24	5.6-6.5	0	0	0	0	
	15-22	27-35	22-28	5.6-6.5	0	0	0	0	
	22-26	27-35	21-29	5.6-6.5	0	0	0	0	
	26-31	27-35	21-32	5.6-6.5	0	0	0	0	
	31-42	27-35	20-32	5.6-6.5	0	0	0	0	
	42-52	20-35	13-28	5.6-6.5	0	0	0	0	
	52	---	---	---	0	0	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
587:								
Sommeyleft loam-----	0-2	15-20	14-18	6.1-7.3	0	0	0	0
	2-9	14-21	12-18	6.1-6.5	0	0	0	0
	9-14	18-30	15-24	6.1-6.5	0	0	0	0
	14-24	22-33	17-26	6.1-7.3	0	0	0	0
	24-31	18-30	13-23	6.1-6.5	0	0	0	0
	31-62	16-22	12-15	6.1-7.3	0	0	0	0
	62-70	16-22	12-15	6.1-7.3	0	0	0	0
Mounthope loam-----	0-1	---	---	---	0	0	0	0
	1-3	17-25	14-21	5.6-7.3	0	0	0	0
	3-7	20-27	17-23	5.6-6.5	0	0	0	0
	7-15	20-27	17-24	5.6-6.5	0	0	0	0
	15-22	27-35	22-28	5.6-6.5	0	0	0	0
	22-26	27-35	21-29	5.6-6.5	0	0	0	0
	26-31	27-35	21-32	5.6-6.5	0	0	0	0
	31-42	27-35	20-32	5.6-6.5	0	0	0	0
	42-52	20-35	13-28	5.6-6.5	0	0	0	0
	52	---	---	---	0	0	0	0
Hurleton gravelly sandy loam-----	0-3	10-17	5.5-9.4	6.5-6.5	0	0	0	0
	3-7	10-17	5.5-9.4	5.8-6.5	0	0	0	0
	7-12	14-20	7.6-11	5.8-6.5	0	0	0	0
	12-16	16-24	8.5-13	5.6-6.5	0	0	0	0
	16-19	19-32	10-17	4.5-6.5	0	0	0	0
	19-25	20-35	10-18	5.4-6.5	0	0	0	0
	25	---	---	---	0	0	0	0
588:								
Ultic Haploxeralfs, thermic, high terrace---	0-2	14-17	9.5-14	5.1-6.5	0	0	0	0
	2-6	18-20	12-14	5.1-6.0	0	0	0	0
	6-12	20-30	11-18	5.1-6.0	0	0	0	0
	12-20	20-30	11-16	5.1-6.0	0	0	0	0
	20-32	26-37	14-20	5.1-6.5	0	0	0	0
	32-39	20-26	11-14	6.1-7.3	0	0	0	0
	39-50	20-26	11-14	6.1-7.3	0	0	0	0
589:								
Ultic Haploxeralfs, thermic, high terrace---	0-2	14-17	9.5-14	5.1-6.5	0	0	0	0
	2-6	18-20	12-14	5.1-6.0	0	0	0	0
	6-12	20-30	11-18	5.1-6.0	0	0	0	0
	12-20	20-30	11-16	5.1-6.0	0	0	0	0
	20-32	26-37	14-20	5.1-6.5	0	0	0	0
	32-39	20-26	11-14	6.1-7.3	0	0	0	0
	39-50	20-26	11-14	6.1-7.3	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay Cation- exchange capacity	Soil reaction pH	Calcium carbonate Pct	Gypsum Pct	Salinity dS/m	Sodium adsorption ratio
	In	Pct						
590:								
Vistarobles sandy loam-----	0-5	16-26	8.6-14	5.1-7.3	0	0	0	0
	5-10	16-26	8.6-14	5.1-7.3	0	0	0	0
	10-14	40-50	21-26	6.1-7.3	0	0	0	0
	14-34	3-10	1.6-5.3	6.6-8.4	0	0	0.0-0.5	0
	34-40	3-15	1.6-7.9	6.6-8.4	0	0	0.0-0.5	0
Redding loam-----	0-4	12-26	6.5-14	5.6-7.3	0	0	0	0
	4-11	12-26	6.3-14	5.6-7.3	0	0	0	0
	11-24	15-26	7.8-14	5.6-7.3	0	0	0	0
	24-35	40-50	21-26	6.1-7.3	0	0	0	0
	35-40	---	---	---	0	0	0	0
Argonaut taxadjunct loam-----	0-2	18-30	9.8-16	5.9-7.0	0	0	0	0
	2-8	28-40	15-22	6.0-6.7	0	0	0	0
	8-14	40-50	21-27	6.0-6.9	0	0	0	0
	14-20	40-50	21-27	6.0-6.9	0	0	0	0
	20-26	36-45	18-24	6.1-7.0	0	0	0	0
	26-30	36-45	18-24	6.1-7.0	0	0	0	0
	30	---	---	---	0	0	0	0
Haploxererts gravelly silty clay-----	0-2	30-45	20-41	5.1-6.5	0	0	0	0
	2-10	45-60	23-42	6.1-7.3	0	0	0	0
	10-30	50-65	25-44	6.1-7.3	0	0	0	0
	30-33	40-55	6.7-27	6.6-8.4	0	0	0	0
	33-41	40-55	6.7-27	6.6-8.4	0	0	0	0
	41-44	---	---	---	0	0	0	0
603:								
Oroville gravelly fine sandy loam-----	0-2	15-24	8.0-13	5.6-6.5	0	0	0	0
	2-6	18-25	9.4-13	5.6-7.3	0	0	0	0
	6-13	22-35	11-18	5.6-7.3	0	0	0	0
	13-17	45-52	23-27	5.6-7.3	0	0	0	0
	17-23	45-52	22-27	5.6-7.3	0	0	0	0
	23-31	---	---	---	0	0	0	0
	31-60	---	---	---	0	0	0	0
Thermalito sandy loam-----	0-2	12-20	6.4-11	5.1-6.5	0	0	0	0
	2-6	18-33	9.3-17	5.1-7.3	0	0	0	0
	6-12	18-33	9.3-17	5.1-7.3	0	0	0	0
	12-18	18-33	9.3-17	5.1-7.3	0	0	0	0
	18-23	18-33	9.3-17	5.1-7.3	0	0	0	0
	23-25	18-33	9.3-17	5.1-7.3	0	0	0	0
	25-29	43-50	21-26	5.6-7.3	0	0	0	0
	29-32	43-50	21-26	5.6-7.3	0	0	0	0
	32-60	---	---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m		
603:									
Fernandez sandy loam-----	0-2	15-18	8.0-9.7	5.6-6.5	0	0	0	0	
	2-6	18-30	9.3-16	5.6-7.3	0	0	0	0	
	6-18	18-30	9.3-16	5.6-7.3	0	0	0	0	
	18-28	35-50	18-26	5.6-7.3	0	0	0	0	
	28-44	35-50	18-26	5.6-7.3	0	0	0	0	
	44-57	35-50	18-26	5.6-7.3	0	0	0	0	
	57-65	35-50	18-26	5.6-7.3	0	0	0	0	
	65-73	35-50	18-26	5.6-7.3	0	0	0	0	
	73-85	---	---	---	---	---	---	---	
Thompsonflat fine sandy loam-----	0-3	12-22	6.4-12	5.6-6.5	0	0	0	0	
	3-7	18-38	9.3-20	5.6-7.3	0	0	0	0	
	7-11	18-38	9.3-20	5.6-7.3	0	0	0	0	
	11-15	18-38	9.3-20	5.6-7.3	0	0	0	0	
	15-22	38-55	20-29	5.6-8.4	0	0	0.0-0.5	0	
	22-35	5-38	2.6-20	6.1-8.4	0	0	0.0-0.5	0	
	35-45	5-38	2.6-20	6.1-8.4	0	0	0.0-0.5	0	
	45-53	5-38	2.6-20	6.1-8.4	0	0	0.0-0.5	0	
	53-66	5-38	2.6-20	6.1-8.4	0	0	0.0-0.5	0	
	66-80	5-38	2.6-20	6.1-8.4	0	0	0.0-0.5	0	
605:									
Duric Xerarents fine sandy loam, leveled----	0-5	10-35	5.7-25	5.6-6.5	0	0	0	0	
	5-12	12-50	6.6-33	6.6-8.4	0	0	0.0-0.5	0	
	12-18	---	---	---	---	---	---	---	
Oroville gravelly fine sandy loam-----	0-2	15-24	8.0-13	5.6-6.5	0	0	0	0	
	2-6	18-25	9.4-13	5.6-7.3	0	0	0	0	
	6-13	22-35	11-18	5.6-7.3	0	0	0	0	
	13-17	45-52	23-27	5.6-7.3	0	0	0	0	
	17-23	45-52	22-27	5.6-7.3	0	0	0	0	
	23-31	---	---	---	0	0	0	0	
	31-60	---	---	---	0	0	0	0	
606:									
Redtough loam-----	0-1	15-22	15-25	5.6-7.0	0	0	0	0	
	1-7	18-27	15-25	6.1-7.0	0	0	0	0	
	7-13	18-27	15-25	6.1-7.0	0	0	0	0	
	13	---	---	---	0	0	0	0	
Fallager loam-----	0-1	20-30	15-25	6.1-6.5	0	0	0	0	
	1-3	35-40	15-25	6.1-7.3	0	0	0	0	
	3-7	40-60	15-25	6.6-8.4	0	0	0.0-0.5	0	
	7	---	---	---	0	0	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay Pct	Cation- exchange capacity meq/100g	Soil reaction pH	Calcium carbonate Pct	Gypsum Pct	Salinity dS/m	Sodium adsorption ratio
	In	Pct							
606:									
Anita, gravelly duripan-----	0-3	40-60	40-60	40-50	6.3-8.0	0	0	0.0-0.5	0
	3-8	40-60	40-60	40-50	6.3-8.0	0	0	0.0-0.5	0
	8-15	40-60	40-60	40-50	6.3-8.0	0	0	0.0-0.5	0
	15	---	---	---	---	0-1	0	0	0
609:									
Anita, gravelly duripan-----	0-3	40-60	40-60	40-50	6.3-8.0	0	0	0.0-0.5	0
	3-8	40-60	40-60	40-50	6.3-8.0	0	0	0.0-0.5	0
	8-15	40-60	40-60	40-50	6.3-8.0	0	0	0.0-0.5	0
	15	---	---	---	---	0-1	0	0	0
Tuscan taxadjunct gravelly clay loam-----	0-2	18-30	18-30	16-25	5.6-7.3	0	0	0.0-0.5	0
	2-5	25-46	25-46	20-35	6.1-8.4	0	0	0.0-0.5	0
	5-13	35-46	35-46	27-35	6.6-8.4	0	0	0.0-0.5	0
	13-23	35-46	35-46	27-35	6.6-8.4	0	0	0.0-0.5	0
	23-29	35-46	35-46	23-34	6.6-8.4	0	0	0.0-0.5	0
	29	---	---	---	---	---	---	---	---
614:									
Doemill gravelly loam-----	0-1	15-24	15-24	20-25	5.8-6.5	0	0	0	0
	1-5	18-30	18-30	20-25	6.3-7.0	0	0	0	0
	5-9	18-30	18-30	20-25	6.3-7.0	0	0	0	0
	9-14	18-30	18-30	20-25	6.3-7.0	0	0	0	0
	14	---	---	---	---	0	0	0	0
Jokerst very cobbly loam-----	0-1	12-21	12-21	18-25	6.3-7.0	0	0	0	0
	1-4	16-25	16-25	18-25	6.3-7.0	0	0	0	0
	4	---	---	---	---	0	0	0	0
615:									
Doemill gravelly loam-----	0-1	15-24	15-24	20-25	5.8-6.5	0	0	0	0
	1-5	18-30	18-30	20-25	6.3-7.0	0	0	0	0
	5-9	18-30	18-30	20-25	6.3-7.0	0	0	0	0
	9-14	18-30	18-30	20-25	6.3-7.0	0	0	0	0
	9	---	---	---	---	0	0	0	0
Jokerst very cobbly loam-----	0-1	12-21	12-21	18-25	6.3-7.0	0	0	0	0
	1-4	16-25	16-25	18-25	6.3-7.0	0	0	0	0
	4	---	---	---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m		
616:									
Jokerst very cobbly loam-----	0-1	12-21	18-25	6.3-7.0	0	0	0	0	
	1-4	16-25	18-25	6.3-7.0	0	0	0	0	
	4	---	---	---	0	0	0	0	
Doemill gravelly loam-----	0-1	15-24	20-25	5.8-6.5	0	0	0	0	
	1-5	18-30	20-25	6.3-7.0	0	0	0	0	
	5-9	18-30	20-25	6.3-7.0	0	0	0	0	
	9-14	18-30	20-25	6.3-7.0	0	0	0	0	
	14	---	---	---	0	0	0	0	
Typic Haploxeralfs gravelly loam-----	0-2	20-30	15-30	6.1-7.8	0	0	0	0	
	2-8	27-50	15-30	6.6-7.8	0	0	0	0	
	8-16	27-50	15-30	6.6-7.8	0	0	0	0	
	16-27	27-50	15-30	6.6-7.8	0	0	0	0	
	27-40	27-50	15-30	6.6-7.8	0	0	0	0	
	40	---	---	---	0	0	0	0	
617:									
Doemill gravelly loam-----	0-1	15-24	20-25	5.8-6.5	0	0	0	0	
	1-5	18-30	20-25	6.3-7.0	0	0	0	0	
	5-9	18-30	20-25	6.3-7.0	0	0	0	0	
	9-14	18-30	20-25	6.3-7.0	0	0	0	0	
	14	---	---	---	0	0	0	0	
Jokerst very cobbly loam-----	0-1	12-21	18-25	6.3-7.0	0	0	0	0	
	1-4	16-25	18-25	6.3-7.0	0	0	0	0	
	4	---	---	---	0	0	0	0	
Typic Haploxeralfs gravelly loam-----	0-2	20-30	15-30	6.1-7.8	0	0	0	0	
	2-8	27-50	15-30	6.6-7.8	0	0	0	0	
	8-16	27-50	15-30	6.6-7.8	0	0	0	0	
	16-27	27-50	15-30	6.6-7.8	0	0	0	0	
	27-40	27-50	15-30	6.6-7.8	0	0	0	0	
	40	---	---	---	0	0	0	0	
619:									
Carhart taxadjunct clay-----	0-4	50-60	40-50	6.1-7.3	0	0	0	0	
	4-11	40-60	40-50	6.6-7.3	0	0	0	0	
	11-17	40-60	40-50	6.6-7.3	0	0	0	0	
	17	---	---	---	0	0	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
620:								
Doemill gravelly loam-----	0-1	15-24	20-25	5.8-6.5	0	0	0	0
	1-5	18-30	20-25	6.3-7.0	0	0	0	0
	5-9	18-30	20-25	6.3-7.0	0	0	0	0
	9-14	18-30	20-25	6.3-7.0	0	0	0	0
	14	---	---	---	0	0	0	0
Jokerst very cobbly loam-----	0-1	12-21	18-25	6.3-7.0	0	0	0	0
	1-4	16-25	18-25	6.3-7.0	0	0	0	0
	4	---	---	---	0	0	0	0
Ultic Haploxeralfs, thermic, gravelly loam--	0-2	18-27	25-35	6.1-7.0	0	0	0	0
	2-6	20-39	20-25	5.6-6.8	0	0	0	0
	6-13	20-39	20-25	5.6-6.8	0	0	0	0
	13-21	20-39	20-25	5.6-6.8	0	0	0	0
	21-31	20-39	20-25	5.6-6.8	0	0	0	0
	31	---	---	---	0	0	0	0
621:								
Doemill gravelly loam-----	0-1	15-24	20-25	5.8-6.5	0	0	0	0
	1-5	18-30	20-25	6.3-7.0	0	0	0	0
	5-9	18-30	20-25	6.3-7.0	0	0	0	0
	9-14	18-30	20-25	6.3-7.0	0	0	0	0
	14	---	---	---	0	0	0	0
Jokerst very cobbly loam-----	0-1	12-21	18-25	6.3-7.0	0	0	0	0
	1-4	16-25	18-25	6.3-7.0	0	0	0	0
	4	---	---	---	0	0	0	0
Ultic Haploxeralfs, thermic, gravelly loam--	0-2	18-27	25-35	6.1-7.0	0	0	0	0
	2-6	20-39	20-25	5.6-6.8	0	0	0	0
	6-13	20-39	20-25	5.6-6.8	0	0	0	0
	13-21	20-39	20-25	5.6-6.8	0	0	0	0
	21-31	20-39	20-25	5.6-6.8	0	0	0	0
	31	---	---	---	0	0	0	0
622:								
Xerorthents, shallow-----	0-2	18-35	15-30	6.6-7.8	0	0	0	0
	2-5	23-42	15-30	6.1-7.8	0	0	0	0
	5-8	23-42	15-30	6.1-7.8	0	0	0	0
	8	---	---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct		meq/100g	pH	Pct	Pct	dS/m	
622:									
Typic Haploxeralfs gravelly loam-----	0-2	20-30		15-30	6.1-7.8	0	0	0	0
	2-8	27-50		15-30	6.6-7.8	0	0	0	0
	8-16	27-50		15-30	6.6-7.8	0	0	0	0
	16-27	27-50		15-30	6.6-7.8	0	0	0	0
	27-40	27-50		15-30	6.6-7.8	0	0	0	0
	40	---		---	---	0	0	0	0
Rock outcrop, mudflow-breccia cliffs.									
623:									
Xerorthents, shallow-----	0-2	18-35		15-30	6.6-7.8	0	0	0	0
	2-5	23-42		15-30	6.1-7.8	0	0	0	0
	5-8	23-42		15-30	6.1-7.8	0	0	0	0
	8	---		---	---	0	0	0	0
Typic Haploxeralfs gravelly loam-----	0-2	20-30		15-30	6.1-7.8	0	0	0	0
	2-8	27-50		15-30	6.6-7.8	0	0	0	0
	8-16	27-50		15-30	6.6-7.8	0	0	0	0
	16-27	27-50		15-30	6.6-7.8	0	0	0	0
	27-40	27-50		15-30	6.6-7.8	0	0	0	0
	40	---		---	---	0	0	0	0
Rock outcrop, mudflow-breccia cliffs.									
624:									
Ultic Haploxeralfs, mesic, gravelly loam----	0-1	---		---	---	0	0	0	0
	1-4	20-26		20-25	6.1-7.0	0	0	0	0
	4-9	25-35		8.0-20	6.1-7.0	0	0	0	0
	9-23	25-35		8.0-20	6.1-7.0	0	0	0	0
	23-32	25-35		8.0-20	6.1-7.0	0	0	0	0
	32-42	35-50		8.0-20	5.1-6.5	0	0	0	0
	42	---		---	---	0	0	0	0
Rockstripe very gravelly loam-----	0-2	15-25		15-25	6.1-6.8	0	0	0	0
	2-6	17-27		15-25	6.1-6.5	0	0	0	0
	6-9	17-27		15-25	6.1-6.5	0	0	0	0
	9	---		---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
625:								
Ultic Haploxeralfs, mesic, gravelly loam----	0-1	---	---	---	0	0	0	0
	1-4	20-26	20-25	6.1-7.0	0	0	0	0
	4-9	25-35	8.0-20	6.1-7.0	0	0	0	0
	9-23	25-35	8.0-20	6.1-7.0	0	0	0	0
	23-32	25-35	8.0-20	6.1-7.0	0	0	0	0
	32-42	35-50	8.0-20	5.1-6.5	0	0	0	0
	42	---	---	---	0	0	0	0
Rockstripe very gravelly loam-----	0-2	15-25	15-25	6.1-6.8	0	0	0	0
	2-6	17-27	15-25	6.1-6.5	0	0	0	0
	6-9	17-27	15-25	6.1-6.5	0	0	0	0
	9	---	---	---	0	0	0	0
626:								
Ultic Haploxeralfs gravelly loam-----	0-4	20-26	25-35	6.1-7.8	0	0	0	0
	4-10	23-35	15-30	6.1-7.8	0	0	0	0
	10-18	23-35	15-30	6.1-7.8	0	0	0	0
	18-35	35-50	15-30	6.1-7.3	0	0	0	0
	35-48	35-50	15-30	6.1-7.3	0	0	0	0
	48	---	---	---	0	0	0	0
Rockstripe very gravelly loam-----	0-2	15-25	15-25	6.1-6.8	0	0	0	0
	2-6	17-27	15-25	6.1-6.5	0	0	0	0
	6-9	17-27	15-25	6.1-6.5	0	0	0	0
	9	---	---	---	0	0	0	0
Rock outcrop, mudflow-breccia cliffs.								
627:								
Ultic Haploxeralfs gravelly loam-----	0-4	20-26	25-35	6.1-7.8	0	0	0	0
	4-10	23-35	15-30	6.1-7.8	0	0	0	0
	10-18	23-35	15-30	6.1-7.8	0	0	0	0
	18-35	35-50	15-30	6.1-7.3	0	0	0	0
	35-48	35-50	15-30	6.1-7.3	0	0	0	0
	40	---	---	---	0	0	0	0
Rockstripe very gravelly loam-----	0-2	15-25	15-25	6.1-6.8	0	0	0	0
	2-6	17-27	15-25	6.1-6.5	0	0	0	0
	6-9	17-27	15-25	6.1-6.5	0	0	0	0
	9	---	---	---	0	0	0	0
Rock outcrop, mudflow-breccia cliffs.								

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m		
628:									
Rockstripe very gravelly loam-----	0-2	15-25	15-25	6.1-6.8	0	0	0	0	
	2-6	17-27	15-25	6.1-6.5	0	0	0	0	
	6-9	17-27	15-25	6.1-6.5	0	0	0	0	
	9	---	---	---	0	0	0	0	
Ultic Haploxeraalfs gravelly loam-----	0-4	20-26	25-35	6.1-7.8	0	0	0	0	
	4-10	23-35	15-30	6.1-7.8	0	0	0	0	
	10-18	23-35	15-30	6.1-7.8	0	0	0	0	
	18-35	35-50	15-30	6.1-7.3	0	0	0	0	
	35-48	35-50	15-30	6.1-7.3	0	0	0	0	
	48	---	---	---	0	0	0	0	
Rock outcrop, mudflow-breccia cliffs.									
629:									
Slideland gravelly loam-----	0-2	18-27	30-45	6.1-7.0	0	0	0	0	
	2-9	20-35	20-35	5.8-7.0	0	0	0	0	
	9-14	20-35	20-35	5.8-7.0	0	0	0	0	
	14-21	20-35	20-35	5.8-7.0	0	0	0	0	
	21-28	20-35	20-35	5.8-7.0	0	0	0	0	
	28-38	35-50	20-35	6.1-7.5	0	0	0	0	
	38-51	35-50	20-35	6.1-7.5	0	0	0	0	
	51-69	35-50	20-35	6.1-7.5	0	0	0	0	
	69-80	35-50	20-35	6.1-7.5	0	0	0	0	
630:									
Slideland gravelly loam-----	0-2	18-27	30-45	6.1-7.0	0	0	0	0	
	2-9	20-35	20-35	5.8-7.0	0	0	0	0	
	9-14	20-35	20-35	5.8-7.0	0	0	0	0	
	14-21	20-35	20-35	5.8-7.0	0	0	0	0	
	21-28	20-35	20-35	5.8-7.0	0	0	0	0	
	28-38	35-50	20-35	6.1-7.5	0	0	0	0	
	38-51	35-50	20-35	6.1-7.5	0	0	0	0	
	51-69	35-50	20-35	6.1-7.5	0	0	0	0	
	69-80	35-50	20-35	6.1-7.5	0	0	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay Pct	Cation- exchange capacity meq/100g	Soil reaction pH	Calcium carbonate Pct	Gypsum Pct	Salinity dS/m	Sodium adsorption ratio
	In	Pct							
631:									
Slideland gravelly loam-----	0-2	18-27		30-45	6.1-7.0	0	0	0	0
	2-9	20-35		20-35	5.8-7.0	0	0	0	0
	9-14	20-35		20-35	5.8-7.0	0	0	0	0
	14-21	20-35		20-35	5.8-7.0	0	0	0	0
	21-28	20-35		20-35	5.8-7.0	0	0	0	0
	28-38	35-50		20-35	6.1-7.5	0	0	0	0
	38-51	35-50		20-35	6.1-7.5	0	0	0	0
	51-69	35-50		20-35	6.1-7.5	0	0	0	0
	69-80	35-50		20-35	6.1-7.5	0	0	0	0
632:									
Ultic Haploxeralfs, conglomerate, very deep	0-2	---		---	---	0	0	0	0
	2-6	23-30		25-35	6.1-7.3	0	0	0	0
	6-10	25-40		15-30	5.6-6.5	0	0	0	0
	10-17	25-40		15-30	5.6-6.5	0	0	0	0
	17-28	25-40		15-30	5.6-6.5	0	0	0	0
	28-40	25-40		15-30	5.6-6.5	0	0	0	0
	40-50	29-50		15-30	5.1-6.5	0	0	0	0
	50-71	29-50		15-30	5.1-6.5	0	0	0	0
	71-84	29-50		15-30	5.1-6.5	0	0	0	0
Ultic Haploxeralfs, conglomerate, moderately deep-----	0-2	---		---	---	0	0	0	0
	2-5	23-27		25-35	6.1-7.3	0	0	0	0
	5-10	27-35		15-30	6.1-7.3	0	0	0	0
	10-25	27-35		15-30	6.1-7.3	0	0	0	0
	25	---		---	---	0	0	0	0
633:									
Ultic Haploxeralfs, conglomerate, very deep	0-2	---		---	---	0	0	0	0
	2-6	23-30		25-35	6.1-7.3	0	0	0	0
	6-10	25-40		15-30	5.6-6.5	0	0	0	0
	10-17	25-40		15-30	5.6-6.5	0	0	0	0
	17-28	25-40		15-30	5.6-6.5	0	0	0	0
	28-40	25-40		15-30	5.6-6.5	0	0	0	0
	40-50	29-50		15-30	5.1-6.5	0	0	0	0
	50-71	29-50		15-30	5.1-6.5	0	0	0	0
	71-84	29-50		15-30	5.1-6.5	0	0	0	0
Ultic Haploxeralfs, conglomerate, moderately deep-----	0-2	---		---	---	0	0	0	0
	2-5	23-27		25-35	6.1-7.3	0	0	0	0
	5-10	27-35		15-30	6.1-7.3	0	0	0	0
	10-25	27-35		15-30	6.1-7.3	0	0	0	0
	25	---		---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m		
634:									
Ultic Haploxeralfs, conglomerate, very deep	0-2	---	---	---	0	0	0	0	
	2-6	23-30	25-35	6.1-7.3	0	0	0	0	
	6-10	25-40	15-30	5.6-6.5	0	0	0	0	
	10-17	25-40	15-30	5.6-6.5	0	0	0	0	
	17-28	25-40	15-30	5.6-6.5	0	0	0	0	
	28-40	25-40	15-30	5.6-6.5	0	0	0	0	
	40-50	29-50	15-30	5.1-6.5	0	0	0	0	
	50-71	29-50	15-30	5.1-6.5	0	0	0	0	
	71-84	29-50	15-30	5.1-6.5	0	0	0	0	
Ultic Haploxeralfs, conglomerate, moderately deep-----	0-2	---	---	---	0	0	0	0	
	2-5	23-27	25-35	6.1-7.3	0	0	0	0	
	5-10	27-35	15-30	6.1-7.3	0	0	0	0	
	10-25	27-35	15-30	6.1-7.3	0	0	0	0	
	25	---	---	---	0	0	0	0	
635:									
Ultic Haploxeralfs, conglomerate, very deep	0-2	---	---	---	0	0	0	0	
	2-6	23-30	25-35	6.1-7.3	0	0	0	0	
	6-10	25-40	15-30	5.6-6.5	0	0	0	0	
	10-17	25-40	15-30	5.6-6.5	0	0	0	0	
	17-28	25-40	15-30	5.6-6.5	0	0	0	0	
	28-40	25-40	15-30	5.6-6.5	0	0	0	0	
	40-50	29-50	15-30	5.1-6.5	0	0	0	0	
	50-71	29-50	15-30	5.1-6.5	0	0	0	0	
	71-84	29-50	15-30	5.1-6.5	0	0	0	0	
Ultic Haploxeralfs, conglomerate, moderately deep-----	0-2	---	---	---	0	0	0	0	
	2-5	23-27	25-35	6.1-7.3	0	0	0	0	
	5-10	27-35	15-30	6.1-7.3	0	0	0	0	
	10-25	27-35	15-30	6.1-7.3	0	0	0	0	
	25	---	---	---	0	0	0	0	
636:									
Ultic Haploxeralfs, conglomerate, moderately deep-----	0-2	---	---	---	0	0	0	0	
	2-5	23-27	25-35	6.1-7.3	0	0	0	0	
	5-10	27-35	15-30	6.1-7.3	0	0	0	0	
	10-25	27-35	15-30	6.1-7.3	0	0	0	0	
	25	---	---	---	0	0	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
636: Ultic Haploxeralfs, conglomerate, very deep	0-2	---	---	---	0	0	0	0
	2-6	23-30	25-35	6.1-7.3	0	0	0	0
	6-10	25-40	15-30	5.6-6.5	0	0	0	0
	10-17	25-40	15-30	5.6-6.5	0	0	0	0
	17-28	25-40	15-30	5.6-6.5	0	0	0	0
	28-40	25-40	15-30	5.6-6.5	0	0	0	0
	40-50	29-50	15-30	5.1-6.5	0	0	0	0
	50-71	29-50	15-30	5.1-6.5	0	0	0	0
	71-84	29-50	15-30	5.1-6.5	0	0	0	0
637: Ultic Haploxeralfs, sandstone-----	0-0.5	---	---	---	0	0	0	0
	0.5-2	10-26	15-25	5.6-7.3	0	0	0	0
	2-6	10-30	12-25	5.6-7.3	0	0	0	0
	6-11	10-30	12-25	5.6-7.3	0	0	0	0
	11-17	10-30	12-25	5.6-7.3	0	0	0	0
	17-24	10-30	12-25	5.6-7.3	0	0	0	0
	24-32	10-30	12-25	5.6-7.3	0	0	0	0
	32-53	10-30	12-25	5.6-7.3	0	0	0	0
	53-65	---	---	---	0	0	0	0
	65	---	---	---	0	0	0	0
638: Ultic Haploxeralfs, sandstone-----	0-0.5	---	---	---	0	0	0	0
	0.5-2	10-26	15-25	5.6-7.3	0	0	0	0
	2-6	10-30	12-25	5.6-7.3	0	0	0	0
	6-11	10-30	12-25	5.6-7.3	0	0	0	0
	11-17	10-30	12-25	5.6-7.3	0	0	0	0
	17-24	10-30	12-25	5.6-7.3	0	0	0	0
	24-32	10-30	12-25	5.6-7.3	0	0	0	0
	32-53	10-30	12-25	5.6-7.3	0	0	0	0
	53-65	---	---	---	0	0	0	0
	65	---	---	---	0	0	0	0
639: Ultic Haploxeralfs, sandstone-----	0-0.5	---	---	---	0	0	0	0
	0.5-2	10-26	15-25	5.6-7.3	0	0	0	0
	2-6	10-30	12-25	5.6-7.3	0	0	0	0
	6-11	10-30	12-25	5.6-7.3	0	0	0	0
	11-17	10-30	12-25	5.6-7.3	0	0	0	0
	17-24	10-30	12-25	5.6-7.3	0	0	0	0
	24-32	10-30	12-25	5.6-7.3	0	0	0	0
	32-53	10-30	12-25	5.6-7.3	0	0	0	0
	53-65	---	---	---	0	0	0	0
	65	---	---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay Pct	Cation- exchange capacity meq/100g	Soil reaction pH	Calcium carbonate Pct	Gypsum Pct	Salinity dS/m	Sodium adsorption ratio
	In	Pct							
640:									
Ultic Haploxeralfs, sandstone-----	0-0.5	---	---	---	---	0	0	0	0
	0.5-2	10-26	15-25	5.6-7.3	0	0	0	0	0
	2-6	10-30	12-25	5.6-7.3	0	0	0	0	0
	6-11	10-30	12-25	5.6-7.3	0	0	0	0	0
	11-17	10-30	12-25	5.6-7.3	0	0	0	0	0
	17-24	10-30	12-25	5.6-7.3	0	0	0	0	0
	24-32	10-30	12-25	5.6-7.3	0	0	0	0	0
	32-53	10-30	12-25	5.6-7.3	0	0	0	0	0
	53-65	---	---	---	0	0	0	0	0
	65	---	---	---	0	0	0	0	0
641:									
Ultic Haploxeralfs, sandstone-----	0-0.5	---	---	---	---	0	0	0	0
	0.5-2	10-26	15-25	5.6-7.3	0	0	0	0	0
	2-6	10-30	12-25	5.6-7.3	0	0	0	0	0
	6-11	10-30	12-25	5.6-7.3	0	0	0	0	0
	11-17	10-30	12-25	5.6-7.3	0	0	0	0	0
	17-24	10-30	12-25	5.6-7.3	0	0	0	0	0
	24-32	10-30	12-25	5.6-7.3	0	0	0	0	0
	32-53	10-30	12-25	5.6-7.3	0	0	0	0	0
	53-65	---	---	---	0	0	0	0	0
	65	---	---	---	0	0	0	0	0
642:									
Chinacamp gravelly loam-----	0-1	---	---	---	---	0	0	0	0
	1-5	20-26	30-45	6.1-7.3	0	0	0	0	0
	5-15	27-42	15-35	6.0-7.3	0	0	0	0	0
	15-29	27-42	15-35	6.0-7.3	0	0	0	0	0
	29-38	27-42	15-35	6.0-7.3	0	0	0	0	0
	38-44	27-42	15-35	6.0-7.3	0	0	0	0	0
	44-61	27-42	15-35	6.0-7.3	0	0	0	0	0
	61-72	27-42	15-35	6.0-7.3	0	0	0	0	0
643:									
Chinacamp gravelly loam-----	0-1	---	---	---	---	0	0	0	0
	1-5	20-26	30-45	6.1-7.3	0	0	0	0	0
	5-15	27-42	15-35	6.0-7.3	0	0	0	0	0
	15-29	27-42	15-35	6.0-7.3	0	0	0	0	0
	29-38	27-42	15-35	6.0-7.3	0	0	0	0	0
	38-44	27-42	15-35	6.0-7.3	0	0	0	0	0
	44-61	27-42	15-35	6.0-7.3	0	0	0	0	0
	61-72	27-42	15-35	6.0-7.3	0	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay Pct	Cation- exchange capacity meq/100g	Soil reaction pH	Calcium carbonate Pct	Gypsum Pct	Salinity dS/m	Sodium adsorption ratio
	In	Pct							
644: Chinacamp gravelly loam-----	0-1	---	---	---	---	0	0	0	0
	1-5	20-26	30-45	6.1-7.3	0	0	0	0	0
	5-15	27-42	15-35	6.0-7.3	0	0	0	0	0
	15-29	27-42	15-35	6.0-7.3	0	0	0	0	0
	29-38	27-42	15-35	6.0-7.3	0	0	0	0	0
	38-44	27-42	15-35	6.0-7.3	0	0	0	0	0
	44-61	27-42	15-35	6.0-7.3	0	0	0	0	0
	61-72	27-42	15-35	6.0-7.3	0	0	0	0	0
645: Chinacamp gravelly loam-----	0-1	---	---	---	---	0	0	0	0
	1-5	20-26	30-45	6.1-7.3	0	0	0	0	0
	5-15	27-42	15-35	6.0-7.3	0	0	0	0	0
	15-29	27-42	15-35	6.0-7.3	0	0	0	0	0
	29-38	27-42	15-35	6.0-7.3	0	0	0	0	0
	38-44	27-42	15-35	6.0-7.3	0	0	0	0	0
	44-61	27-42	15-35	6.0-7.3	0	0	0	0	0
	61-72	27-42	15-35	6.0-7.3	0	0	0	0	0
646: Coalcanyon taxadjunct very gravelly loam----	0-2	20-27	25-40	6.1-7.3	0	0	0	0	0
	2-6	23-35	20-32	6.1-7.3	0	0	0	0	0
	6-14	23-35	20-32	6.1-7.3	0	0	0	0	0
	14-24	23-35	20-32	6.1-7.3	0	0	0	0	0
	24-42	23-35	20-32	6.1-7.3	0	0	0	0	0
	42-54	30-50	20-30	6.1-7.3	0	0	0	0	0
	54-72	30-50	20-30	6.1-7.3	0	0	0	0	0
647: Coalcanyon taxadjunct very gravelly loam----	0-2	20-27	25-40	6.1-7.3	0	0	0	0	0
	2-6	23-35	20-32	6.1-7.3	0	0	0	0	0
	6-14	23-35	20-32	6.1-7.3	0	0	0	0	0
	14-24	23-35	20-32	6.1-7.3	0	0	0	0	0
	24-42	23-35	20-32	6.1-7.3	0	0	0	0	0
	42-54	30-50	20-30	6.1-7.3	0	0	0	0	0
	54-72	30-50	20-30	6.1-7.3	0	0	0	0	0
648: Coalcanyon taxadjunct very gravelly loam----	0-2	20-27	25-40	6.1-7.3	0	0	0	0	0
	2-6	23-35	20-32	6.1-7.3	0	0	0	0	0
	6-14	23-35	20-32	6.1-7.3	0	0	0	0	0
	14-24	23-35	20-32	6.1-7.3	0	0	0	0	0
	24-42	23-35	20-32	6.1-7.3	0	0	0	0	0
	42-54	30-50	20-30	6.1-7.3	0	0	0	0	0
	54-72	30-50	20-30	6.1-7.3	0	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
649:								
Coalcanyon taxadjunct very gravelly loam----	0-2	20-27	25-40	6.1-7.3	0	0	0	0
	2-6	23-35	20-32	6.1-7.3	0	0	0	0
	6-14	23-35	20-32	6.1-7.3	0	0	0	0
	14-24	23-35	20-32	6.1-7.3	0	0	0	0
	24-42	23-35	20-32	6.1-7.3	0	0	0	0
	42-54	30-50	20-30	6.1-7.3	0	0	0	0
	54-72	30-50	20-30	6.1-7.3	0	0	0	0
650:								
Schott very gravelly loam-----	0-2	---	---	---	0	0	0	0
	2-6	15-25	20-30	6.1-7.0	0	0	0	0
	6-13	18-35	15-25	5.1-6.5	0	0	0	0
	13-22	18-35	10-20	5.1-6.5	0	0	0	0
	22-40	18-35	10-20	5.1-6.5	0	0	0	0
	40-50	18-35	10-20	5.1-6.5	0	0	0	0
	50	---	---	---	0	0	0	0
651:								
Schott very gravelly loam-----	0-2	---	---	---	0	0	0	0
	2-6	15-25	20-30	6.1-7.0	0	0	0	0
	6-13	18-35	15-25	5.1-6.5	0	0	0	0
	13-22	18-35	10-20	5.1-6.5	0	0	0	0
	22-40	18-35	10-20	5.1-6.5	0	0	0	0
	40-50	18-35	10-20	5.1-6.5	0	0	0	0
	50	---	---	---	0	0	0	0
652:								
Schott very gravelly loam-----	0-2	---	---	---	0	0	0	0
	2-6	15-25	20-30	6.1-7.0	0	0	0	0
	6-13	18-35	15-25	5.1-6.5	0	0	0	0
	13-22	18-35	10-20	5.1-6.5	0	0	0	0
	22-40	18-35	10-20	5.1-6.5	0	0	0	0
	40-50	18-35	10-20	5.1-6.5	0	0	0	0
	50	---	---	---	0	0	0	0
Rock outcrop, mudflow breccia.								
654:								
Coridge bouldery loam-----	0-1	20-27	15-25	5.6-7.3	0	0	0	0
	1-6	25-35	15-25	6.1-7.3	0	0	0	0
	6-12	25-35	15-25	6.1-7.3	0	0	0	0
	12-19	25-35	15-25	6.1-7.3	0	0	0	0
	19-24	35-50	15-25	6.1-7.3	0	0	0	0
	24	---	---	---	0	0	0	0
Rock outcrop, Cohasset basalt.								

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m		
655:									
Coridge bouldery loam-----	0-1	20-27	15-25	5.6-7.3	0	0	0	0	
	1-6	25-35	15-25	6.1-7.3	0	0	0	0	
	6-12	25-35	15-25	6.1-7.3	0	0	0	0	
	12-19	25-35	15-25	6.1-7.3	0	0	0	0	
	19-24	35-50	15-25	6.1-7.3	0	0	0	0	
	24	---	---	---	0	0	0	0	
Rock outcrop, Cohasset basalt.									
656:									
Rock outcrop, basalt cliffs.									
Coalcanyon taxadjunct very gravelly loam----	0-2	20-27	25-40	6.1-7.3	0	0	0	0	
	2-6	23-35	20-32	6.1-7.3	0	0	0	0	
	6-14	23-35	20-32	6.1-7.3	0	0	0	0	
	14-24	23-35	20-32	6.1-7.3	0	0	0	0	
	24-42	23-35	20-32	6.1-7.3	0	0	0	0	
	42-54	30-50	20-30	6.1-7.3	0	0	0	0	
	54-72	30-50	20-30	6.1-7.3	0	0	0	0	
657:									
Bonneyridge sandy loam-----	0-1	---	---	---	0	0	0	0	
	1-3	5-15	7.9-28	5.6-7.3	0	0	0	0	
	3-6	5-15	7.9-28	5.6-7.3	0	0	0	0	
	6-16	5-18	4.5-24	5.1-6.5	0	0	0	0	
	16-22	5-18	4.5-24	5.1-6.5	0	0	0	0	
	22-31	5-18	4.5-24	5.1-6.5	0	0	0	0	
	31-39	5-18	4.5-24	5.1-6.5	0	0	0	0	
	39-56	5-10	2.9-7.6	5.1-6.0	0	0	0	0	
	56-76	5-10	2.9-7.6	5.1-6.0	0	0	0	0	
Chawanakee gravelly sandy loam-----	0-1	---	---	---	0	0	0	0	
	1-2	---	---	---	0	0	0	0	
	2-5	2-6	8.0-15	5.6-6.5	0	0	0	0	
	5-11	2-6	2.0-10	5.1-6.5	0	0	0	0	
	11-19	2-6	2.0-10	5.1-6.5	0	0	0	0	
	19	---	---	---	0	0	0	0	
Rock outcrop, quartz diorite.									

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
658:								
Bonneyridge sandy loam-----	0-1	---	---	---	0	0	0	0
	1-3	5-15	7.9-28	5.6-7.3	0	0	0	0
	3-6	5-15	7.9-28	5.6-7.3	0	0	0	0
	6-16	5-18	4.5-24	5.1-6.5	0	0	0	0
	16-22	5-18	4.5-24	5.1-6.5	0	0	0	0
	22-31	5-18	4.5-24	5.1-6.5	0	0	0	0
	31-39	5-18	4.5-24	5.1-6.5	0	0	0	0
	39-56	5-10	2.9-7.6	5.1-6.0	0	0	0	0
	56-76	5-10	2.9-7.6	5.1-6.0	0	0	0	0
Chawanakee gravelly sandy loam-----	0-1	---	---	---	0	0	0	0
	1-2	---	---	---	0	0	0	0
	2-5	2-6	8.0-15	5.6-6.5	0	0	0	0
	5-11	2-6	2.0-10	5.1-6.5	0	0	0	0
	11-19	2-6	2.0-10	5.1-6.5	0	0	0	0
	19	---	---	---	0	0	0	0
Rock outcrop, quartz diorite.								
659:								
Bonneyridge sandy loam-----	0-1	---	---	---	0	0	0	0
	1-3	5-15	7.9-28	5.6-7.3	0	0	0	0
	3-6	5-15	7.9-28	5.6-7.3	0	0	0	0
	6-16	5-18	4.5-24	5.1-6.5	0	0	0	0
	16-22	5-18	4.5-24	5.1-6.5	0	0	0	0
	22-31	5-18	4.5-24	5.1-6.5	0	0	0	0
	31-39	5-18	4.5-24	5.1-6.5	0	0	0	0
	39-56	5-10	2.9-7.6	5.1-6.0	0	0	0	0
	56-76	5-10	2.9-7.6	5.1-6.0	0	0	0	0
Chawanakee gravelly sandy loam-----	0-1	---	---	---	0	0	0	0
	1-2	---	---	---	0	0	0	0
	2-5	2-6	8.0-15	5.6-6.5	0	0	0	0
	5-11	2-6	2.0-10	5.1-6.5	0	0	0	0
	11-19	2-6	2.0-10	5.1-6.5	0	0	0	0
	19	---	---	---	0	0	0	0
Rock outcrop, quartz diorite.								

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
660:								
Bonneyr ridge sandy loam-----	0-1	---	---	---	0	0	0	0
	1-3	5-15	7.9-28	5.6-7.3	0	0	0	0
	3-6	5-15	7.9-28	5.6-7.3	0	0	0	0
	6-16	5-18	4.5-24	5.1-6.5	0	0	0	0
	16-22	5-18	4.5-24	5.1-6.5	0	0	0	0
	22-31	5-18	4.5-24	5.1-6.5	0	0	0	0
	31-39	5-18	4.5-24	5.1-6.5	0	0	0	0
	39-56	5-10	2.9-7.6	5.1-6.0	0	0	0	0
	56-76	5-10	2.9-7.6	5.1-6.0	0	0	0	0
Chawanakee gravelly sandy loam-----	0-1	---	---	---	0	0	0	0
	1-2	---	---	---	0	0	0	0
	2-5	2-6	8.0-15	5.6-6.5	0	0	0	0
	5-11	2-6	2.0-10	5.1-6.5	0	0	0	0
	11-19	2-6	2.0-10	5.1-6.5	0	0	0	0
	19	---	---	---	0	0	0	0
Rock outcrop, quartz diorite.								
661:								
Millerridge gravelly sandy clay loam-----	0-2	20-27	10-20	6.1-7.0	0	0	0	0
	2-6	27-35	5.0-15	6.1-7.0	0	0	0	0
	6-12	27-35	5.0-15	6.1-7.0	0	0	0	0
	12-20	30-50	5.0-15	6.1-7.0	0	0	0	0
	20-26	30-50	5.0-15	6.1-7.0	0	0	0	0
	26	---	---	---	0	0	0	0
Boxrobber cobbly sandy clay loam-----	0-2	22-30	10-20	6.1-7.3	0	0	0	0
	2-8	27-35	5.0-15	6.1-7.3	0	0	0	0
	8-16	27-35	5.0-15	6.1-7.3	0	0	0	0
	16-30	---	---	---	0	0	0	0
	30	---	---	---	0	0	0	0
662:								
Millerridge gravelly sandy clay loam-----	0-2	20-27	10-20	6.1-7.0	0	0	0	0
	2-6	27-35	5.0-15	6.1-7.0	0	0	0	0
	6-12	27-35	5.0-15	6.1-7.0	0	0	0	0
	12-20	30-50	5.0-15	6.1-7.0	0	0	0	0
	20-26	30-50	5.0-15	6.1-7.0	0	0	0	0
	26	---	---	---	0	0	0	0
Boxrobber cobbly sandy clay loam-----	0-2	22-30	10-20	6.1-7.3	0	0	0	0
	2-8	27-35	5.0-15	6.1-7.3	0	0	0	0
	8-16	27-35	5.0-15	6.1-7.3	0	0	0	0
	16-30	---	---	---	0	0	0	0
	30	---	---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
663:								
Millerridge gravelly sandy clay loam-----	0-2	20-27	10-20	6.1-7.0	0	0	0	0
	2-6	27-35	5.0-15	6.1-7.0	0	0	0	0
	6-12	27-35	5.0-15	6.1-7.0	0	0	0	0
	12-20	30-50	5.0-15	6.1-7.0	0	0	0	0
	20-26	30-50	5.0-15	6.1-7.0	0	0	0	0
	26	---	---	---	0	0	0	0
Boxrobber cobbly sandy clay loam-----	0-2	22-30	10-20	6.1-7.3	0	0	0	0
	2-8	27-35	5.0-15	6.1-7.3	0	0	0	0
	8-16	27-35	5.0-15	6.1-7.3	0	0	0	0
	16-30	---	---	---	0	0	0	0
	30	---	---	---	0	0	0	0
664:								
Millerridge gravelly sandy clay loam-----	0-2	20-27	10-20	6.1-7.0	0	0	0	0
	2-6	27-35	5.0-15	6.1-7.0	0	0	0	0
	6-12	27-35	5.0-15	6.1-7.0	0	0	0	0
	12-20	30-50	5.0-15	6.1-7.0	0	0	0	0
	20-26	30-50	5.0-15	6.1-7.0	0	0	0	0
	26	---	---	---	0	0	0	0
Boxrobber cobbly sandy clay loam-----	0-2	22-30	10-20	6.1-7.3	0	0	0	0
	2-8	27-35	5.0-15	6.1-7.3	0	0	0	0
	8-16	27-35	5.0-15	6.1-7.3	0	0	0	0
	16-30	---	---	---	0	0	0	0
	30	---	---	---	0	0	0	0
665:								
Surnuf gravelly loam-----	0-1	---	---	---	0	0	0	0
	1-4	22-30	20-32	6.1-7.3	0	0	0	0
	4-9	27-40	15-30	6.1-7.3	0	0	0	0
	9-16	27-40	15-30	6.1-7.3	0	0	0	0
	16-27	35-55	15-30	6.1-7.3	0	0	0	0
	27-29	35-55	15-30	6.1-7.3	0	0	0	0
	29-56	35-55	15-30	5.6-7.0	0	0	0	0
	56-72	35-55	15-30	5.6-7.0	0	0	0	0
Bigridge loam-----	0-1	---	---	---	0	0	0	0
	1-5	15-25	8.1-14	5.6-7.3	0	0	0	0
	5-9	19-30	8.6-16	5.6-7.3	0	0	0	0
	9-15	18-35	8.3-19	4.5-7.3	0	0	0	0
	15-20	18-35	8.0-19	4.5-6.5	0	0	0	0
	20-27	15-35	7.8-19	4.5-6.5	0	0	0	0
	27-36	15-35	5.8-19	4.5-6.5	0	0	0	0
	36-51	15-35	7.7-19	4.5-6.5	0	0	0	0
	51-62	---	---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
666:								
Surnuf gravelly loam-----	0-1	---	---	---	0	0	0	0
	1-4	22-30	20-32	6.1-7.3	0	0	0	0
	4-9	27-40	15-30	6.1-7.3	0	0	0	0
	9-16	27-40	15-30	6.1-7.3	0	0	0	0
	16-27	35-55	15-30	6.1-7.3	0	0	0	0
	27-29	35-55	15-30	6.1-7.3	0	0	0	0
	29-56	35-55	15-30	5.6-7.0	0	0	0	0
	56-72	35-55	15-30	5.6-7.0	0	0	0	0
Bigridge loam-----	0-1	---	---	---	0	0	0	0
	1-5	15-25	8.1-14	5.6-7.3	0	0	0	0
	5-9	19-30	8.6-16	5.6-7.3	0	0	0	0
	9-15	18-35	8.3-19	4.5-7.3	0	0	0	0
	15-20	18-35	8.0-19	4.5-6.5	0	0	0	0
	20-27	15-35	7.8-19	4.5-6.5	0	0	0	0
	27-36	15-35	5.8-19	4.5-6.5	0	0	0	0
	36-51	15-35	7.7-19	4.5-6.5	0	0	0	0
	51-62	---	---	---	0	0	0	0
667:								
Surnuf gravelly loam-----	0-1	---	---	---	0	0	0	0
	1-4	22-30	20-32	6.1-7.3	0	0	0	0
	4-9	27-40	15-30	6.1-7.3	0	0	0	0
	9-16	27-40	15-30	6.1-7.3	0	0	0	0
	16-27	35-55	15-30	6.1-7.3	0	0	0	0
	27-29	35-55	15-30	6.1-7.3	0	0	0	0
	29-56	35-55	15-30	5.6-7.0	0	0	0	0
	56-72	35-55	15-30	5.6-7.0	0	0	0	0
Bigridge loam-----	0-1	---	---	---	0	0	0	0
	1-5	15-25	8.1-14	5.6-7.3	0	0	0	0
	5-9	19-30	8.6-16	5.6-7.3	0	0	0	0
	9-15	18-35	8.3-19	4.5-7.3	0	0	0	0
	15-20	18-35	8.0-19	4.5-6.5	0	0	0	0
	20-27	15-35	7.8-19	4.5-6.5	0	0	0	0
	27-36	15-35	5.8-19	4.5-6.5	0	0	0	0
	36-51	15-35	7.7-19	4.5-6.5	0	0	0	0
	51-62	---	---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay Pct	Cation- exchange capacity meq/100g	Soil reaction pH	Calcium carbonate Pct	Gypsum Pct	Salinity dS/m	Sodium adsorption ratio
	In	Pct							
668:									
Surnuf gravelly loam-----	0-1	---	---	---	---	0	0	0	0
	1-4	22-30	20-32	6.1-7.3	6.1-7.3	0	0	0	0
	4-9	27-40	15-30	6.1-7.3	6.1-7.3	0	0	0	0
	9-16	27-40	15-30	6.1-7.3	6.1-7.3	0	0	0	0
	16-27	35-55	15-30	6.1-7.3	6.1-7.3	0	0	0	0
	27-29	35-55	15-30	6.1-7.3	6.1-7.3	0	0	0	0
	29-56	35-55	15-30	5.6-7.0	5.6-7.0	0	0	0	0
	56-72	35-55	15-30	5.6-7.0	5.6-7.0	0	0	0	0
Bigridge loam-----									
	0-1	---	---	---	---	0	0	0	0
	1-5	15-25	8.1-14	5.6-7.3	5.6-7.3	0	0	0	0
	5-9	19-30	8.6-16	5.6-7.3	5.6-7.3	0	0	0	0
	9-15	18-35	8.3-19	4.5-7.3	4.5-7.3	0	0	0	0
	15-20	18-35	8.0-19	4.5-6.5	4.5-6.5	0	0	0	0
	20-27	15-35	7.8-19	4.5-6.5	4.5-6.5	0	0	0	0
	27-36	15-35	5.8-19	4.5-6.5	4.5-6.5	0	0	0	0
	36-51	15-35	7.7-19	4.5-6.5	4.5-6.5	0	0	0	0
	51-62	---	---	---	---	0	0	0	0
669:									
Oroshore gravelly loam-----	0-2	20-27	20-40	5.8-7.0	5.8-7.0	0	0	0	0
	2-15	27-39	20-40	5.6-7.0	5.6-7.0	0	0	0	0
	15-28	27-39	20-40	5.6-7.0	5.6-7.0	0	0	0	0
	28-34	27-39	20-40	5.6-7.0	5.6-7.0	0	0	0	0
	34	---	---	---	---	0	0	0	0
Mounthope loam-----									
	0-1	---	---	---	---	0	0	0	0
	1-3	17-25	14-21	5.6-7.3	5.6-7.3	0	0	0	0
	3-7	20-27	17-23	5.6-6.5	5.6-6.5	0	0	0	0
	7-15	20-27	17-24	5.6-6.5	5.6-6.5	0	0	0	0
	15-22	27-35	22-28	5.6-6.5	5.6-6.5	0	0	0	0
	22-26	27-35	21-29	5.6-6.5	5.6-6.5	0	0	0	0
	26-31	27-35	21-32	5.6-6.5	5.6-6.5	0	0	0	0
	31-42	27-35	20-32	5.6-6.5	5.6-6.5	0	0	0	0
	42-52	20-35	13-28	5.6-6.5	5.6-6.5	0	0	0	0
	52	---	---	---	---	0	0	0	0
Dunstone gravelly loam-----									
	0-4	12-20	16-29	6.0-6.5	6.0-6.5	0	0	0	0
	4-6	14-22	9.0-18	6.0-6.5	6.0-6.5	0	0	0	0
	6-10	15-27	11-18	5.8-7.0	5.8-7.0	0	0	0	0
	10-15	18-35	11-18	5.8-7.0	5.8-7.0	0	0	0	0
	15-37	---	---	---	---	0	0	0	0
	37	---	---	---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
670:								
Oroshore gravelly loam-----	0-2	20-27	20-40	5.8-7.0	0	0	0	0
	2-15	27-39	20-40	5.6-7.0	0	0	0	0
	15-28	27-39	20-40	5.6-7.0	0	0	0	0
	28-34	27-39	20-40	5.6-7.0	0	0	0	0
	34	---	---	---	0	0	0	0
Mounthope loam-----	0-1	---	---	---	0	0	0	0
	1-3	17-25	14-21	5.6-7.3	0	0	0	0
	3-7	20-27	17-23	5.6-6.5	0	0	0	0
	7-15	20-27	17-24	5.6-6.5	0	0	0	0
	15-22	27-35	22-28	5.6-6.5	0	0	0	0
	22-26	27-35	21-29	5.6-6.5	0	0	0	0
	26-31	27-35	21-32	5.6-6.5	0	0	0	0
	31-42	27-35	20-32	5.6-6.5	0	0	0	0
	42-52	20-35	13-28	5.6-6.5	0	0	0	0
	52	---	---	---	0	0	0	0
Dunstone gravelly loam-----	0-4	12-20	16-29	6.0-6.5	0	0	0	0
	4-6	14-22	9.0-18	6.0-6.5	0	0	0	0
	6-10	15-27	11-18	5.8-7.0	0	0	0	0
	10-15	18-35	11-18	5.8-7.0	0	0	0	0
	15-37	---	---	---	0	0	0	0
	37	---	---	---	0	0	0	0
671:								
Oroshore gravelly loam-----	0-2	20-27	20-40	5.8-7.0	0	0	0	0
	2-15	27-39	20-40	5.6-7.0	0	0	0	0
	15-28	27-39	20-40	5.6-7.0	0	0	0	0
	28-34	27-39	20-40	5.6-7.0	0	0	0	0
	34	---	---	---	0	0	0	0
Mounthope loam-----	0-1	---	---	---	0	0	0	0
	1-3	17-25	14-21	5.6-7.3	0	0	0	0
	3-7	20-27	17-23	5.6-6.5	0	0	0	0
	7-15	20-27	17-24	5.6-6.5	0	0	0	0
	15-22	27-35	22-28	5.6-6.5	0	0	0	0
	22-26	27-35	21-29	5.6-6.5	0	0	0	0
	26-31	27-35	21-32	5.6-6.5	0	0	0	0
	31-42	27-35	20-32	5.6-6.5	0	0	0	0
	42-52	20-35	13-28	5.6-6.5	0	0	0	0
	52	---	---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
671:								
Dunstone gravelly loam-----	0-4	12-20	16-29	6.0-6.5	0	0	0	0
	4-6	14-22	9.0-18	6.0-6.5	0	0	0	0
	6-10	15-27	11-18	5.8-7.0	0	0	0	0
	10-15	18-35	11-18	5.8-7.0	0	0	0	0
	15-37	---	---	---	0	0	0	0
	37	---	---	---	0	0	0	0
672:								
Oroshore gravelly loam-----	0-2	20-27	20-40	5.8-7.0	0	0	0	0
	2-15	27-39	20-40	5.6-7.0	0	0	0	0
	15-28	27-39	20-40	5.6-7.0	0	0	0	0
	28-34	27-39	20-40	5.6-7.0	0	0	0	0
	34	---	---	---	0	0	0	0
Mounthope loam-----	0-1	---	---	---	0	0	0	0
	1-3	17-25	14-21	5.6-7.3	0	0	0	0
	3-7	20-27	17-23	5.6-6.5	0	0	0	0
	7-15	20-27	17-24	5.6-6.5	0	0	0	0
	15-22	27-35	22-28	5.6-6.5	0	0	0	0
	22-26	27-35	21-29	5.6-6.5	0	0	0	0
	26-31	27-35	21-32	5.6-6.5	0	0	0	0
	31-42	27-35	20-32	5.6-6.5	0	0	0	0
	42-52	20-35	13-28	5.6-6.5	0	0	0	0
	52	---	---	---	0	0	0	0
Dunstone gravelly loam-----	0-4	12-20	16-29	6.0-6.5	0	0	0	0
	4-6	14-22	9.0-18	6.0-6.5	0	0	0	0
	6-10	15-27	11-18	5.8-7.0	0	0	0	0
	10-15	18-35	11-18	5.8-7.0	0	0	0	0
	15-37	---	---	---	0	0	0	0
	37	---	---	---	0	0	0	0
674:								
Chawanakee gravelly sandy loam-----	0-1	---	---	---	0	0	0	0
	1-2	---	---	---	0	0	0	0
	2-5	2-6	8.0-15	5.6-6.5	0	0	0	0
	5-11	2-6	2.0-10	5.1-6.5	0	0	0	0
	11-19	2-6	2.0-10	5.1-6.5	0	0	0	0
	19	---	---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m		
674:									
Bonneyr ridge sandy loam-----	0-1	---	---	---	0	0	0	0	0
	1-3	5-15	7.9-28	5.6-7.3	0	0	0	0	0
	3-6	5-15	7.9-28	5.6-7.3	0	0	0	0	0
	6-16	5-18	4.5-24	5.1-6.5	0	0	0	0	0
	16-22	5-18	4.5-24	5.1-6.5	0	0	0	0	0
	22-31	5-18	4.5-24	5.1-6.5	0	0	0	0	0
	31-39	5-18	4.5-24	5.1-6.5	0	0	0	0	0
	39-56	5-10	2.9-7.6	5.1-6.0	0	0	0	0	0
	56-76	5-10	2.9-7.6	5.1-6.0	0	0	0	0	0
Rock outcrop, quartz diorite.									
675:									
Clearhayes sandy clay loam-----	0-2	18-27	20-35	6.1-7.8	0	0	0.0-0.5	0	0
	2-10	17-35	20-30	6.6-8.5	0	0	0.0-0.5	0	0
	10-19	17-35	20-30	6.6-8.5	0	0	0.0-0.5	0	0
	19-28	2-30	1.0-10	7.4-8.5	0-1	0	0.0-0.5	0	0
	28-38	2-30	1.0-10	7.4-8.5	0-1	0	0.0-0.5	0	0
	38-46	2-30	1.0-10	7.4-8.5	0-1	0	0.0-0.5	0	0
	46	---	---	---	---	---	---	---	---
Hamslough clay-----	0-3	40-60	40-50	6.6-7.8	0	0	0.0-0.5	0	0
	3-14	40-60	40-50	6.6-7.8	0	0	0.0-0.5	0	0
	14-19	40-60	40-50	7.4-8.4	0-5	0	0.0-0.5	0	0
	19-27	30-60	30-50	7.9-8.5	0-15	0	0.0-0.5	0	0
	27	---	---	---	0	0	0.0-5.0	0	0
676:									
Carhart clay-----	0-2	40-59	40-50	6.6-7.8	0	0	0.0-0.5	0	0
	2-12	40-59	40-50	6.6-8.5	0	0	0.0-0.5	0	0
	12-24	40-59	40-50	6.6-8.5	0-5	0	0.0-0.5	0	0
	24-30	40-59	40-50	6.6-8.5	0-15	0	0.0-0.5	0	0
	30	---	---	---	---	---	---	---	---
Anita taxadjunct clay-----	0-2	40-60	40-50	6.3-8.0	0	0	0.0-0.5	0	0
	2-6	40-60	40-50	6.5-8.5	0	0	0.0-0.5	0	0
	6-11	40-60	40-50	6.5-8.5	0	0	0.0-0.5	0	0
	11	---	---	---	---	---	---	---	---

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m		
677:									
Tuscan gravelly loam-----	0-2	20-27	15-30	6.1-7.3	0	0	0	0	
	2-4	30-55	15-30	6.6-7.8	0	0	0.0-0.5	0	
	4-7	30-55	15-30	6.6-7.8	0	0	0.0-0.5	0	
	7-11	30-55	15-30	6.6-7.8	0	0	0.0-0.5	0	
	11	---	---	---	0	0	0	0	
Fallager loam-----	0-1	20-30	15-25	6.1-6.5	0	0	0	0	
	1-3	35-40	15-25	6.1-7.3	0	0	0	0	
	3-7	40-60	15-25	6.6-8.4	0	0	0.0-0.5	0	
	7	---	---	---	0	0	0	0	
Anita, gravelly duripan-----	0-3	40-60	40-50	6.3-8.0	0	0	0.0-0.5	0	
	3-8	40-60	40-50	6.3-8.0	0	0	0.0-0.5	0	
	8-15	40-60	40-50	6.3-8.0	0	0	0.0-0.5	0	
	15	---	---	---	0-1	0	0	0	
679:									
Lucksev loam-----	0-2	22-35	15-30	6.1-7.3	0	0	0	0	
	2-7	30-50	15-30	6.6-7.8	0	0	0	0	
	7-15	30-50	15-30	6.6-7.8	0	0	0	0	
	15	---	---	---	0	0	0	0	
Butteside gravelly loam-----	0-2	22-38	15-30	6.1-7.8	0	0	0	0	
	2-8	30-50	15-30	6.1-8.5	0	0	0	0	
	8-13	30-50	15-30	6.1-8.5	0	0	0	0	
	13-27	30-50	15-30	6.1-8.5	0	0	0	0	
	27	---	---	---	0	0	0	0	
Carhart clay-----	0-2	40-59	40-50	6.6-7.8	0	0	0.0-0.5	0	
	2-12	40-59	40-50	6.6-8.5	0	0	0.0-0.5	0	
	12-24	40-59	40-50	6.6-8.5	0-5	0	0.0-0.5	0	
	24-30	40-59	40-50	6.6-8.5	0-15	0	0.0-0.5	0	
	30	---	---	---	---	---	---	---	
680:									
Lucksev loam-----	0-2	22-35	15-30	6.1-7.3	0	0	0	0	
	2-7	30-50	15-30	6.6-7.8	0	0	0	0	
	7-15	30-50	15-30	6.6-7.8	0	0	0	0	
	15	---	---	---	0	0	0	0	
Butteside gravelly loam-----	0-2	22-38	15-30	6.1-7.8	0	0	0	0	
	2-8	30-50	15-30	6.1-8.5	0	0	0	0	
	8-13	30-50	15-30	6.1-8.5	0	0	0	0	
	13-27	30-50	15-30	6.1-8.5	0	0	0	0	
	27	---	---	---	0	0	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay Cation- exchange capacity	Soil reaction pH	Calcium carbonate Pct	Gypsum Pct	Salinity dS/m	Sodium adsorption ratio
	In	Pct						
683:								
Typic Haploxeralfs, magnesian, low elevation	0-3	22-32	15-25	6.6-7.8	0	0	0	0
	3-10	27-65	15-35	6.6-7.8	0	0	0	0
	10-21	27-65	15-35	6.6-7.8	0	0	0	0
	21-30	27-65	15-35	6.6-7.8	0	0	0	0
	30	---	---	---	0	0	0	0
Earlial very gravelly loam-----	0-3	20-27	10-20	6.6-7.3	0	0	0	0
	3-7	30-40	5.0-15	6.6-7.3	0	0	0	0
	7-14	30-40	5.0-15	6.6-7.3	0	0	0	0
	14	---	---	---	0	0	0	0
Rock outcrop, serpentinite.								
684:								
Typic Haploxeralfs, magnesian, low elevation	0-3	22-32	15-25	6.6-7.8	0	0	0	0
	3-10	27-65	15-35	6.6-7.8	0	0	0	0
	10-21	27-65	15-35	6.6-7.8	0	0	0	0
	21-30	27-65	15-35	6.6-7.8	0	0	0	0
	30	---	---	---	0	0	0	0
Earlial very gravelly loam-----	0-3	20-27	10-20	6.6-7.3	0	0	0	0
	3-7	30-40	5.0-15	6.6-7.3	0	0	0	0
	7-14	30-40	5.0-15	6.6-7.3	0	0	0	0
	14	---	---	---	0	0	0	0
Rock outcrop, serpentinite.								
685:								
Bosquejo taxadjunct, gravelly substratum----	0-3	40-60	40-50	6.5-7.5	0	0	0	0
	3-8	40-60	40-50	6.5-7.5	0	0	0	0
	8-17	40-60	40-50	7.0-8.0	0	0	0	0
	17-27	40-60	40-50	7.0-8.0	0	0	0	0
	27-33	20-55	20-35	7.0-8.5	0	0	0	0
	33-41	20-55	20-35	7.0-8.5	0	0	0	0
	41-55	20-55	20-35	7.0-8.5	0	0	0	0
	55-70	15-40	15-25	7.0-8.5	0	0	0	0
	70-81	15-40	15-25	7.0-8.5	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
686:								
Redsluff taxadjunct clay loam-----	0-4	27-35	20-35	6.5-6.8	0	0	0	0
	4-10	27-45	18-30	6.5-7.8	0	0	0	0
	10-21	27-45	18-30	6.5-7.8	0	0	0	0
	21-32	27-45	18-30	6.5-7.8	0	0	0	0
	32-42	27-45	18-30	6.5-7.8	0	0	0	0
	42-53	2-36	1.0-25	6.5-8.0	0	0	0	0
	53-68	2-36	1.0-25	6.5-8.0	0	0	0	0
	68-75	2-36	1.0-25	6.5-8.0	0	0	0	0
	75-80	---	---	---	0	0	0	0
687:								
Xerorthents, shallow-----	0-2	18-35	15-30	6.6-7.8	0	0	0	0
	2-5	23-42	15-30	6.1-7.8	0	0	0	0
	5-8	23-42	15-30	6.1-7.8	0	0	0	0
	8	---	---	---	0	0	0	0
Typic Haploxeralfs gravelly loam-----	0-2	20-30	15-30	6.1-7.8	0	0	0	0
	2-8	27-50	15-30	6.6-7.8	0	0	0	0
	8-16	27-50	15-30	6.6-7.8	0	0	0	0
	16-27	27-50	15-30	6.6-7.8	0	0	0	0
	27-40	27-50	15-30	6.6-7.8	0	0	0	0
	40	---	---	---	0	0	0	0
700:								
Retsongulch very gravelly sandy loam-----	0-1	---	---	---	0	0	0	0
	1-3	10-22	10-20	5.6-6.5	0	0	0	0
	3-12	12-26	5.0-15	4.5-6.5	0	0	0	0
	12-21	12-26	5.0-15	4.5-6.5	0	0	0	0
	21-30	12-26	5.0-15	4.5-6.5	0	0	0	0
	30	---	---	---	0	0	0	0
Flumewall gravelly sandy loam-----	0-0.5	---	---	---	0	0	0	0
	0.5-2	12-20	10-20	5.6-6.5	0	0	0	0
	2-7	14-27	10-20	5.1-6.5	0	0	0	0
	7-18	14-27	10-20	5.1-6.5	0	0	0	0
	18	---	---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay Pct	Cation- exchange capacity meq/100g	Soil reaction pH	Calcium carbonate Pct	Gypsum Pct	Salinity dS/m	Sodium adsorption ratio
	In	Pct							
701:									
Powellton gravelly loam-----	0-0.5	---	---	---	---	0	0	0	0
	0.5-2	---	---	---	---	0	0	0	0
	2-4	18-27	20-30	5.6-6.5	0	0	0	0	0
	4-9	22-35	8.0-25	4.5-6.5	0	0	0	0	0
	9-15	22-35	8.0-25	4.5-6.5	0	0	0	0	0
	15-24	22-35	8.0-25	4.5-6.5	0	0	0	0	0
	24-30	22-35	8.0-25	4.5-6.5	0	0	0	0	0
	30-41	17-30	4.0-10	4.5-6.0	0	0	0	0	0
	41-61	17-30	4.0-10	4.5-6.0	0	0	0	0	0
	61-83	17-30	4.0-10	4.5-6.0	0	0	0	0	0
Obstruction gravelly sandy loam-----	0-4	---	---	---	0	0	0	0	0
	4-7	10-20	15-20	5.6-6.5	0	0	0	0	0
	7-10	12-25	8.0-13	5.1-6.5	0	0	0	0	0
	10-18	12-25	8.0-13	5.1-6.5	0	0	0	0	0
	18-25	12-25	8.0-13	5.1-6.5	0	0	0	0	0
	25-33	12-25	8.0-13	5.1-6.5	0	0	0	0	0
	33-44	5-20	6.0-11	4.5-6.5	0	0	0	0	0
	44-64	5-20	6.0-11	4.5-6.5	0	0	0	0	0
	64-84	5-20	6.0-11	4.5-6.5	0	0	0	0	0
	84	---	---	---	0	0	0	0	0
702:									
Cerpone gravelly loam-----	0-1	---	---	---	0	0	0	0	0
	1-2	---	---	---	0	0	0	0	0
	2-4	16-22	10-20	5.6-6.5	0	0	0	0	0
	4-9	20-27	5.0-15	5.6-6.5	0	0	0	0	0
	9-17	20-27	5.0-15	5.6-6.5	0	0	0	0	0
	17-26	25-35	5.0-15	6.1-7.3	0	0	0	0	0
	26-41	25-35	5.0-15	6.1-7.3	0	0	0	0	0
	41-57	25-35	5.0-15	6.1-7.3	0	0	0	0	0
	57	---	---	---	0	0	0	0	0
Typic Haploxeralfs, magnesian, very gravelly loam-----	0-3	22-32	15-25	6.6-7.3	0	0	0	0	0
	3-7	27-45	15-30	6.6-7.8	0	0	0	0	0
	7-12	27-45	15-30	6.6-7.8	0	0	0	0	0
	12-18	27-45	15-30	6.6-7.8	0	0	0	0	0
	18-24	27-45	15-30	6.6-7.8	0	0	0	0	0
	24-32	35-50	18-30	6.6-7.8	0	0	0	0	0
	32-42	35-50	18-30	6.6-7.8	0	0	0	0	0
	42-54	35-50	18-30	6.6-7.8	0	0	0	0	0
	54	---	---	---	0	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay Pct	Cation- exchange capacity meq/100g	Soil reaction pH	Calcium carbonate Pct	Gypsum Pct	Salinity dS/m	Sodium adsorption ratio
	In	Pct							
702:									
Earlal very gravelly loam-----	0-3	20-27		10-20	6.6-7.3	0	0	0	0
	3-7	30-40		5.0-15	6.6-7.3	0	0	0	0
	7-14	30-40		5.0-15	6.6-7.3	0	0	0	0
	14	---		---	---	0	0	0	0
703:									
Cerpone gravelly loam-----	0-1	---		---	---	0	0	0	0
	1-2	---		---	---	0	0	0	0
	2-4	16-22		10-20	5.6-6.5	0	0	0	0
	4-9	20-27		5.0-15	5.6-6.5	0	0	0	0
	9-17	20-27		5.0-15	5.6-6.5	0	0	0	0
	17-26	25-35		5.0-15	6.1-7.3	0	0	0	0
	26-41	25-35		5.0-15	6.1-7.3	0	0	0	0
	41-57	25-35		5.0-15	6.1-7.3	0	0	0	0
	57	---		---	---	0	0	0	0
Typic Haploxeralfs, magnesian, very gravelly loam-----									
	0-3	22-32		15-25	6.6-7.3	0	0	0	0
	3-7	27-45		15-30	6.6-7.8	0	0	0	0
	7-12	27-45		15-30	6.6-7.8	0	0	0	0
	12-18	27-45		15-30	6.6-7.8	0	0	0	0
	18-24	27-45		15-30	6.6-7.8	0	0	0	0
	24-32	35-50		18-30	6.6-7.8	0	0	0	0
	32-42	35-50		18-30	6.6-7.8	0	0	0	0
	42-54	35-50		18-30	6.6-7.8	0	0	0	0
	54	---		---	---	0	0	0	0
Earlal very gravelly loam-----									
	0-3	20-27		10-20	6.6-7.3	0	0	0	0
	3-7	30-40		5.0-15	6.6-7.3	0	0	0	0
	7-14	30-40		5.0-15	6.6-7.3	0	0	0	0
	14	---		---	---	0	0	0	0
Rock outcrop, serpentinite.									
704:									
Typic Haploxeralfs, magnesian, very gravelly loam-----									
	0-3	22-32		15-25	6.6-7.3	0	0	0	0
	3-7	27-45		15-30	6.6-7.8	0	0	0	0
	7-12	27-45		15-30	6.6-7.8	0	0	0	0
	12-18	27-45		15-30	6.6-7.8	0	0	0	0
	18-24	27-45		15-30	6.6-7.8	0	0	0	0
	24-32	35-50		18-30	6.6-7.8	0	0	0	0
	32-42	35-50		18-30	6.6-7.8	0	0	0	0
	42-54	35-50		18-30	6.6-7.8	0	0	0	0
	54	---		---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct		meq/100g	pH	Pct	Pct	dS/m	
704:									
Earlal very gravelly loam-----	0-3	20-27		10-20	6.6-7.3	0	0	0	0
	3-7	30-40		5.0-15	6.6-7.3	0	0	0	0
	7-14	30-40		5.0-15	6.6-7.3	0	0	0	0
	14	---		---	---	0	0	0	0
Cerpone gravelly loam-----	0-1	---		---	---	0	0	0	0
	1-2	---		---	---	0	0	0	0
	2-4	16-22		10-20	5.6-6.5	0	0	0	0
	4-9	20-27		5.0-15	5.6-6.5	0	0	0	0
	9-17	20-27		5.0-15	5.6-6.5	0	0	0	0
	17-26	25-35		5.0-15	6.1-7.3	0	0	0	0
	26-41	25-35		5.0-15	6.1-7.3	0	0	0	0
	41-57	25-35		5.0-15	6.1-7.3	0	0	0	0
	57	---		---	---	0	0	0	0
Rock outcrop, serpentinite.									
705:									
Typic Haploxeralfs, magnesian, very gravelly loam-----	0-3	22-32		15-25	6.6-7.3	0	0	0	0
	3-7	27-45		15-30	6.6-7.8	0	0	0	0
	7-12	27-45		15-30	6.6-7.8	0	0	0	0
	12-18	27-45		15-30	6.6-7.8	0	0	0	0
	18-24	27-45		15-30	6.6-7.8	0	0	0	0
	24-32	35-50		18-30	6.6-7.8	0	0	0	0
	32-42	35-50		18-30	6.6-7.8	0	0	0	0
	42-54	35-50		18-30	6.6-7.8	0	0	0	0
	54	---		---	---	0	0	0	0
Earlal very gravelly loam-----	0-3	20-27		10-20	6.6-7.3	0	0	0	0
	3-7	30-40		5.0-15	6.6-7.3	0	0	0	0
	7-14	30-40		5.0-15	6.6-7.3	0	0	0	0
	14	---		---	---	0	0	0	0
Cerpone gravelly loam-----	0-1	---		---	---	0	0	0	0
	1-2	---		---	---	0	0	0	0
	2-4	16-22		10-20	5.6-6.5	0	0	0	0
	4-9	20-27		5.0-15	5.6-6.5	0	0	0	0
	9-17	20-27		5.0-15	5.6-6.5	0	0	0	0
	17-26	25-35		5.0-15	6.1-7.3	0	0	0	0
	26-41	25-35		5.0-15	6.1-7.3	0	0	0	0
	41-57	25-35		5.0-15	6.1-7.3	0	0	0	0
	57	---		---	---	0	0	0	0
Rock outcrop, serpentinite.									

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
711:								
Dixmine very gravelly loam-----	0-1	---	---	---	0	0	0	0
	1-2	---	---	---	0	0	0	0
	2-6	18-27	20-30	5.6-6.5	0	0	0	0
	6-11	20-30	15-25	5.1-6.5	0	0	0	0
	11-17	20-30	15-25	5.1-6.5	0	0	0	0
	17-30	27-35	15-20	4.5-6.0	0	0	0	0
	30-41	27-35	15-20	4.5-6.0	0	0	0	0
	41-54	27-35	15-20	4.5-6.0	0	0	0	0
	54	---	---	---	0	0	0	0
Toadtown loam-----	0-2	---	---	---	0	0	0	0
	2-3	---	---	---	0	0	0	0
	3-5	20-27	20-30	5.6-6.5	0	0	0	0
	5-8	25-35	12-20	5.1-6.5	0	0	0	0
	8-13	25-35	12-20	5.1-6.5	0	0	0	0
	13-18	35-45	9.0-12	5.1-6.5	0	0	0	0
	18-27	35-45	9.0-12	5.1-6.5	0	0	0	0
	27-51	18-35	5.0-12	5.1-6.0	0	0	0	0
	51-65	18-35	5.0-12	5.1-6.0	0	0	0	0
	65-75	18-35	5.0-12	5.1-6.0	0	0	0	0
	75-79	---	---	5.1-6.0	0	0	0	0
712:								
Dixmine very gravelly loam-----	0-1	---	---	---	0	0	0	0
	1-2	---	---	---	0	0	0	0
	2-6	18-27	20-30	5.6-6.5	0	0	0	0
	6-11	20-30	15-25	5.1-6.5	0	0	0	0
	11-17	20-30	15-25	5.1-6.5	0	0	0	0
	17-30	27-35	15-20	4.5-6.0	0	0	0	0
	30-41	27-35	15-20	4.5-6.0	0	0	0	0
	41-54	27-35	15-20	4.5-6.0	0	0	0	0
	54	---	---	---	0	0	0	0
Toadtown loam-----	0-2	---	---	---	0	0	0	0
	2-3	---	---	---	0	0	0	0
	3-5	20-27	20-30	5.6-6.5	0	0	0	0
	5-8	25-35	12-20	5.1-6.5	0	0	0	0
	8-13	25-35	12-20	5.1-6.5	0	0	0	0
	13-18	35-45	9.0-12	5.1-6.5	0	0	0	0
	18-27	35-45	9.0-12	5.1-6.5	0	0	0	0
	27-51	18-35	5.0-12	5.1-6.0	0	0	0	0
	51-65	18-35	5.0-12	5.1-6.0	0	0	0	0
	65-75	18-35	5.0-12	5.1-6.0	0	0	0	0
	75-79	---	---	5.1-6.0	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
713:								
Dixmine very gravelly loam-----	0-1	---	---	---	0	0	0	0
	1-2	---	---	---	0	0	0	0
	2-6	18-27	20-30	5.6-6.5	0	0	0	0
	6-11	20-30	15-25	5.1-6.5	0	0	0	0
	11-17	20-30	15-25	5.1-6.5	0	0	0	0
	17-30	27-35	15-20	4.5-6.0	0	0	0	0
	30-41	27-35	15-20	4.5-6.0	0	0	0	0
	41-54	27-35	15-20	4.5-6.0	0	0	0	0
	54	---	---	---	0	0	0	0
Toadtown loam-----	0-2	---	---	---	0	0	0	0
	2-3	---	---	---	0	0	0	0
	3-5	20-27	20-30	5.6-6.5	0	0	0	0
	5-8	25-35	12-20	5.1-6.5	0	0	0	0
	8-13	25-35	12-20	5.1-6.5	0	0	0	0
	13-18	35-45	9.0-12	5.1-6.5	0	0	0	0
	18-27	35-45	9.0-12	5.1-6.5	0	0	0	0
	27-51	18-35	5.0-12	5.1-6.0	0	0	0	0
	51-65	18-35	5.0-12	5.1-6.0	0	0	0	0
	65-75	18-35	5.0-12	5.1-6.0	0	0	0	0
	75-79	---	---	5.1-6.0	0	0	0	0
714:								
Dixmine very gravelly loam-----	0-1	---	---	---	0	0	0	0
	1-2	---	---	---	0	0	0	0
	2-6	18-27	20-30	5.6-6.5	0	0	0	0
	6-11	20-30	15-25	5.1-6.5	0	0	0	0
	11-17	20-30	15-25	5.1-6.5	0	0	0	0
	17-30	27-35	15-20	4.5-6.0	0	0	0	0
	30-41	27-35	15-20	4.5-6.0	0	0	0	0
	41-54	27-35	15-20	4.5-6.0	0	0	0	0
	54	---	---	---	0	0	0	0
Toadtown loam-----	0-2	---	---	---	0	0	0	0
	2-3	---	---	---	0	0	0	0
	3-5	20-27	20-30	5.6-6.5	0	0	0	0
	5-8	25-35	12-20	5.1-6.5	0	0	0	0
	8-13	25-35	12-20	5.1-6.5	0	0	0	0
	13-18	35-45	9.0-12	5.1-6.5	0	0	0	0
	18-27	35-45	9.0-12	5.1-6.5	0	0	0	0
	27-51	18-35	5.0-12	5.1-6.0	0	0	0	0
	51-65	18-35	5.0-12	5.1-6.0	0	0	0	0
	65-75	18-35	5.0-12	5.1-6.0	0	0	0	0
	75-79	---	---	5.1-6.0	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
715:								
Logtrain gravelly loam-----	0-1	---	---	---	0	0	0	0
	1-3	10-22	25-40	5.0-6.5	0	0	0	0
	3-9	12-27	5.0-20	4.4-6.5	0	0	0	0
	9-21	12-27	5.0-20	4.4-6.5	0	0	0	0
	21-38	12-27	5.0-20	4.4-6.5	0	0	0	0
	38-54	12-27	5.0-20	4.4-6.5	0	0	0	0
	54	---	---	---	0	0	0	0
Bottlehill very gravelly loam-----	0-0.5	---	---	---	0	0	0	0
	0.5-2	---	---	---	0	0	0	0
	2-4	10-20	25-40	5.1-6.5	0	0	0	0
	4-9	10-20	25-40	5.1-6.5	0	0	0	0
	9-13	15-27	10-25	4.5-6.5	0	0	0	0
	13-22	15-27	10-25	4.5-6.5	0	0	0	0
	22-33	18-35	5.0-15	4.5-6.5	0	0	0	0
	33	---	---	---	0	0	0	0
Walkermine very gravelly loam-----	0-1	---	---	---	0	0	0	0
	1-3	12-26	25-35	6.1-7.0	0	0	0	0
	3-12	12-26	10-25	5.6-6.8	0	0	0	0
	12	---	---	---	0	0	0	0
716:								
Griffgulch very gravelly silt loam-----	0-2	---	---	---	0	0	0	0
	2-3	---	---	---	0	0	0	0
	3-7	18-27	20-30	5.6-6.5	0	0	0	0
	7-11	27-35	15-25	5.6-6.5	0	0	0	0
	11-20	27-35	15-25	5.6-6.5	0	0	0	0
	20-33	35-50	15-25	5.6-6.5	0	0	0	0
	33-47	35-50	15-25	5.6-6.5	0	0	0	0
	47-58	35-50	15-25	5.6-6.5	0	0	0	0
	58	---	---	---	0	0	0	0
Surnuf gravelly loam-----	0-1	---	---	---	0	0	0	0
	1-4	22-30	20-32	6.1-7.3	0	0	0	0
	4-9	27-40	15-30	6.1-7.3	0	0	0	0
	9-16	27-40	15-30	6.1-7.3	0	0	0	0
	16-27	35-55	15-30	6.1-7.3	0	0	0	0
	27-29	35-55	15-30	6.1-7.3	0	0	0	0
	29-56	35-55	15-30	5.6-7.0	0	0	0	0
	56-72	35-55	15-30	5.6-7.0	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
717:								
Griffgulch very gravelly silt loam-----	0-2	---	---	---	0	0	0	0
	2-3	---	---	---	0	0	0	0
	3-7	18-27	20-30	5.6-6.5	0	0	0	0
	7-11	27-35	15-25	5.6-6.5	0	0	0	0
	11-20	27-35	15-25	5.6-6.5	0	0	0	0
	20-33	35-50	15-25	5.6-6.5	0	0	0	0
	33-47	35-50	15-25	5.6-6.5	0	0	0	0
	47-58	35-50	15-25	5.6-6.5	0	0	0	0
	58	---	---	---	0	0	0	0
Surnuf gravelly loam-----	0-1	---	---	---	0	0	0	0
	1-4	22-30	20-32	6.1-7.3	0	0	0	0
	4-9	27-40	15-30	6.1-7.3	0	0	0	0
	9-16	27-40	15-30	6.1-7.3	0	0	0	0
	16-27	35-55	15-30	6.1-7.3	0	0	0	0
	27-29	35-55	15-30	6.1-7.3	0	0	0	0
	29-56	35-55	15-30	5.6-7.0	0	0	0	0
	56-72	35-55	15-30	5.6-7.0	0	0	0	0
718:								
Griffgulch very gravelly silt loam-----	0-2	---	---	---	0	0	0	0
	2-3	---	---	---	0	0	0	0
	3-7	18-27	20-30	5.6-6.5	0	0	0	0
	7-11	27-35	15-25	5.6-6.5	0	0	0	0
	11-20	27-35	15-25	5.6-6.5	0	0	0	0
	20-33	35-50	15-25	5.6-6.5	0	0	0	0
	33-47	35-50	15-25	5.6-6.5	0	0	0	0
	47-58	35-50	15-25	5.6-6.5	0	0	0	0
	58	---	---	---	0	0	0	0
Surnuf gravelly loam-----	0-1	---	---	---	0	0	0	0
	1-4	22-30	20-32	6.1-7.3	0	0	0	0
	4-9	27-40	15-30	6.1-7.3	0	0	0	0
	9-16	27-40	15-30	6.1-7.3	0	0	0	0
	16-27	35-55	15-30	6.1-7.3	0	0	0	0
	27-29	35-55	15-30	6.1-7.3	0	0	0	0
	29-56	35-55	15-30	5.6-7.0	0	0	0	0
	56-72	35-55	15-30	5.6-7.0	0	0	0	0
Spine taxadjunct very cobbly loam-----	0-2	18-27	20-30	6.1-7.3	0	0	0	0
	2-15	22-35	15-25	6.1-6.5	0	0	0	0
	15	---	---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay Pct	Cation- exchange capacity meq/100g	Soil reaction pH	Calcium carbonate Pct	Gypsum Pct	Salinity dS/m	Sodium adsorption ratio
	In	Pct							
719:									
Griffgulch very gravelly silt loam-----	0-2	---	---	---	---	0	0	0	0
	2-3	---	---	---	---	0	0	0	0
	3-7	18-27	20-30	5.6-6.5	5.6-6.5	0	0	0	0
	7-11	27-35	15-25	5.6-6.5	5.6-6.5	0	0	0	0
	11-20	27-35	15-25	5.6-6.5	5.6-6.5	0	0	0	0
	20-33	35-50	15-25	5.6-6.5	5.6-6.5	0	0	0	0
	33-47	35-50	15-25	5.6-6.5	5.6-6.5	0	0	0	0
	47-58	35-50	15-25	5.6-6.5	5.6-6.5	0	0	0	0
	58	---	---	---	---	0	0	0	0
Surnuf gravelly loam-----	0-1	---	---	---	---	0	0	0	0
	1-4	22-30	20-32	6.1-7.3	6.1-7.3	0	0	0	0
	4-9	27-40	15-30	6.1-7.3	6.1-7.3	0	0	0	0
	9-16	27-40	15-30	6.1-7.3	6.1-7.3	0	0	0	0
	16-27	35-55	15-30	6.1-7.3	6.1-7.3	0	0	0	0
	27-29	35-55	15-30	6.1-7.3	6.1-7.3	0	0	0	0
	29-56	35-55	15-30	5.6-7.0	5.6-7.0	0	0	0	0
	56-72	35-55	15-30	5.6-7.0	5.6-7.0	0	0	0	0
Spine taxadjunct very cobbly loam-----	0-2	18-27	20-30	6.1-7.3	6.1-7.3	0	0	0	0
	2-15	22-35	15-25	6.1-6.5	6.1-6.5	0	0	0	0
	15	---	---	---	---	0	0	0	0
720:									
Dystroxerepts extremely gravelly loam-----	0-1	---	---	---	---	0	0	0	0
	1-4	12-27	15-25	6.1-7.3	6.1-7.3	0	0	0	0
	4-12	10-30	10-20	5.1-7.3	5.1-7.3	0	0	0	0
	12-22	10-30	10-20	5.1-7.3	5.1-7.3	0	0	0	0
	22-28	10-30	10-20	5.1-7.3	5.1-7.3	0	0	0	0
	28-38	10-30	10-20	5.1-7.3	5.1-7.3	0	0	0	0
	38	---	---	---	---	0	0	0	0
Haploxeralfs very gravelly loam-----	0-0.5	---	---	---	---	0	0	0	0
	0.5-4	17-27	15-25	6.1-7.0	6.1-7.0	0	0	0	0
	4-9	20-40	15-25	5.1-7.0	5.1-7.0	0	0	0	0
	9-13	20-40	15-25	5.1-7.0	5.1-7.0	0	0	0	0
	13-22	20-40	15-25	5.1-7.0	5.1-7.0	0	0	0	0
	22-31	20-40	15-25	5.1-7.0	5.1-7.0	0	0	0	0
	31-47	20-40	15-25	5.1-7.0	5.1-7.0	0	0	0	0
	47	---	---	---	---	0	0	0	0
Rock outcrop, metavolcanic.									

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct							
721: Haploxerands, granitic till, medial sandy loam-----	0-2	---	---	---	---	0	0	0	0
	2-5	4-8	10-20	5.6-6.5	0	0	0	0	0
	5-12	4-8	10-20	5.6-6.5	0	0	0	0	0
	12-22	3-6	4.0-12	5.6-6.5	0	0	0	0	0
	22-41	1-5	2.0-8.0	4.5-6.5	0	0	0	0	0
	41-55	1-5	2.0-8.0	4.5-6.5	0	0	0	0	0
	55-74	1-5	2.0-8.0	4.5-6.5	0	0	0	0	0
	74-87	1-5	2.0-8.0	4.5-6.5	0	0	0	0	0
722: Haploxerands, granitic till, medial sandy loam-----	0-2	---	---	---	---	0	0	0	0
	2-5	4-8	10-20	5.6-6.5	0	0	0	0	0
	5-12	4-8	10-20	5.6-6.5	0	0	0	0	0
	12-22	3-6	4.0-12	5.6-6.5	0	0	0	0	0
	22-41	1-5	2.0-8.0	4.5-6.5	0	0	0	0	0
	41-55	1-5	2.0-8.0	4.5-6.5	0	0	0	0	0
	55-74	1-5	2.0-8.0	4.5-6.5	0	0	0	0	0
	74-87	1-5	2.0-8.0	4.5-6.5	0	0	0	0	0
723: Haploxerands, granitic till, medial sandy loam-----	0-2	---	---	---	---	0	0	0	0
	2-5	4-8	10-20	5.6-6.5	0	0	0	0	0
	5-12	4-8	10-20	5.6-6.5	0	0	0	0	0
	12-22	3-6	4.0-12	5.6-6.5	0	0	0	0	0
	22-41	1-5	2.0-8.0	4.5-6.5	0	0	0	0	0
	41-55	1-5	2.0-8.0	4.5-6.5	0	0	0	0	0
	55-74	1-5	2.0-8.0	4.5-6.5	0	0	0	0	0
	74-87	1-5	2.0-8.0	4.5-6.5	0	0	0	0	0
724: Haploxerands, volcanic till, cobbly medial sandy loam-----	0-2	---	---	---	---	0	0	0	0
	2-4	6-12	25-35	5.6-7.0	0	0	0	0	0
	4-17	8-14	15-25	5.6-6.5	0	0	0	0	0
	17-37	10-22	10-20	5.1-6.5	0	0	0	0	0
	37-41	10-22	10-20	5.1-6.5	0	0	0	0	0
	41-52	2-8	1.0-5.0	4.5-7.0	0	0	0	0	0
	52-80	2-8	1.0-5.0	4.5-7.0	0	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
725:								
Haploxerands, volcanic till, cobbly medial sandy loam-----	0-2	---	---	---	0	0	0	0
	2-4	6-12	25-35	5.6-7.0	0	0	0	0
	4-17	8-14	15-25	5.6-6.5	0	0	0	0
	17-37	10-22	10-20	5.1-6.5	0	0	0	0
	37-41	10-22	10-20	5.1-6.5	0	0	0	0
	41-52	2-8	1.0-5.0	4.5-7.0	0	0	0	0
	52-80	2-8	1.0-5.0	4.5-7.0	0	0	0	0
726:								
Haploxerands, volcanic till, cobbly medial sandy loam-----	0-2	---	---	---	0	0	0	0
	2-4	6-12	25-35	5.6-7.0	0	0	0	0
	4-17	8-14	15-25	5.6-6.5	0	0	0	0
	17-37	10-22	10-20	5.1-6.5	0	0	0	0
	37-41	10-22	10-20	5.1-6.5	0	0	0	0
	41-52	2-8	1.0-5.0	4.5-7.0	0	0	0	0
	52-80	2-8	1.0-5.0	4.5-7.0	0	0	0	0
727:								
Bonneyridge sandy loam-----	0-1	---	---	---	0	0	0	0
	1-3	5-15	7.9-28	5.6-7.3	0	0	0	0
	3-6	5-15	7.9-28	5.6-7.3	0	0	0	0
	6-16	5-18	4.5-24	5.1-6.5	0	0	0	0
	16-22	5-18	4.5-24	5.1-6.5	0	0	0	0
	22-31	5-18	4.5-24	5.1-6.5	0	0	0	0
	31-39	5-18	4.5-24	5.1-6.5	0	0	0	0
	39-56	5-10	2.9-7.6	5.1-6.0	0	0	0	0
	56-76	5-10	2.9-7.6	5.1-6.0	0	0	0	0
728:								
Bonneyridge sandy loam-----	0-1	---	---	---	0	0	0	0
	1-3	5-15	7.9-28	5.6-7.3	0	0	0	0
	3-6	5-15	7.9-28	5.6-7.3	0	0	0	0
	6-16	5-18	4.5-24	5.1-6.5	0	0	0	0
	16-22	5-18	4.5-24	5.1-6.5	0	0	0	0
	22-31	5-18	4.5-24	5.1-6.5	0	0	0	0
	31-39	5-18	4.5-24	5.1-6.5	0	0	0	0
	39-56	5-10	2.9-7.6	5.1-6.0	0	0	0	0
	56-76	5-10	2.9-7.6	5.1-6.0	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay Pct	Cation- exchange capacity meq/100g	Soil reaction pH	Calcium carbonate Pct	Gypsum Pct	Salinity dS/m	Sodium adsorption ratio
	In	Pct							
729:									
Bonneyr ridge sandy loam-----	0-1	---	---	---	---	0	0	0	0
	1-3	5-15	7.9-28	5.6-7.3	0	0	0	0	0
	3-6	5-15	7.9-28	5.6-7.3	0	0	0	0	0
	6-16	5-18	4.5-24	5.1-6.5	0	0	0	0	0
	16-22	5-18	4.5-24	5.1-6.5	0	0	0	0	0
	22-31	5-18	4.5-24	5.1-6.5	0	0	0	0	0
	31-39	5-18	4.5-24	5.1-6.5	0	0	0	0	0
	39-56	5-10	2.9-7.6	5.1-6.0	0	0	0	0	0
	56-76	5-10	2.9-7.6	5.1-6.0	0	0	0	0	0
730:									
Tussock coll gravelly loam-----	0-1	---	---	---	---	0	0	0	0
	1-2	---	---	---	---	0	0	0	0
	2-6	17-25	20-30	6.1-7.0	0	0	0	0	0
	6-14	20-39	15-25	5.0-6.8	0	0	0	0	0
	14-23	20-39	10-20	5.0-6.8	0	0	0	0	0
	23-33	20-39	10-20	5.0-6.8	0	0	0	0	0
	33-41	20-39	10-20	5.0-6.8	0	0	0	0	0
	41-49	20-39	10-20	5.0-6.8	0	0	0	0	0
	49-70	20-39	10-20	5.0-6.8	0	0	0	0	0
Schott very gravelly loam-----	0-2	---	---	---	---	0	0	0	0
	2-6	15-25	20-30	6.1-7.0	0	0	0	0	0
	6-13	18-35	15-25	5.1-6.5	0	0	0	0	0
	13-22	18-35	10-20	5.1-6.5	0	0	0	0	0
	22-40	18-35	10-20	5.1-6.5	0	0	0	0	0
	40-50	18-35	10-20	5.1-6.5	0	0	0	0	0
	50	---	---	---	0	0	0	0	0
731:									
Tussock coll gravelly loam-----	0-1	---	---	---	---	0	0	0	0
	1-2	---	---	---	---	0	0	0	0
	2-6	17-25	20-30	6.1-7.0	0	0	0	0	0
	6-14	20-39	15-25	5.0-6.8	0	0	0	0	0
	14-23	20-39	10-20	5.0-6.8	0	0	0	0	0
	23-33	20-39	10-20	5.0-6.8	0	0	0	0	0
	33-41	20-39	10-20	5.0-6.8	0	0	0	0	0
	41-49	20-39	10-20	5.0-6.8	0	0	0	0	0
	49-70	20-39	10-20	5.0-6.8	0	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
731:								
Schott very gravelly loam-----	0-2	---	---	---	0	0	0	0
	2-6	15-25	20-30	6.1-7.0	0	0	0	0
	6-13	18-35	15-25	5.1-6.5	0	0	0	0
	13-22	18-35	10-20	5.1-6.5	0	0	0	0
	22-40	18-35	10-20	5.1-6.5	0	0	0	0
	40-50	18-35	10-20	5.1-6.5	0	0	0	0
	50	---	---	---	0	0	0	0
732:								
Bonepile taxadjunct, duripan substratum----	0-1	---	---	---	0	0	0	0
	1-4	10-20	25-40	5.1-6.5	0	0	0	0
	4-7	10-20	25-40	5.1-6.5	0	0	0	0
	7-15	10-20	20-35	5.1-6.5	0	0	0	0
	15-30	10-25	15-25	5.6-7.3	0	0	0	0
	30-37	10-25	15-25	5.6-7.3	0	0	0	0
	37-47	15-35	15-25	5.6-7.3	0	0	0	0
	47	---	---	---	0	0	0	0
733:								
Haploxerafals, terrace, gravelly loam-----	0-5	15-26	15-25	6.1-7.3	0	0	0	0
	5-11	18-35	10-20	5.6-7.0	0	0	0	0
	11-18	18-35	10-20	5.6-7.0	0	0	0	0
	18-32	18-35	10-20	5.6-7.0	0	0	0	0
	32-48	18-35	10-20	5.6-7.0	0	0	0	0
	48-63	18-35	10-20	5.6-7.0	0	0	0	0
734:								
Haploxerands medial sandy loam-----	0-0.5	---	---	---	0	0	0	0
	0.5-2	3-18	10-20	5.6-6.5	0	0	0	0
	2-5	3-18	10-20	5.6-6.5	0	0	0	0
	5-12	1-20	2.0-10	4.5-6.5	0	0	0	0
	12-23	1-20	2.0-10	4.5-6.5	0	0	0	0
	23-30	1-20	2.0-10	4.5-6.5	0	0	0	0
	30-42	1-20	2.0-10	4.5-6.5	0	0	0	0
	42-60	1-20	2.0-10	4.5-6.5	0	0	0	0
	60-80	1-20	2.0-10	4.5-6.5	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct							
734: Aquic Xerofluvents peaty very fine sandy loam-----	0-3	2-6	10-20	6.1-6.5	0	0	0	0	
	3-7	2-6	10-20	6.1-6.5	0	0	0	0	
	7-16	2-6	1.0-4.0	6.1-6.5	0	0	0	0	
	16-19	2-6	10-20	6.1-6.5	0	0	0	0	
	19-23	2-6	1.0-4.0	6.1-6.5	0	0	0	0	
	23-35	2-6	10-20	6.1-6.5	0	0	0	0	
	35-49	2-6	1.0-4.0	6.1-6.5	0	0	0	0	
	49-63	2-6	10-20	6.1-6.5	0	0	0	0	
	63-71	2-6	1.0-4.0	6.1-6.5	0	0	0	0	
	71-80	2-6	10-20	6.1-6.5	0	0	0	0	
735: Fluvaquents, loamy-----	0-0.5	---	---	---	0	0	0	0	
	0.5-2	12-27	18-30	6.1-7.3	0	0	0	0	
	2-9	12-27	18-30	6.1-7.3	0	0	0	0	
	9-18	12-27	15-25	6.1-7.3	0	0	0	0	
	18-24	12-27	15-25	6.1-7.3	0	0	0	0	
	24-27	10-20	10-20	6.1-7.3	0	0	0	0	
	27-37	10-20	10-20	6.1-7.3	0	0	0	0	
	37-45	12-27	18-30	6.1-7.3	0	0	0	0	
	45-65	12-27	18-30	6.1-7.3	0	0	0	0	
	65-70	12-27	18-30	6.1-7.3	0	0	0	0	
	70-85	5-30	10-20	6.1-7.3	0	0	0	0	
801: Obstruction gravelly sandy loam-----	0-4	---	---	---	0	0	0	0	
	4-7	10-20	15-20	5.6-6.5	0	0	0	0	
	7-10	12-25	8.0-13	5.1-6.5	0	0	0	0	
	10-18	12-25	8.0-13	5.1-6.5	0	0	0	0	
	18-25	12-25	8.0-13	5.1-6.5	0	0	0	0	
	25-33	12-25	8.0-13	5.1-6.5	0	0	0	0	
	33-44	5-20	6.0-11	4.5-6.5	0	0	0	0	
	44-64	5-20	6.0-11	4.5-6.5	0	0	0	0	
	64-84	5-20	6.0-11	4.5-6.5	0	0	0	0	
	84	---	---	---	0	0	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
802:								
Obskel very gravelly sandy loam-----	0-0.5	---	---	---	0	0	0	0
	0.5-1	---	---	---	0	0	0	0
	1-4	8-16	12-20	5.6-6.5	0	0	0	0
	4-9	10-24	6.0-15	4.5-6.5	0	0	0	0
	9-19	10-24	6.0-15	4.5-6.5	0	0	0	0
	19-30	10-24	6.0-15	4.5-6.5	0	0	0	0
	30-56	10-24	6.0-15	4.5-6.5	0	0	0	0
	56	---	---	---	0	0	0	0
Obstruction gravelly sandy loam-----								
	0-4	---	---	---	0	0	0	0
	4-7	10-20	15-20	5.6-6.5	0	0	0	0
	7-10	12-25	8.0-13	5.1-6.5	0	0	0	0
	10-18	12-25	8.0-13	5.1-6.5	0	0	0	0
	18-25	12-25	8.0-13	5.1-6.5	0	0	0	0
	25-33	12-25	8.0-13	5.1-6.5	0	0	0	0
	33-44	5-20	6.0-11	4.5-6.5	0	0	0	0
	44-64	5-20	6.0-11	4.5-6.5	0	0	0	0
	64-84	5-20	6.0-11	4.5-6.5	0	0	0	0
	84	---	---	---	0	0	0	0
803:								
Obskel very gravelly sandy loam-----	0-0.5	---	---	---	0	0	0	0
	0.5-1	---	---	---	0	0	0	0
	1-4	8-16	12-20	5.6-6.5	0	0	0	0
	4-9	10-24	6.0-15	4.5-6.5	0	0	0	0
	9-19	10-24	6.0-15	4.5-6.5	0	0	0	0
	19-30	10-24	6.0-15	4.5-6.5	0	0	0	0
	30-56	10-24	6.0-15	4.5-6.5	0	0	0	0
	56	---	---	---	0	0	0	0
Obstruction gravelly sandy loam-----								
	0-4	---	---	---	0	0	0	0
	4-7	10-20	15-20	5.6-6.5	0	0	0	0
	7-10	12-25	8.0-13	5.1-6.5	0	0	0	0
	10-18	12-25	8.0-13	5.1-6.5	0	0	0	0
	18-25	12-25	8.0-13	5.1-6.5	0	0	0	0
	25-33	12-25	8.0-13	5.1-6.5	0	0	0	0
	33-44	5-20	6.0-11	4.5-6.5	0	0	0	0
	44-64	5-20	6.0-11	4.5-6.5	0	0	0	0
	64-84	5-20	6.0-11	4.5-6.5	0	0	0	0
	84	---	---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
804:								
Obskel very gravelly sandy loam-----	0-0.5	---	---	---	0	0	0	0
	0.5-1	---	---	---	0	0	0	0
	1-4	8-16	12-20	5.6-6.5	0	0	0	0
	4-9	10-24	6.0-15	4.5-6.5	0	0	0	0
	9-19	10-24	6.0-15	4.5-6.5	0	0	0	0
	19-30	10-24	6.0-15	4.5-6.5	0	0	0	0
	30-56	10-24	6.0-15	4.5-6.5	0	0	0	0
	56	---	---	---	0	0	0	0
Obstruction gravelly sandy loam-----	0-4	---	---	---	0	0	0	0
	4-7	10-20	15-20	5.6-6.5	0	0	0	0
	7-10	12-25	8.0-13	5.1-6.5	0	0	0	0
	10-18	12-25	8.0-13	5.1-6.5	0	0	0	0
	18-25	12-25	8.0-13	5.1-6.5	0	0	0	0
	25-33	12-25	8.0-13	5.1-6.5	0	0	0	0
	33-44	5-20	6.0-11	4.5-6.5	0	0	0	0
	44-64	5-20	6.0-11	4.5-6.5	0	0	0	0
	64-84	5-20	6.0-11	4.5-6.5	0	0	0	0
	84	---	---	---	0	0	0	0
Retsongulch very gravelly sandy loam-----	0-1	---	---	---	0	0	0	0
	1-3	10-22	10-20	5.6-6.5	0	0	0	0
	3-12	12-26	5.0-15	4.5-6.5	0	0	0	0
	12-21	12-26	5.0-15	4.5-6.5	0	0	0	0
	21-30	12-26	5.0-15	4.5-6.5	0	0	0	0
	30	---	---	---	0	0	0	0
805:								
Bottlehill very gravelly loam-----	0-0.5	---	---	---	0	0	0	0
	0.5-2	---	---	---	0	0	0	0
	2-4	10-20	25-40	5.1-6.5	0	0	0	0
	4-9	10-20	25-40	5.1-6.5	0	0	0	0
	9-13	15-27	10-25	4.5-6.5	0	0	0	0
	13-22	15-27	10-25	4.5-6.5	0	0	0	0
	22-33	18-35	5.0-15	4.5-6.5	0	0	0	0
	33	---	---	---	0	0	0	0
Walkermine very gravelly loam-----	0-1	---	---	---	0	0	0	0
	1-3	12-26	25-35	6.1-7.0	0	0	0	0
	3-12	12-26	10-25	5.6-6.8	0	0	0	0
	12	---	---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
805:								
Logtrain gravelly loam-----	0-1	---	---	---	0	0	0	0
	1-3	10-22	25-40	5.0-6.5	0	0	0	0
	3-9	12-27	5.0-20	4.4-6.5	0	0	0	0
	9-21	12-27	5.0-20	4.4-6.5	0	0	0	0
	21-38	12-27	5.0-20	4.4-6.5	0	0	0	0
	38-54	12-27	5.0-20	4.4-6.5	0	0	0	0
	54	---	---	---	0	0	0	0
806:								
Bottlehill very gravelly loam-----	0-0.5	---	---	---	0	0	0	0
	0.5-2	---	---	---	0	0	0	0
	2-4	10-20	25-40	5.1-6.5	0	0	0	0
	4-9	10-20	25-40	5.1-6.5	0	0	0	0
	9-13	15-27	10-25	4.5-6.5	0	0	0	0
	13-22	15-27	10-25	4.5-6.5	0	0	0	0
	22-33	18-35	5.0-15	4.5-6.5	0	0	0	0
	33	---	---	---	0	0	0	0
Walkermine very gravelly loam-----	0-1	---	---	---	0	0	0	0
	1-3	12-26	25-35	6.1-7.0	0	0	0	0
	3-12	12-26	10-25	5.6-6.8	0	0	0	0
	12	---	---	---	0	0	0	0
Logtrain gravelly loam-----	0-1	---	---	---	0	0	0	0
	1-3	10-22	25-40	5.0-6.5	0	0	0	0
	3-9	12-27	5.0-20	4.4-6.5	0	0	0	0
	9-21	12-27	5.0-20	4.4-6.5	0	0	0	0
	21-38	12-27	5.0-20	4.4-6.5	0	0	0	0
	38-54	12-27	5.0-20	4.4-6.5	0	0	0	0
	54	---	---	---	0	0	0	0
807:								
Bottlehill very gravelly loam-----	0-0.5	---	---	---	0	0	0	0
	0.5-2	---	---	---	0	0	0	0
	2-4	10-20	25-40	5.1-6.5	0	0	0	0
	4-9	10-20	25-40	5.1-6.5	0	0	0	0
	9-13	15-27	10-25	4.5-6.5	0	0	0	0
	13-22	15-27	10-25	4.5-6.5	0	0	0	0
	22-33	18-35	5.0-15	4.5-6.5	0	0	0	0
	33	---	---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m		
807:									
Logtrain gravelly loam-----	0-1	---	---	---	0	0	0	0	
	1-3	10-22	25-40	5.0-6.5	0	0	0	0	
	3-9	12-27	5.0-20	4.4-6.5	0	0	0	0	
	9-21	12-27	5.0-20	4.4-6.5	0	0	0	0	
	21-38	12-27	5.0-20	4.4-6.5	0	0	0	0	
	38-54	12-27	5.0-20	4.4-6.5	0	0	0	0	
	54	---	---	---	0	0	0	0	
Walkermine very gravelly loam-----	0-1	---	---	---	0	0	0	0	
	1-3	12-26	25-35	6.1-7.0	0	0	0	0	
	3-12	12-26	10-25	5.6-6.8	0	0	0	0	
	12	---	---	---	0	0	0	0	
808:									
Bottlehill very gravelly loam-----	0-0.5	---	---	---	0	0	0	0	
	0.5-2	---	---	---	0	0	0	0	
	2-4	10-20	25-40	5.1-6.5	0	0	0	0	
	4-9	10-20	25-40	5.1-6.5	0	0	0	0	
	9-13	15-27	10-25	4.5-6.5	0	0	0	0	
	13-22	15-27	10-25	4.5-6.5	0	0	0	0	
	22-33	18-35	5.0-15	4.5-6.5	0	0	0	0	
	33	---	---	---	0	0	0	0	
Walkermine very gravelly loam-----	0-1	---	---	---	0	0	0	0	
	1-3	12-26	25-35	6.1-7.0	0	0	0	0	
	3-12	12-26	10-25	5.6-6.8	0	0	0	0	
	12	---	---	---	0	0	0	0	
Logtrain gravelly loam-----	0-1	---	---	---	0	0	0	0	
	1-3	10-22	25-40	5.0-6.5	0	0	0	0	
	3-9	12-27	5.0-20	4.4-6.5	0	0	0	0	
	9-21	12-27	5.0-20	4.4-6.5	0	0	0	0	
	21-38	12-27	5.0-20	4.4-6.5	0	0	0	0	
	38-54	12-27	5.0-20	4.4-6.5	0	0	0	0	
	54	---	---	---	0	0	0	0	
809:									
Walkermine very gravelly loam-----	0-1	---	---	---	0	0	0	0	
	1-3	12-26	25-35	6.1-7.0	0	0	0	0	
	3-12	12-26	10-25	5.6-6.8	0	0	0	0	
	12	---	---	---	0	0	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
809:								
Bottlehill very gravelly loam-----	0-0.5	---	---	---	0	0	0	0
	0.5-2	---	---	---	0	0	0	0
	2-4	10-20	25-40	5.1-6.5	0	0	0	0
	4-9	10-20	25-40	5.1-6.5	0	0	0	0
	9-13	15-27	10-25	4.5-6.5	0	0	0	0
	13-22	15-27	10-25	4.5-6.5	0	0	0	0
	22-33	18-35	5.0-15	4.5-6.5	0	0	0	0
	33	---	---	---	0	0	0	0
Logtrain gravelly loam-----	0-1	---	---	---	0	0	0	0
	1-3	10-22	25-40	5.0-6.5	0	0	0	0
	3-9	12-27	5.0-20	4.4-6.5	0	0	0	0
	9-21	12-27	5.0-20	4.4-6.5	0	0	0	0
	21-38	12-27	5.0-20	4.4-6.5	0	0	0	0
	38-54	12-27	5.0-20	4.4-6.5	0	0	0	0
	54	---	---	---	0	0	0	0
Rock outcrop, metavolcanic.								
810:								
Dixmine very gravelly loam-----	0-1	---	---	---	0	0	0	0
	1-2	---	---	---	0	0	0	0
	2-6	18-27	20-30	5.6-6.5	0	0	0	0
	6-11	20-30	15-25	5.1-6.5	0	0	0	0
	11-17	20-30	15-25	5.1-6.5	0	0	0	0
	17-30	27-35	15-20	4.5-6.0	0	0	0	0
	30-41	27-35	15-20	4.5-6.0	0	0	0	0
	41-54	27-35	15-20	4.5-6.0	0	0	0	0
	54	---	---	---	0	0	0	0
Mac gravelly loam-----	0-1	---	---	---	0	0	0	0
	1-4	15-25	15-25	5.6-7.0	0	0	0	0
	4-9	17-35	5.0-20	5.1-6.5	0	0	0	0
	9-15	17-35	5.0-15	5.1-6.5	0	0	0	0
	15-23	17-35	5.0-15	5.1-6.5	0	0	0	0
	23-37	16-27	5.0-15	5.0-6.5	0	0	0	0
	37	---	---	---	0	0	0	0
Spine very gravelly loam-----	0-1	---	---	---	0	0	0	0
	1-3	12-22	12-20	4.5-6.5	0	0	0	0
	3-9	15-35	5.0-20	4.5-6.5	0	0	0	0
	9-16	15-35	5.0-20	4.5-6.5	0	0	0	0
	16	---	---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay Pct	Cation- exchange capacity meq/100g	Soil reaction pH	Calcium carbonate Pct	Gypsum Pct	Salinity dS/m	Sodium adsorption ratio
	In	Pct							
811:									
Powellton gravelly loam-----	0-0.5	---	---	---	---	0	0	0	0
	0.5-2	---	---	---	---	0	0	0	0
	2-4	18-27	20-30	5.6-6.5	0	0	0	0	0
	4-9	22-35	8.0-25	4.5-6.5	0	0	0	0	0
	9-15	22-35	8.0-25	4.5-6.5	0	0	0	0	0
	15-24	22-35	8.0-25	4.5-6.5	0	0	0	0	0
	24-30	22-35	8.0-25	4.5-6.5	0	0	0	0	0
	30-41	17-30	4.0-10	4.5-6.0	0	0	0	0	0
	41-61	17-30	4.0-10	4.5-6.0	0	0	0	0	0
	61-83	17-30	4.0-10	4.5-6.0	0	0	0	0	0
Toadtown loam-----	0-2	---	---	---	0	0	0	0	0
	2-3	---	---	---	0	0	0	0	0
	3-5	20-27	20-30	5.6-6.5	0	0	0	0	0
	5-8	25-35	12-20	5.1-6.5	0	0	0	0	0
	8-13	25-35	12-20	5.1-6.5	0	0	0	0	0
	13-18	35-45	9.0-12	5.1-6.5	0	0	0	0	0
	18-27	35-45	9.0-12	5.1-6.5	0	0	0	0	0
	27-51	18-35	5.0-12	5.1-6.0	0	0	0	0	0
	51-65	18-35	5.0-12	5.1-6.0	0	0	0	0	0
	65-75	18-35	5.0-12	5.1-6.0	0	0	0	0	0
	75-79	---	---	5.1-6.0	0	0	0	0	0
812:									
Powellton gravelly loam-----	0-0.5	---	---	---	---	0	0	0	0
	0.5-2	---	---	---	---	0	0	0	0
	2-4	18-27	20-30	5.6-6.5	0	0	0	0	0
	4-9	22-35	8.0-25	4.5-6.5	0	0	0	0	0
	9-15	22-35	8.0-25	4.5-6.5	0	0	0	0	0
	15-24	22-35	8.0-25	4.5-6.5	0	0	0	0	0
	24-30	22-35	8.0-25	4.5-6.5	0	0	0	0	0
	30-41	17-30	4.0-10	4.5-6.0	0	0	0	0	0
	41-61	17-30	4.0-10	4.5-6.0	0	0	0	0	0
	61-83	17-30	4.0-10	4.5-6.0	0	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
812:								
Toadtown loam-----	0-2	---	---	---	0	0	0	0
	2-3	---	---	---	0	0	0	0
	3-5	20-27	20-30	5.6-6.5	0	0	0	0
	5-8	25-35	12-20	5.1-6.5	0	0	0	0
	8-13	25-35	12-20	5.1-6.5	0	0	0	0
	13-18	35-45	9.0-12	5.1-6.5	0	0	0	0
	18-27	35-45	9.0-12	5.1-6.5	0	0	0	0
	27-51	18-35	5.0-12	5.1-6.0	0	0	0	0
	51-65	18-35	5.0-12	5.1-6.0	0	0	0	0
	65-75	18-35	5.0-12	5.1-6.0	0	0	0	0
	75-79	---	---	5.1-6.0	0	0	0	0
813:								
Powellton gravelly loam-----	0-0.5	---	---	---	0	0	0	0
	0.5-2	---	---	---	0	0	0	0
	2-4	18-27	20-30	5.6-6.5	0	0	0	0
	4-9	22-35	8.0-25	4.5-6.5	0	0	0	0
	9-15	22-35	8.0-25	4.5-6.5	0	0	0	0
	15-24	22-35	8.0-25	4.5-6.5	0	0	0	0
	24-30	22-35	8.0-25	4.5-6.5	0	0	0	0
	30-41	17-30	4.0-10	4.5-6.0	0	0	0	0
	41-61	17-30	4.0-10	4.5-6.0	0	0	0	0
	61-83	17-30	4.0-10	4.5-6.0	0	0	0	0
Toadtown loam-----	0-2	---	---	---	0	0	0	0
	2-3	---	---	---	0	0	0	0
	3-5	20-27	20-30	5.6-6.5	0	0	0	0
	5-8	25-35	12-20	5.1-6.5	0	0	0	0
	8-13	25-35	12-20	5.1-6.5	0	0	0	0
	13-18	35-45	9.0-12	5.1-6.5	0	0	0	0
	18-27	35-45	9.0-12	5.1-6.5	0	0	0	0
	27-51	18-35	5.0-12	5.1-6.0	0	0	0	0
	51-65	18-35	5.0-12	5.1-6.0	0	0	0	0
	65-75	18-35	5.0-12	5.1-6.0	0	0	0	0
	75-79	---	---	5.1-6.0	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
814:								
Mountyana gravelly loam-----	0-1	---	---	---	0	0	0	0
	1-2	---	---	---	0	0	0	0
	2-4	15-25	20-30	5.6-7.3	0	0	0	0
	4-9	18-35	12-25	5.6-6.5	0	0	0	0
	9-13	18-35	12-25	5.6-6.5	0	0	0	0
	13-19	18-35	12-25	5.6-6.5	0	0	0	0
	19-26	18-35	10-15	5.1-6.5	0	0	0	0
	26-37	18-35	10-15	5.1-6.5	0	0	0	0
	37-52	18-30	10-15	4.5-5.5	0	0	0	0
	52-65	16-25	10-15	4.5-5.5	0	0	0	0
	65	---	---	---	0	0	0	0
815:								
Mountyana gravelly loam-----	0-1	---	---	---	0	0	0	0
	1-2	---	---	---	0	0	0	0
	2-4	15-25	20-30	5.6-7.3	0	0	0	0
	4-9	18-35	12-25	5.6-6.5	0	0	0	0
	9-13	18-35	12-25	5.6-6.5	0	0	0	0
	13-19	18-35	12-25	5.6-6.5	0	0	0	0
	19-26	18-35	10-15	5.1-6.5	0	0	0	0
	26-37	18-35	10-15	5.1-6.5	0	0	0	0
	37-52	18-30	10-15	4.5-5.5	0	0	0	0
	52-65	16-25	10-15	4.5-5.5	0	0	0	0
	65	---	---	---	0	0	0	0
817:								
Lydon very gravelly medial coarse sandy loam	0-0.5	---	---	---	0	0	0	0
	0.5-1	---	---	---	0	0	0	0
	1-3	10-18	30-40	5.6-6.7	0	0	0	0
	3-6	10-18	20-35	5.1-6.7	0	0	0	0
	6-13	10-18	20-35	5.1-6.7	0	0	0	0
	13-21	12-20	15-25	5.1-6.5	0	0	0	0
	21-35	12-20	15-25	5.1-6.5	0	0	0	0
	35	---	---	---	0	0	0	0
818:								
Lydon very gravelly medial coarse sandy loam	0-0.5	---	---	---	0	0	0	0
	0.5-1	---	---	---	0	0	0	0
	1-3	10-18	30-40	5.6-6.7	0	0	0	0
	3-6	10-18	20-35	5.1-6.7	0	0	0	0
	6-13	10-18	20-35	5.1-6.7	0	0	0	0
	13-21	12-20	15-25	5.1-6.5	0	0	0	0
	21-35	12-20	15-25	5.1-6.5	0	0	0	0
	35	---	---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
819:								
Lydon very gravelly medial coarse sandy loam	0-0.5	---	---	---	0	0	0	0
	0.5-1	---	---	---	0	0	0	0
	1-3	10-18	30-40	5.6-6.7	0	0	0	0
	3-6	10-18	20-35	5.1-6.7	0	0	0	0
	6-13	10-18	20-35	5.1-6.7	0	0	0	0
	13-21	12-20	15-25	5.1-6.5	0	0	0	0
	21-35	12-20	15-25	5.1-6.5	0	0	0	0
	35	---	---	---	0	0	0	0
Rock outcrop, mudflow breccia.								
820:								
Lydon very gravelly medial coarse sandy loam	0-0.5	---	---	---	0	0	0	0
	0.5-1	---	---	---	0	0	0	0
	1-3	10-18	30-40	5.6-6.7	0	0	0	0
	3-6	10-18	20-35	5.1-6.7	0	0	0	0
	6-13	10-18	20-35	5.1-6.7	0	0	0	0
	13-21	12-20	15-25	5.1-6.5	0	0	0	0
	21-35	12-20	15-25	5.1-6.5	0	0	0	0
	35	---	---	---	0	0	0	0
Rock outcrop, mudflow breccia.								
821:								
Lydon very gravelly medial coarse sandy loam	0-0.5	---	---	---	0	0	0	0
	0.5-1	---	---	---	0	0	0	0
	1-3	10-18	30-40	5.6-6.7	0	0	0	0
	3-6	10-18	20-35	5.1-6.7	0	0	0	0
	6-13	10-18	20-35	5.1-6.7	0	0	0	0
	13-21	12-20	15-25	5.1-6.5	0	0	0	0
	21-35	12-20	15-25	5.1-6.5	0	0	0	0
	35	---	---	---	0	0	0	0
Rock outcrop, mudflow breccia.								
822:								
Bonepile gravelly medial loam-----	0-1	---	---	---	0	0	0	0
	1-3	10-20	30-40	5.1-6.5	0	0	0	0
	3-9	10-20	30-40	5.1-6.5	0	0	0	0
	9-18	10-20	20-30	4.5-5.5	0	0	0	0
	18-30	12-20	20-30	4.5-5.5	0	0	0	0
	30-44	15-25	10-20	3.5-5.5	0	0	0	0
	44	---	---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay Pct	Cation- exchange capacity meq/100g	Soil reaction pH	Calcium carbonate Pct	Gypsum Pct	Salinity dS/m	Sodium adsorption ratio
	In	Pct							
823:									
Bonepile gravelly medial loam-----	0-1	---	---	---	---	0	0	0	0
	1-3	10-20	30-40	5.1-6.5	0	0	0	0	0
	3-9	10-20	30-40	5.1-6.5	0	0	0	0	0
	9-18	10-20	20-30	4.5-5.5	0	0	0	0	0
	18-30	12-20	20-30	4.5-5.5	0	0	0	0	0
	30-44	15-25	10-20	3.5-5.5	0	0	0	0	0
	44	---	---	---	0	0	0	0	0
824:									
Beecee very gravelly medial loam-----	0-0.5	---	---	---	---	0	0	0	0
	0.5-1	---	---	---	---	0	0	0	0
	1-4	8-20	30-40	5.6-7.0	0	0	0	0	0
	4-8	10-20	20-30	5.1-6.5	0	0	0	0	0
	8-15	10-20	20-30	5.1-6.5	0	0	0	0	0
	15-22	10-20	20-30	5.1-6.5	0	0	0	0	0
	22-31	12-22	15-25	5.1-6.5	0	0	0	0	0
	31-44	12-22	15-25	5.1-6.5	0	0	0	0	0
	44-59	18-27	15-25	5.1-6.5	0	0	0	0	0
	59-68	18-27	15-25	5.1-6.5	0	0	0	0	0
	68-86	18-27	15-25	5.1-6.5	0	0	0	0	0
825:									
Beecee very gravelly medial loam-----	0-0.5	---	---	---	---	0	0	0	0
	0.5-1	---	---	---	---	0	0	0	0
	1-4	8-20	30-40	5.6-7.0	0	0	0	0	0
	4-8	10-20	20-30	5.1-6.5	0	0	0	0	0
	8-15	10-20	20-30	5.1-6.5	0	0	0	0	0
	15-22	10-20	20-30	5.1-6.5	0	0	0	0	0
	22-31	12-22	15-25	5.1-6.5	0	0	0	0	0
	31-44	12-22	15-25	5.1-6.5	0	0	0	0	0
	44-59	18-27	15-25	5.1-6.5	0	0	0	0	0
	59-68	18-27	15-25	5.1-6.5	0	0	0	0	0
	68-86	18-27	15-25	5.1-6.5	0	0	0	0	0
Lydon very gravelly medial coarse sandy loam	0-0.5	---	---	---	---	0	0	0	0
	0.5-1	---	---	---	---	0	0	0	0
	1-3	10-18	30-40	5.6-6.7	0	0	0	0	0
	3-6	10-18	20-35	5.1-6.7	0	0	0	0	0
	6-13	10-18	20-35	5.1-6.7	0	0	0	0	0
	13-21	12-20	15-25	5.1-6.5	0	0	0	0	0
	21-35	12-20	15-25	5.1-6.5	0	0	0	0	0
	35	---	---	---	0	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
826:								
Redbone gravelly medial sandy loam-----	0-1	---	---	---	0	0	0	0
	1-2	---	---	---	0	0	0	0
	2-4	10-16	30-40	5.1-6.5	0	0	0	0
	4-7	12-18	20-30	5.1-6.5	0	0	0	0
	7-17	12-18	20-30	5.1-6.5	0	0	0	0
	17-28	15-22	20-30	5.1-6.5	0	0	0	0
	28-41	15-22	20-30	5.1-6.5	0	0	0	0
	41-54	15-22	20-30	5.0-6.5	0	0	0	0
	54	---	---	---	0	0	0	0
827:								
Redbone gravelly medial sandy loam-----	0-1	---	---	---	0	0	0	0
	1-2	---	---	---	0	0	0	0
	2-4	10-16	30-40	5.1-6.5	0	0	0	0
	4-7	12-18	20-30	5.1-6.5	0	0	0	0
	7-17	12-18	20-30	5.1-6.5	0	0	0	0
	17-28	15-22	20-30	5.1-6.5	0	0	0	0
	28-41	15-22	20-30	5.1-6.5	0	0	0	0
	41-54	15-22	20-30	5.0-6.5	0	0	0	0
	54	---	---	---	0	0	0	0
829:								
Paradiso loam-----	0-2	---	---	---	0	0	0	0
	2-4	17-27	20-30	5.6-7.3	0	0	0	0
	4-9	24-35	15-30	5.6-7.3	0	0	0	0
	9-16	25-40	10-20	5.6-6.8	0	0	0	0
	16-25	35-55	7.0-20	5.1-6.8	0	0	0	0
	25-45	35-55	7.0-20	5.1-6.8	0	0	0	0
	45-58	17-35	5.0-15	4.5-6.8	0	0	0	0
	58-74	17-35	5.0-15	4.5-6.8	0	0	0	0
	74-84	17-27	5.0-15	4.5-6.5	0	0	0	0
830:								
Paradiso loam-----	0-2	---	---	---	0	0	0	0
	2-4	17-27	20-30	5.6-7.3	0	0	0	0
	4-9	24-35	15-30	5.6-7.3	0	0	0	0
	9-16	25-40	10-20	5.6-6.8	0	0	0	0
	16-25	35-55	7.0-20	5.1-6.8	0	0	0	0
	25-45	35-55	7.0-20	5.1-6.8	0	0	0	0
	45-58	17-35	5.0-15	4.5-6.8	0	0	0	0
	58-74	17-35	5.0-15	4.5-6.8	0	0	0	0
	74-84	17-27	5.0-15	4.5-6.5	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay Pct	Cation- exchange capacity meq/100g	Soil reaction pH	Calcium carbonate Pct	Gypsum Pct	Salinity dS/m	Sodium adsorption ratio
	In	Pct							
831:									
Surnuf gravelly loam-----	0-1	---	---	---	---	0	0	0	0
	1-4	22-30	20-32	6.1-7.3	6.1-7.3	0	0	0	0
	4-9	27-40	15-30	6.1-7.3	6.1-7.3	0	0	0	0
	9-16	27-40	15-30	6.1-7.3	6.1-7.3	0	0	0	0
	16-27	35-55	15-30	6.1-7.3	6.1-7.3	0	0	0	0
	27-29	35-55	15-30	6.1-7.3	6.1-7.3	0	0	0	0
	29-56	35-55	15-30	5.6-7.0	5.6-7.0	0	0	0	0
	56-72	35-55	15-30	5.6-7.0	5.6-7.0	0	0	0	0
Bigridge loam-----	0-1	---	---	---	---	0	0	0	0
	1-5	15-25	8.1-14	5.6-7.3	5.6-7.3	0	0	0	0
	5-9	19-30	8.6-16	5.6-7.3	5.6-7.3	0	0	0	0
	9-15	18-35	8.3-19	4.5-7.3	4.5-7.3	0	0	0	0
	15-20	18-35	8.0-19	4.5-6.5	4.5-6.5	0	0	0	0
	20-27	15-35	7.8-19	4.5-6.5	4.5-6.5	0	0	0	0
	27-36	15-35	5.8-19	4.5-6.5	4.5-6.5	0	0	0	0
	36-51	15-35	7.7-19	4.5-6.5	4.5-6.5	0	0	0	0
	51-62	---	---	---	---	0	0	0	0
Spine very gravelly loam-----	0-1	---	---	---	---	0	0	0	0
	1-3	12-22	12-20	4.5-6.5	4.5-6.5	0	0	0	0
	3-9	15-35	5.0-20	4.5-6.5	4.5-6.5	0	0	0	0
	9-16	15-35	5.0-20	4.5-6.5	4.5-6.5	0	0	0	0
	16	---	---	---	---	0	0	0	0
832:									
Surnuf gravelly loam-----	0-1	---	---	---	---	0	0	0	0
	1-4	22-30	20-32	6.1-7.3	6.1-7.3	0	0	0	0
	4-9	27-40	15-30	6.1-7.3	6.1-7.3	0	0	0	0
	9-16	27-40	15-30	6.1-7.3	6.1-7.3	0	0	0	0
	16-27	35-55	15-30	6.1-7.3	6.1-7.3	0	0	0	0
	27-29	35-55	15-30	6.1-7.3	6.1-7.3	0	0	0	0
	29-56	35-55	15-30	5.6-7.0	5.6-7.0	0	0	0	0
	56-72	35-55	15-30	5.6-7.0	5.6-7.0	0	0	0	0
Bigridge loam-----	0-1	---	---	---	---	0	0	0	0
	1-5	15-25	8.1-14	5.6-7.3	5.6-7.3	0	0	0	0
	5-9	19-30	8.6-16	5.6-7.3	5.6-7.3	0	0	0	0
	9-15	18-35	8.3-19	4.5-7.3	4.5-7.3	0	0	0	0
	15-20	18-35	8.0-19	4.5-6.5	4.5-6.5	0	0	0	0
	20-27	15-35	7.8-19	4.5-6.5	4.5-6.5	0	0	0	0
	27-36	15-35	5.8-19	4.5-6.5	4.5-6.5	0	0	0	0
	36-51	15-35	7.7-19	4.5-6.5	4.5-6.5	0	0	0	0
	51-62	---	---	---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m		
832:									
Spine very gravelly loam-----	0-1	---	---	---	0	0	0	0	
	1-3	12-22	12-20	4.5-6.5	0	0	0	0	
	3-9	15-35	5.0-20	4.5-6.5	0	0	0	0	
	9-16	15-35	5.0-20	4.5-6.5	0	0	0	0	
	16	---	---	---	0	0	0	0	
833:									
Surnuf gravelly loam-----	0-1	---	---	---	0	0	0	0	
	1-4	22-30	20-32	6.1-7.3	0	0	0	0	
	4-9	27-40	15-30	6.1-7.3	0	0	0	0	
	9-16	27-40	15-30	6.1-7.3	0	0	0	0	
	16-27	35-55	15-30	6.1-7.3	0	0	0	0	
	27-29	35-55	15-30	6.1-7.3	0	0	0	0	
	29-56	35-55	15-30	5.6-7.0	0	0	0	0	
	56-72	35-55	15-30	5.6-7.0	0	0	0	0	
Bigridge loam-----	0-1	---	---	---	0	0	0	0	
	1-5	15-25	8.1-14	5.6-7.3	0	0	0	0	
	5-9	19-30	8.6-16	5.6-7.3	0	0	0	0	
	9-15	18-35	8.3-19	4.5-7.3	0	0	0	0	
	15-20	18-35	8.0-19	4.5-6.5	0	0	0	0	
	20-27	15-35	7.8-19	4.5-6.5	0	0	0	0	
	27-36	15-35	5.8-19	4.5-6.5	0	0	0	0	
	36-51	15-35	7.7-19	4.5-6.5	0	0	0	0	
	51-62	---	---	---	0	0	0	0	
Spine very gravelly loam-----	0-1	---	---	---	0	0	0	0	
	1-3	12-22	12-20	4.5-6.5	0	0	0	0	
	3-9	15-35	5.0-20	4.5-6.5	0	0	0	0	
	9-16	15-35	5.0-20	4.5-6.5	0	0	0	0	
	16	---	---	---	0	0	0	0	
834:									
Hietanen gravelly loam-----	0-1	---	---	---	0	0	0	0	
	1-3	18-27	15-25	5.6-7.0	0	0	0	0	
	3-8	22-35	5.0-20	5.1-6.5	0	0	0	0	
	8-19	22-35	5.0-15	5.1-6.5	0	0	0	0	
	19-30	22-35	5.0-15	5.1-6.5	0	0	0	0	
	30-53	22-35	5.0-15	5.1-6.5	0	0	0	0	
	53	---	---	---	0	0	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay Pct	Cation- exchange capacity meq/100g	Soil reaction pH	Calcium carbonate Pct	Gypsum Pct	Salinity dS/m	Sodium adsorption ratio
	In	Pct							
834:									
Mac gravelly loam-----	0-1	---	---	---	---	0	0	0	0
	1-4	15-25	15-25	5.6-7.0	5.6-7.0	0	0	0	0
	4-9	17-35	5.0-20	5.1-6.5	5.1-6.5	0	0	0	0
	9-15	17-35	5.0-15	5.1-6.5	5.1-6.5	0	0	0	0
	15-23	17-35	5.0-15	5.1-6.5	5.1-6.5	0	0	0	0
	23-37	16-27	5.0-15	5.0-6.5	5.0-6.5	0	0	0	0
	37	---	---	---	---	0	0	0	0
835:									
Hietanen gravelly loam-----	0-1	---	---	---	---	0	0	0	0
	1-3	18-27	15-25	5.6-7.0	5.6-7.0	0	0	0	0
	3-8	22-35	5.0-20	5.1-6.5	5.1-6.5	0	0	0	0
	8-19	22-35	5.0-15	5.1-6.5	5.1-6.5	0	0	0	0
	19-30	22-35	5.0-15	5.1-6.5	5.1-6.5	0	0	0	0
	30-53	22-35	5.0-15	5.1-6.5	5.1-6.5	0	0	0	0
	53	---	---	---	---	0	0	0	0
Mac gravelly loam-----	0-1	---	---	---	---	0	0	0	0
	1-4	15-25	15-25	5.6-7.0	5.6-7.0	0	0	0	0
	4-9	17-35	5.0-20	5.1-6.5	5.1-6.5	0	0	0	0
	9-15	17-35	5.0-15	5.1-6.5	5.1-6.5	0	0	0	0
	15-23	17-35	5.0-15	5.1-6.5	5.1-6.5	0	0	0	0
	23-37	16-27	5.0-15	5.0-6.5	5.0-6.5	0	0	0	0
	37	---	---	---	---	0	0	0	0
836:									
Hietanen gravelly loam-----	0-1	---	---	---	---	0	0	0	0
	1-3	18-27	15-25	5.6-7.0	5.6-7.0	0	0	0	0
	3-8	22-35	5.0-20	5.1-6.5	5.1-6.5	0	0	0	0
	8-19	22-35	5.0-15	5.1-6.5	5.1-6.5	0	0	0	0
	19-30	22-35	5.0-15	5.1-6.5	5.1-6.5	0	0	0	0
	30-53	22-35	5.0-15	5.1-6.5	5.1-6.5	0	0	0	0
	53	---	---	---	---	0	0	0	0
Mac gravelly loam-----	0-1	---	---	---	---	0	0	0	0
	1-4	15-25	15-25	5.6-7.0	5.6-7.0	0	0	0	0
	4-9	17-35	5.0-20	5.1-6.5	5.1-6.5	0	0	0	0
	9-15	17-35	5.0-15	5.1-6.5	5.1-6.5	0	0	0	0
	15-23	17-35	5.0-15	5.1-6.5	5.1-6.5	0	0	0	0
	23-37	16-27	5.0-15	5.0-6.5	5.0-6.5	0	0	0	0
	37	---	---	---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
836:								
Spine very gravelly loam-----	0-1	---	---	---	0	0	0	0
	1-3	12-22	12-20	4.5-6.5	0	0	0	0
	3-9	15-35	5.0-20	4.5-6.5	0	0	0	0
	9-16	15-35	5.0-20	4.5-6.5	0	0	0	0
	16	---	---	---	0	0	0	0
837:								
Hietanen gravelly loam-----	0-1	---	---	---	0	0	0	0
	1-3	18-27	15-25	5.6-7.0	0	0	0	0
	3-8	22-35	5.0-20	5.1-6.5	0	0	0	0
	8-19	22-35	5.0-15	5.1-6.5	0	0	0	0
	19-30	22-35	5.0-15	5.1-6.5	0	0	0	0
	30-53	22-35	5.0-15	5.1-6.5	0	0	0	0
	53	---	---	---	0	0	0	0
Spine very gravelly loam-----	0-1	---	---	---	0	0	0	0
	1-3	12-22	12-20	4.5-6.5	0	0	0	0
	3-9	15-35	5.0-20	4.5-6.5	0	0	0	0
	9-16	15-35	5.0-20	4.5-6.5	0	0	0	0
	16	---	---	---	0	0	0	0
Mac gravelly loam-----	0-1	---	---	---	0	0	0	0
	1-4	15-25	15-25	5.6-7.0	0	0	0	0
	4-9	17-35	5.0-20	5.1-6.5	0	0	0	0
	9-15	17-35	5.0-15	5.1-6.5	0	0	0	0
	15-23	17-35	5.0-15	5.1-6.5	0	0	0	0
	23-37	16-27	5.0-15	5.0-6.5	0	0	0	0
	37	---	---	---	0	0	0	0
838:								
Dixmine very gravelly loam-----	0-1	---	---	---	0	0	0	0
	1-2	---	---	---	0	0	0	0
	2-6	18-27	20-30	5.6-6.5	0	0	0	0
	6-11	20-30	15-25	5.1-6.5	0	0	0	0
	11-17	20-30	15-25	5.1-6.5	0	0	0	0
	17-30	27-35	15-20	4.5-6.0	0	0	0	0
	30-41	27-35	15-20	4.5-6.0	0	0	0	0
	41-54	27-35	15-20	4.5-6.0	0	0	0	0
	54	---	---	---	0	0	0	0
Spine very gravelly loam-----	0-1	---	---	---	0	0	0	0
	1-3	12-22	12-20	4.5-6.5	0	0	0	0
	3-9	15-35	5.0-20	4.5-6.5	0	0	0	0
	9-16	15-35	5.0-20	4.5-6.5	0	0	0	0
	16	---	---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
838:								
Mac gravelly loam-----	0-1	---	---	---	0	0	0	0
	1-4	15-25	15-25	5.6-7.0	0	0	0	0
	4-9	17-35	5.0-20	5.1-6.5	0	0	0	0
	9-15	17-35	5.0-15	5.1-6.5	0	0	0	0
	15-23	17-35	5.0-15	5.1-6.5	0	0	0	0
	23-37	16-27	5.0-15	5.0-6.5	0	0	0	0
	37	---	---	---	0	0	0	0
839:								
Chawanakee gravelly sandy loam-----	0-1	---	---	---	0	0	0	0
	1-2	---	---	---	0	0	0	0
	2-5	2-6	8.0-15	5.6-6.5	0	0	0	0
	5-11	2-6	2.0-10	5.1-6.5	0	0	0	0
	11-19	2-6	2.0-10	5.1-6.5	0	0	0	0
	19	---	---	---	0	0	0	0
Billscabin gravelly sandy loam-----	0-2	---	---	---	0	0	0	0
	2-5	5-15	7.9-18	5.6-6.5	0	0	0	0
	5-14	5-15	5.8-14	5.6-6.5	0	0	0	0
	14-27	5-15	3.7-12	5.1-6.5	0	0	0	0
	27-37	3-12	1.9-9.6	4.5-6.0	0	0	0	0
	37-57	3-12	1.9-9.6	4.5-6.0	0	0	0	0
	57-82	3-12	1.9-9.6	4.5-6.0	0	0	0	0
841:								
Billscabin gravelly sandy loam-----	0-2	---	---	---	0	0	0	0
	2-5	5-15	7.9-18	5.6-6.5	0	0	0	0
	5-14	5-15	5.8-14	5.6-6.5	0	0	0	0
	14-27	5-15	3.7-12	5.1-6.5	0	0	0	0
	27-37	3-12	1.9-9.6	4.5-6.0	0	0	0	0
	37-57	3-12	1.9-9.6	4.5-6.0	0	0	0	0
	57-82	3-12	1.9-9.6	4.5-6.0	0	0	0	0
Bonneyridge sandy loam-----	0-1	---	---	---	0	0	0	0
	1-3	5-15	7.9-28	5.6-7.3	0	0	0	0
	3-6	5-15	7.9-28	5.6-7.3	0	0	0	0
	6-16	5-18	4.5-24	5.1-6.5	0	0	0	0
	16-22	5-18	4.5-24	5.1-6.5	0	0	0	0
	22-31	5-18	4.5-24	5.1-6.5	0	0	0	0
	31-39	5-18	4.5-24	5.1-6.5	0	0	0	0
	39-56	5-10	2.9-7.6	5.1-6.0	0	0	0	0
	56-76	5-10	2.9-7.6	5.1-6.0	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
842:								
Bills cabin gravelly sandy loam-----	0-2	---	---	---	0	0	0	0
	2-5	5-15	7.9-18	5.6-6.5	0	0	0	0
	5-14	5-15	5.8-14	5.6-6.5	0	0	0	0
	14-27	5-15	3.7-12	5.1-6.5	0	0	0	0
	27-37	3-12	1.9-9.6	4.5-6.0	0	0	0	0
	37-57	3-12	1.9-9.6	4.5-6.0	0	0	0	0
	57-82	3-12	1.9-9.6	4.5-6.0	0	0	0	0
Bonneyridge sandy loam-----	0-1	---	---	---	0	0	0	0
	1-3	5-15	7.9-28	5.6-7.3	0	0	0	0
	3-6	5-15	7.9-28	5.6-7.3	0	0	0	0
	6-16	5-18	4.5-24	5.1-6.5	0	0	0	0
	16-22	5-18	4.5-24	5.1-6.5	0	0	0	0
	22-31	5-18	4.5-24	5.1-6.5	0	0	0	0
	31-39	5-18	4.5-24	5.1-6.5	0	0	0	0
	39-56	5-10	2.9-7.6	5.1-6.0	0	0	0	0
	56-76	5-10	2.9-7.6	5.1-6.0	0	0	0	0
846:								
Bonneyridge sandy loam-----	0-1	---	---	---	0	0	0	0
	1-3	5-15	7.9-28	5.6-7.3	0	0	0	0
	3-6	5-15	7.9-28	5.6-7.3	0	0	0	0
	6-16	5-18	4.5-24	5.1-6.5	0	0	0	0
	16-22	5-18	4.5-24	5.1-6.5	0	0	0	0
	22-31	5-18	4.5-24	5.1-6.5	0	0	0	0
	31-39	5-18	4.5-24	5.1-6.5	0	0	0	0
	39-56	5-10	2.9-7.6	5.1-6.0	0	0	0	0
	56-76	5-10	2.9-7.6	5.1-6.0	0	0	0	0
Lewisflat loam-----	0-3	---	---	---	0	0	0	0
	3-5	5-18	---	5.1-6.5	0	0	0	0
	5-9	5-18	1.9-11	5.1-6.5	0	0	0	0
	9-18	18-27	---	5.1-6.0	0	0	0	0
	18-33	18-27	---	5.1-6.0	0	0	0	0
	33-49	18-27	---	5.1-6.0	0	0	0	0
	49-65	8-27	---	4.5-6.0	0	0	0	0
	65-75	8-27	---	4.5-6.0	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
847:								
Bonneyridge sandy loam-----	0-1	---	---	---	0	0	0	0
	1-3	5-15	7.9-28	5.6-7.3	0	0	0	0
	3-6	5-15	7.9-28	5.6-7.3	0	0	0	0
	6-16	5-18	4.5-24	5.1-6.5	0	0	0	0
	16-22	5-18	4.5-24	5.1-6.5	0	0	0	0
	22-31	5-18	4.5-24	5.1-6.5	0	0	0	0
	31-39	5-18	4.5-24	5.1-6.5	0	0	0	0
	39-56	5-10	2.9-7.6	5.1-6.0	0	0	0	0
	56-76	5-10	2.9-7.6	5.1-6.0	0	0	0	0
Lewisflat loam-----	0-3	---	---	---	0	0	0	0
	3-5	5-18	---	5.1-6.5	0	0	0	0
	5-9	5-18	1.9-11	5.1-6.5	0	0	0	0
	9-18	18-27	---	5.1-6.0	0	0	0	0
	18-33	18-27	---	5.1-6.0	0	0	0	0
	33-49	18-27	---	5.1-6.0	0	0	0	0
	49-65	8-27	---	4.5-6.0	0	0	0	0
	65-75	8-27	---	4.5-6.0	0	0	0	0
848:								
Bonneyridge sandy loam-----	0-1	---	---	---	0	0	0	0
	1-3	5-15	7.9-28	5.6-7.3	0	0	0	0
	3-6	5-15	7.9-28	5.6-7.3	0	0	0	0
	6-16	5-18	4.5-24	5.1-6.5	0	0	0	0
	16-22	5-18	4.5-24	5.1-6.5	0	0	0	0
	22-31	5-18	4.5-24	5.1-6.5	0	0	0	0
	31-39	5-18	4.5-24	5.1-6.5	0	0	0	0
	39-56	5-10	2.9-7.6	5.1-6.0	0	0	0	0
	56-76	5-10	2.9-7.6	5.1-6.0	0	0	0	0
Lewisflat loam-----	0-3	---	---	---	0	0	0	0
	3-5	5-18	---	5.1-6.5	0	0	0	0
	5-9	5-18	1.9-11	5.1-6.5	0	0	0	0
	9-18	18-27	---	5.1-6.0	0	0	0	0
	18-33	18-27	---	5.1-6.0	0	0	0	0
	33-49	18-27	---	5.1-6.0	0	0	0	0
	49-65	8-27	---	4.5-6.0	0	0	0	0
	65-75	8-27	---	4.5-6.0	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
850:								
Lewisflat loam-----	0-3	---	---	---	0	0	0	0
	3-5	5-18	---	5.1-6.5	0	0	0	0
	5-9	5-18	1.9-11	5.1-6.5	0	0	0	0
	9-18	18-27	---	5.1-6.0	0	0	0	0
	18-33	18-27	---	5.1-6.0	0	0	0	0
	33-49	18-27	---	5.1-6.0	0	0	0	0
	49-65	8-27	---	4.5-6.0	0	0	0	0
	65-75	8-27	---	4.5-6.0	0	0	0	0
851:								
Lewisflat loam-----	0-3	---	---	---	0	0	0	0
	3-5	5-18	---	5.1-6.5	0	0	0	0
	5-9	5-18	1.9-11	5.1-6.5	0	0	0	0
	9-18	18-27	---	5.1-6.0	0	0	0	0
	18-33	18-27	---	5.1-6.0	0	0	0	0
	33-49	18-27	---	5.1-6.0	0	0	0	0
	49-65	8-27	---	4.5-6.0	0	0	0	0
	65-75	8-27	---	4.5-6.0	0	0	0	0
852:								
Lewisflat loam-----	0-3	---	---	---	0	0	0	0
	3-5	5-18	---	5.1-6.5	0	0	0	0
	5-9	5-18	1.9-11	5.1-6.5	0	0	0	0
	9-18	18-27	---	5.1-6.0	0	0	0	0
	18-33	18-27	---	5.1-6.0	0	0	0	0
	33-49	18-27	---	5.1-6.0	0	0	0	0
	49-65	8-27	---	4.5-6.0	0	0	0	0
	65-75	8-27	---	4.5-6.0	0	0	0	0
860:								
Toadtown gravelly loam-----	0-1	---	---	---	0	0	0	0
	1-6	15-25	32-41	5.8-6.5	0	0	0	0
	6-15	22-37	9.7-16	5.8-6.5	0	0	0	0
	15-32	40-60	12-19	5.1-6.5	0	0	0	0
	32-43	40-60	12-19	5.1-6.5	0	0	0	0
	43-55	18-37	5.2-10	5.1-6.5	0	0	0	0
	55-80	18-37	5.2-10	5.1-6.5	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay Pct	Cation- exchange capacity meq/100g	Soil reaction pH	Calcium carbonate Pct	Gypsum Pct	Salinity dS/m	Sodium adsorption ratio
	In	Pct							
860:									
Powellton silt loam-----	0-1	---	---	---	---	0	0	0	0
	1-3	18-24	9.3-13	5.1-6.5	0	0	0	0	0
	3-9	18-24	8.6-13	5.1-6.5	0	0	0	0	0
	9-19	22-35	---	5.1-6.5	0	0	0	0	0
	19-28	22-35	---	5.1-6.5	0	0	0	0	0
	28-33	22-35	---	5.1-6.5	0	0	0	0	0
	33-48	18-35	---	5.1-6.0	0	0	0	0	0
	48-66	18-35	5.2-12	5.1-6.0	0	0	0	0	0
	66-73	16-35	---	5.3-6.0	0	0	0	0	0
	73-83	11-27	---	5.1-5.5	0	0	0	0	0
	83-109	11-27	---	5.1-5.5	0	0	0	0	0
861:									
Toadtown gravelly loam-----	0-1	---	---	---	---	0	0	0	0
	1-6	15-25	32-41	5.8-6.5	0	0	0	0	0
	6-15	22-37	9.7-16	5.8-6.5	0	0	0	0	0
	15-32	40-60	12-19	5.1-6.5	0	0	0	0	0
	32-43	40-60	12-19	5.1-6.5	0	0	0	0	0
	43-55	18-37	5.2-10	5.1-6.5	0	0	0	0	0
	55-80	18-37	5.2-10	5.1-6.5	0	0	0	0	0
Powellton silt loam-----	0-1	---	---	---	---	0	0	0	0
	1-3	18-24	9.3-13	5.1-6.5	0	0	0	0	0
	3-9	18-24	8.6-13	5.1-6.5	0	0	0	0	0
	9-19	22-35	---	5.1-6.5	0	0	0	0	0
	19-28	22-35	---	5.1-6.5	0	0	0	0	0
	28-33	22-35	---	5.1-6.5	0	0	0	0	0
	33-48	18-35	---	5.1-6.0	0	0	0	0	0
	48-66	18-35	5.2-12	5.1-6.0	0	0	0	0	0
	66-73	16-35	---	5.3-6.0	0	0	0	0	0
	73-83	11-27	---	5.1-5.5	0	0	0	0	0
	83-109	11-27	---	5.1-5.5	0	0	0	0	0
862:									
Toadtown gravelly loam-----	0-1	---	---	---	---	0	0	0	0
	1-6	15-25	32-41	5.8-6.5	0	0	0	0	0
	6-15	22-37	9.7-16	5.8-6.5	0	0	0	0	0
	15-32	40-60	12-19	5.1-6.5	0	0	0	0	0
	32-43	40-60	12-19	5.1-6.5	0	0	0	0	0
	43-55	18-37	5.2-10	5.1-6.5	0	0	0	0	0
	55-80	18-37	5.2-10	5.1-6.5	0	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay Pct	Cation- exchange capacity meq/100g	Soil reaction pH	Calcium carbonate Pct	Gypsum Pct	Salinity dS/m	Sodium adsorption ratio
	In	Pct							
862:									
Powellton silt loam-----	0-1	---	---	---	---	0	0	0	0
	1-3	18-24	9.3-13	5.1-6.5	0	0	0	0	0
	3-9	18-24	8.6-13	5.1-6.5	0	0	0	0	0
	9-19	22-35	---	5.1-6.5	0	0	0	0	0
	19-28	22-35	---	5.1-6.5	0	0	0	0	0
	28-33	22-35	---	5.1-6.5	0	0	0	0	0
	33-48	18-35	---	5.1-6.0	0	0	0	0	0
	48-66	18-35	5.2-12	5.1-6.0	0	0	0	0	0
	66-73	16-35	---	5.3-6.0	0	0	0	0	0
	73-83	11-27	---	5.1-5.5	0	0	0	0	0
	83-109	11-27	---	5.1-5.5	0	0	0	0	0
863:									
Toadtown gravelly loam-----	0-1	---	---	---	---	0	0	0	0
	1-6	15-25	32-41	5.8-6.5	0	0	0	0	0
	6-15	22-37	9.7-16	5.8-6.5	0	0	0	0	0
	15-32	40-60	12-19	5.1-6.5	0	0	0	0	0
	32-43	40-60	12-19	5.1-6.5	0	0	0	0	0
	43-55	18-37	5.2-10	5.1-6.5	0	0	0	0	0
	55-80	18-37	5.2-10	5.1-6.5	0	0	0	0	0
Powellton silt loam-----									
	0-1	---	---	---	---	0	0	0	0
	1-3	18-24	9.3-13	5.1-6.5	0	0	0	0	0
	3-9	18-24	8.6-13	5.1-6.5	0	0	0	0	0
	9-19	22-35	---	5.1-6.5	0	0	0	0	0
	19-28	22-35	---	5.1-6.5	0	0	0	0	0
	28-33	22-35	---	5.1-6.5	0	0	0	0	0
	33-48	18-35	---	5.1-6.0	0	0	0	0	0
	48-66	18-35	5.2-12	5.1-6.0	0	0	0	0	0
	66-73	16-35	---	5.3-6.0	0	0	0	0	0
	73-83	11-27	---	5.1-5.5	0	0	0	0	0
	83-109	11-27	---	5.1-5.5	0	0	0	0	0
880:									
Sites taxadjunct gravelly loam-----	0-1	---	---	---	---	0	0	0	0
	1-3	16-25	20-30	5.8-6.5	0	0	0	0	0
	3-10	19-30	12-20	5.4-6.5	0	0	0	0	0
	10-21	38-50	9.0-12	5.0-6.5	0	0	0	0	0
	21-34	38-50	9.0-12	5.0-6.5	0	0	0	0	0
	34-59	45-55	9.0-12	5.0-6.5	0	0	0	0	0
	59-72	45-55	9.0-12	5.0-6.5	0	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay Pct	Cation- exchange capacity meq/100g	Soil reaction pH	Calcium carbonate Pct	Gypsum Pct	Salinity dS/m	Sodium adsorption ratio
	In	Pct							
880:									
Jocal taxadjunct gravelly loam-----	0-3	---	---	---	---	0	0	0	0
	3-4	9-17	12-20	5.5-6.3	0	0	0	0	0
	4-9	10-22	12-20	5.0-6.4	0	0	0	0	0
	9-19	15-30	9.0-12	5.8-6.3	0	0	0	0	0
	19-33	15-30	9.0-12	5.8-6.3	0	0	0	0	0
	33-46	15-30	2.0-10	4.8-6.3	0	0	0	0	0
	46-52	15-30	2.0-10	4.8-5.6	0	0	0	0	0
	52-68	---	---	---	0	0	0	0	0
881:									
Sites taxadjunct gravelly loam-----	0-1	---	---	---	0	0	0	0	0
	1-3	16-25	20-30	5.8-6.5	0	0	0	0	0
	3-10	19-30	12-20	5.4-6.5	0	0	0	0	0
	10-21	38-50	9.0-12	5.0-6.5	0	0	0	0	0
	21-34	38-50	9.0-12	5.0-6.5	0	0	0	0	0
	34-59	45-55	9.0-12	5.0-6.5	0	0	0	0	0
	59-72	45-55	9.0-12	5.0-6.5	0	0	0	0	0
Jocal taxadjunct gravelly loam-----	0-3	---	---	---	0	0	0	0	0
	3-4	9-17	12-20	5.5-6.3	0	0	0	0	0
	4-9	10-22	12-20	5.0-6.4	0	0	0	0	0
	9-19	15-30	9.0-12	5.8-6.3	0	0	0	0	0
	19-33	15-30	9.0-12	5.8-6.3	0	0	0	0	0
	33-46	15-30	2.0-10	4.8-6.3	0	0	0	0	0
	46-52	15-30	2.0-10	4.8-5.6	0	0	0	0	0
	52-68	---	---	---	0	0	0	0	0
882:									
Sites taxadjunct gravelly loam-----	0-1	---	---	---	0	0	0	0	0
	1-3	16-25	20-30	5.8-6.5	0	0	0	0	0
	3-10	19-30	12-20	5.4-6.5	0	0	0	0	0
	10-21	38-50	9.0-12	5.0-6.5	0	0	0	0	0
	21-34	38-50	9.0-12	5.0-6.5	0	0	0	0	0
	34-59	45-55	9.0-12	5.0-6.5	0	0	0	0	0
	59-72	45-55	9.0-12	5.0-6.5	0	0	0	0	0
Jocal taxadjunct gravelly loam-----	0-3	---	---	---	0	0	0	0	0
	3-4	9-17	12-20	5.5-6.3	0	0	0	0	0
	4-9	10-22	12-20	5.0-6.4	0	0	0	0	0
	9-19	15-30	9.0-12	5.8-6.3	0	0	0	0	0
	19-33	15-30	9.0-12	5.8-6.3	0	0	0	0	0
	33-46	15-30	2.0-10	4.8-6.3	0	0	0	0	0
	46-52	15-30	2.0-10	4.8-5.6	0	0	0	0	0
	52-68	---	---	---	0	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
883:								
Sites taxadjunct gravelly loam-----	0-1	---	---	---	0	0	0	0
	1-3	16-25	20-30	5.8-6.5	0	0	0	0
	3-10	19-30	12-20	5.4-6.5	0	0	0	0
	10-21	38-50	9.0-12	5.0-6.5	0	0	0	0
	21-34	38-50	9.0-12	5.0-6.5	0	0	0	0
	34-59	45-55	9.0-12	5.0-6.5	0	0	0	0
	59-72	45-55	9.0-12	5.0-6.5	0	0	0	0
Jocal taxadjunct gravelly loam-----	0-3	---	---	---	0	0	0	0
	3-4	9-17	12-20	5.5-6.3	0	0	0	0
	4-9	10-22	12-20	5.0-6.4	0	0	0	0
	9-19	15-30	9.0-12	5.8-6.3	0	0	0	0
	19-33	15-30	9.0-12	5.8-6.3	0	0	0	0
	33-46	15-30	2.0-10	4.8-6.3	0	0	0	0
	46-52	15-30	2.0-10	4.8-5.6	0	0	0	0
	52-68	---	---	---	0	0	0	0
885:								
Rogerville silt loam-----	0-2	---	---	---	0	0	0	0
	2-7	11-27	10-20	4.5-6.5	0	0	0	0
	7-13	30-38	10-20	5.6-6.5	0	0	0	0
	13-24	35-65	1.0-10	4.5-6.5	0	0	0	0
	24-34	35-65	1.0-10	4.5-6.5	0	0	0	0
	34-42	35-65	1.0-10	4.5-6.5	0	0	0	0
	42-51	28-55	1.0-10	4.5-7.3	0	0	0	0
	51-55	---	---	---	0	0	0	0
886:								
Rogerville silt loam-----	0-2	---	---	---	0	0	0	0
	2-7	11-27	10-20	4.5-6.5	0	0	0	0
	7-13	30-38	10-20	5.6-6.5	0	0	0	0
	13-24	35-65	1.0-10	4.5-6.5	0	0	0	0
	24-34	35-65	1.0-10	4.5-6.5	0	0	0	0
	34-42	35-65	1.0-10	4.5-6.5	0	0	0	0
	42-51	28-55	1.0-10	4.5-7.3	0	0	0	0
	51-55	---	---	---	0	0	0	0
892:								
Rogerville silt loam-----	0-2	---	---	---	0	0	0	0
	2-7	11-27	10-20	4.5-6.5	0	0	0	0
	7-13	30-38	10-20	5.6-6.5	0	0	0	0
	13-24	35-65	1.0-10	4.5-6.5	0	0	0	0
	24-34	35-65	1.0-10	4.5-6.5	0	0	0	0
	34-42	35-65	1.0-10	4.5-6.5	0	0	0	0
	42-51	28-55	1.0-10	4.5-7.3	0	0	0	0
	51-55	---	---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
893:								
Rogerville silt loam-----	0-2	---	---	---	0	0	0	0
	2-7	11-27	10-20	4.5-6.5	0	0	0	0
	7-13	30-38	10-20	5.6-6.5	0	0	0	0
	13-24	35-65	1.0-10	4.5-6.5	0	0	0	0
	24-34	35-65	1.0-10	4.5-6.5	0	0	0	0
	34-42	35-65	1.0-10	4.5-6.5	0	0	0	0
	42-51	28-55	1.0-10	4.5-7.3	0	0	0	0
	51-55	---	---	---	0	0	0	0
902:								
Lava flows, Lovejoy basalt.								
Lumpkin gravelly medial sandy loam-----	0-3	8-12	---	5.1-6.5	0	0	0	0
	3-8	9-18	35-45	5.1-6.5	0	0	0	0
	8-14	9-18	35-45	5.1-6.5	0	0	0	0
	14	---	---	---	0	0	0	0
903:								
Mudwash gravelly medial sandy loam-----	0-1	---	---	---	0	0	0	0
	1-4	---	---	---	0	0	0	0
	4-8	8-18	35-45	5.1-6.5	0	0	0	0
	8-13	8-18	35-45	5.1-6.5	0	0	0	0
	13-26	12-22	35-45	4.5-6.5	0	0	0	0
	26-35	18-38	35-55	4.0-6.5	0	0	0	0
	35-52	18-38	35-55	4.0-6.5	0	0	0	0
	52-72	15-28	35-55	4.0-6.0	0	0	0	0
	72-89	---	---	---	0	0	0	0
Timberisland very gravelly medial sandy loam	0-2	---	---	---	0	0	0	0
	2-3	---	---	---	0	0	0	0
	3-6	5-18	35-90	5.1-6.5	0	0	0	0
	6-14	5-18	35-55	5.1-6.5	0	0	0	0
	14-25	8-18	35-55	5.1-6.5	0	0	0	0
	25-35	10-22	35-55	4.5-6.5	0	0	0	0
	35-48	10-22	35-55	4.5-6.5	0	0	0	0
	48	---	---	---	0	0	0	0
Lavatop gravelly medial fine sandy loam-----	0-0.5	---	---	---	0	0	0	0
	0.5-4	18-20	35-45	5.1-6.0	0	0	0	0
	4-15	18-20	35-45	5.1-5.5	0	0	0	0
	15-26	18-20	35-45	5.1-5.5	0	0	0	0
	26	---	---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay Pct	Cation- exchange capacity meq/100g	Soil reaction pH	Calcium carbonate Pct	Gypsum Pct	Salinity ds/m	Sodium adsorption ratio
	In	Pct							
904: Lava flows, Lovejoy basalt.									
Lavatop gravelly medial fine sandy loam-----	0-0.5	---	---	---	---	0	0	0	0
	0.5-4	18-20	35-45	5.1-6.0	---	0	0	0	0
	4-15	18-20	35-45	5.1-5.5	---	0	0	0	0
	15-26	18-20	35-45	5.1-5.5	---	0	0	0	0
	26	---	---	---	---	0	0	0	0
905: Lava flows, Lovejoy basalt.									
Lumpkin gravelly medial sandy loam-----	0-3	8-12	---	5.1-6.5	---	0	0	0	0
	3-8	9-18	35-45	5.1-6.5	---	0	0	0	0
	8-14	9-18	35-45	5.1-6.5	---	0	0	0	0
	14	---	---	---	---	0	0	0	0
906: Lava flows, Lovejoy basalt.									
Lumpkin gravelly medial sandy loam-----	0-3	8-12	---	5.1-6.5	---	0	0	0	0
	3-8	9-18	35-45	5.1-6.5	---	0	0	0	0
	8-14	9-18	35-45	5.1-6.5	---	0	0	0	0
	14	---	---	---	---	0	0	0	0
911: Endoaquolls loam-----	0-3	16-30	25-35	6.1-7.3	---	0	0	0	0
	3-8	16-30	25-35	6.1-7.3	---	0	0	0	0
	8-17	16-30	25-35	6.1-7.3	---	0	0	0	0
	17-28	35-50	22-32	6.6-7.3	---	0	0	0	0
	28-43	35-50	25-32	6.6-7.3	---	0	0	0	0
	43-58	20-50	15-35	6.1-7.8	---	0	0	0	0
	58-73	20-50	15-25	6.1-7.8	---	0	0	0	0
923: Powderhouse medial sandy loam-----	0-2	---	---	---	---	0	0	0	0
	2-4	8-12	30-85	5.0-6.5	---	0	0	0	0
	4-11	8-12	30-45	5.5-6.5	---	0	0	0	0
	11-27	10-18	30-45	5.0-6.5	---	0	0	0	0
	27-36	10-12	30-45	4.5-5.5	---	0	0	0	0
	36-82	---	---	---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay Cation- exchange capacity	Soil reaction pH	Calcium carbonate Pct	Gypsum Pct	Salinity dS/m	Sodium adsorption ratio
	In	Pct						
923:								
McNair medial coarse sandy loam-----	0-3	---	---	---	0	0	0	0
	3-6	5-12	30-85	5.1-7.3	0	0	0	0
	6-16	5-12	30-45	5.1-7.3	0	0	0	0
	16-25	10-18	30-45	4.5-6.5	0	0	0	0
	25-33	10-25	30-45	4.5-6.5	0	0	0	0
	33-48	10-25	30-45	4.5-6.5	0	0	0	0
	48-57	8-25	30-45	4.5-5.5	0	0	0	0
	57-88	---	---	---	0	0	0	0
Greenwell medial sandy loam-----	0-2	---	---	---	0	0	0	0
	2-3	---	---	---	0	0	0	0
	3-5	8-11	30-85	4.5-6.5	0	0	0	0
	5-10	8-11	30-85	4.5-6.5	0	0	0	0
	10-18	10-15	30-45	4.5-6.5	0	0	0	0
	18-23	12-18	30-45	4.5-5.5	0	0	0	0
	23-32	12-18	30-45	4.5-5.5	0	0	0	0
	32	---	---	---	0	0	0	0
924:								
Powderhouse medial sandy loam-----	0-2	---	---	---	0	0	0	0
	2-4	8-12	30-85	5.0-6.5	0	0	0	0
	4-11	8-12	30-45	5.5-6.5	0	0	0	0
	11-27	10-18	30-45	5.0-6.5	0	0	0	0
	27-36	10-12	30-45	4.5-5.5	0	0	0	0
	36-82	---	---	---	0	0	0	0
McNair medial coarse sandy loam-----	0-3	---	---	---	0	0	0	0
	3-6	5-12	30-85	5.1-7.3	0	0	0	0
	6-16	5-12	30-45	5.1-7.3	0	0	0	0
	16-25	10-18	30-45	4.5-6.5	0	0	0	0
	25-33	10-25	30-45	4.5-6.5	0	0	0	0
	33-48	10-25	30-45	4.5-6.5	0	0	0	0
	48-57	8-25	30-45	4.5-5.5	0	0	0	0
	57-88	---	---	---	0	0	0	0
Greenwell medial sandy loam-----	0-2	---	---	---	0	0	0	0
	2-3	---	---	---	0	0	0	0
	3-5	8-11	30-85	4.5-6.5	0	0	0	0
	5-10	8-11	30-85	4.5-6.5	0	0	0	0
	10-18	10-15	30-45	4.5-6.5	0	0	0	0
	18-23	12-18	30-45	4.5-5.5	0	0	0	0
	23-32	12-18	30-45	4.5-5.5	0	0	0	0
	32	---	---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
925:								
Powderhouse medial sandy loam-----	0-2	---	---	---	0	0	0	0
	2-4	8-12	30-85	5.0-6.5	0	0	0	0
	4-11	8-12	30-45	5.5-6.5	0	0	0	0
	11-27	10-18	30-45	5.0-6.5	0	0	0	0
	27-36	10-12	30-45	4.5-5.5	0	0	0	0
	36-82	---	---	---	0	0	0	0
McNair medial coarse sandy loam-----	0-3	---	---	---	0	0	0	0
	3-6	5-12	30-85	5.1-7.3	0	0	0	0
	6-16	5-12	30-45	5.1-7.3	0	0	0	0
	16-25	10-18	30-45	4.5-6.5	0	0	0	0
	25-33	10-25	30-45	4.5-6.5	0	0	0	0
	33-48	10-25	30-45	4.5-6.5	0	0	0	0
	48-57	8-25	30-45	4.5-5.5	0	0	0	0
	57-88	---	---	---	0	0	0	0
Greenwell medial sandy loam-----	0-2	---	---	---	0	0	0	0
	2-3	---	---	---	0	0	0	0
	3-5	8-11	30-85	4.5-6.5	0	0	0	0
	5-10	8-11	30-85	4.5-6.5	0	0	0	0
	10-18	10-15	30-45	4.5-6.5	0	0	0	0
	18-23	12-18	30-45	4.5-5.5	0	0	0	0
	23-32	12-18	30-45	4.5-5.5	0	0	0	0
	32	---	---	---	0	0	0	0
930:								
Shakeridge gravelly medial coarse sandy loam	0-2	---	---	---	0	0	0	0
	2-4	5-12	35-60	5.6-6.5	0	0	0	0
	4-7	5-12	35-55	5.6-6.5	0	0	0	0
	7-19	5-18	35-55	4.5-6.5	0	0	0	0
	19-25	5-18	35-55	4.5-6.5	0	0	0	0
	25-36	5-18	35-55	4.5-6.1	0	0	0	0
	36-55	5-18	35-55	4.5-6.0	0	0	0	0
	55-71	5-18	35-55	4.5-6.1	0	0	0	0
	71-87	5-18	35-55	4.5-6.0	0	0	0	0
Timberisland very gravelly medial sandy loam	0-2	---	---	---	0	0	0	0
	2-3	---	---	---	0	0	0	0
	3-6	5-18	35-90	5.1-6.5	0	0	0	0
	6-14	5-18	35-55	5.1-6.5	0	0	0	0
	14-25	8-18	35-55	5.1-6.5	0	0	0	0
	25-35	10-22	35-55	4.5-6.5	0	0	0	0
	35-48	10-22	35-55	4.5-6.5	0	0	0	0
	48	---	---	---	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
931:								
Shakeridge gravelly medial coarse sandy loam	0-2	---	---	---	0	0	0	0
	2-4	5-12	35-60	5.6-6.5	0	0	0	0
	4-7	5-12	35-55	5.6-6.5	0	0	0	0
	7-19	5-18	35-55	4.5-6.5	0	0	0	0
	19-25	5-18	35-55	4.5-6.5	0	0	0	0
	25-36	5-18	35-55	4.5-6.1	0	0	0	0
	36-55	5-18	35-55	4.5-6.0	0	0	0	0
	55-71	5-18	35-55	4.5-6.1	0	0	0	0
	71-87	5-18	35-55	4.5-6.0	0	0	0	0
Mudwash gravelly medial sandy loam-----	0-1	---	---	---	0	0	0	0
	1-4	---	---	---	0	0	0	0
	4-8	8-18	35-45	5.1-6.5	0	0	0	0
	8-13	8-18	35-45	5.1-6.5	0	0	0	0
	13-26	12-22	35-45	4.5-6.5	0	0	0	0
	26-35	18-38	35-55	4.0-6.5	0	0	0	0
	35-52	18-38	35-55	4.0-6.5	0	0	0	0
	52-72	15-28	35-55	4.0-6.0	0	0	0	0
	72-89	---	---	---	0	0	0	0
Timberisland very gravelly medial sandy loam	0-2	---	---	---	0	0	0	0
	2-3	---	---	---	0	0	0	0
	3-6	5-18	35-90	5.1-6.5	0	0	0	0
	6-14	5-18	35-55	5.1-6.5	0	0	0	0
	14-25	8-18	35-55	5.1-6.5	0	0	0	0
	25-35	10-22	35-55	4.5-6.5	0	0	0	0
	35-48	10-22	35-55	4.5-6.5	0	0	0	0
	48	---	---	---	0	0	0	0
932:								
Shakeridge gravelly medial coarse sandy loam	0-2	---	---	---	0	0	0	0
	2-4	5-12	35-60	5.6-6.5	0	0	0	0
	4-7	5-12	35-55	5.6-6.5	0	0	0	0
	7-19	5-18	35-55	4.5-6.5	0	0	0	0
	19-25	5-18	35-55	4.5-6.5	0	0	0	0
	25-36	5-18	35-55	4.5-6.1	0	0	0	0
	36-55	5-18	35-55	4.5-6.0	0	0	0	0
	55-71	5-18	35-55	4.5-6.1	0	0	0	0
	71-87	5-18	35-55	4.5-6.0	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
932:								
Mudwash gravelly medial sandy loam-----	0-1	---	---	---	0	0	0	0
	1-4	---	---	---	0	0	0	0
	4-8	8-18	35-45	5.1-6.5	0	0	0	0
	8-13	8-18	35-45	5.1-6.5	0	0	0	0
	13-26	12-22	35-45	4.5-6.5	0	0	0	0
	26-35	18-38	35-55	4.0-6.5	0	0	0	0
	35-52	18-38	35-55	4.0-6.5	0	0	0	0
	52-72	15-28	35-55	4.0-6.0	0	0	0	0
	72-89	---	---	---	0	0	0	0
933:								
Shakeridge gravelly medial coarse sandy loam	0-2	---	---	---	0	0	0	0
	2-4	5-12	35-60	5.6-6.5	0	0	0	0
	4-7	5-12	35-55	5.6-6.5	0	0	0	0
	7-19	5-18	35-55	4.5-6.5	0	0	0	0
	19-25	5-18	35-55	4.5-6.5	0	0	0	0
	25-36	5-18	35-55	4.5-6.1	0	0	0	0
	36-55	5-18	35-55	4.5-6.0	0	0	0	0
	55-71	5-18	35-55	4.5-6.1	0	0	0	0
	71-87	5-18	35-55	4.5-6.0	0	0	0	0
934:								
Mudwash gravelly medial sandy loam-----	0-1	---	---	---	0	0	0	0
	1-4	---	---	---	0	0	0	0
	4-8	8-18	35-45	5.1-6.5	0	0	0	0
	8-13	8-18	35-45	5.1-6.5	0	0	0	0
	13-26	12-22	35-45	4.5-6.5	0	0	0	0
	26-35	18-38	35-55	4.0-6.5	0	0	0	0
	35-52	18-38	35-55	4.0-6.5	0	0	0	0
	52-72	15-28	35-55	4.0-6.0	0	0	0	0
	72-89	---	---	---	0	0	0	0
939:								
Fluvaquentic Humaquepts very fine sandy loam	0-7	12-15	11-14	5.5-6.0	0	0	0	0
	7-15	12-15	11-14	5.5-6.0	0	0	0	0
	15-22	20-25	17-22	5.5-6.0	0	0	0	0
	22-29	20-25	17-21	5.5-6.0	0	0	0	0
	29-36	20-25	16-20	5.5-6.0	0	0	0	0
	36-45	27-30	21-24	5.1-5.8	0	0	0	0
	45-60	20-27	16-21	5.1-5.8	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay Pct	Cation- exchange capacity meq/100g	Soil reaction pH	Calcium carbonate Pct	Gypsum Pct	Salinity dS/m	Sodium adsorption ratio
	In	Pct							
940:									
Dejonah gravelly loam-----	0-1	---	---	---	---	0	0	0	0
	1-4	10-18	20-35	5.1-6.5	0	0	0	0	0
	4-10	18-25	20-35	5.1-6.5	0	0	0	0	0
	10-16	15-27	15-35	4.5-6.5	0	0	0	0	0
	16-28	15-27	4.0-10	4.5-6.5	0	0	0	0	0
	28-37	15-27	4.0-10	4.5-6.5	0	0	0	0	0
	37-53	8-20	4.0-10	4.5-6.0	0	0	0	0	0
	53-60	8-20	4.0-10	4.5-6.0	0	0	0	0	0
Stagpoint loam-----	0-0.5	---	---	---	0	0	0	0	0
	0.5-4	8-18	20-35	5.1-6.5	0	0	0	0	0
	4-10	10-25	15-20	5.1-6.5	0	0	0	0	0
	10-17	10-25	10-20	5.1-6.5	0	0	0	0	0
	17-23	15-32	4.0-20	4.5-6.5	0	0	0	0	0
	23-34	15-32	4.0-20	4.5-6.5	0	0	0	0	0
	34-49	12-18	4.0-20	4.5-6.0	0	0	0	0	0
	49-64	12-18	4.0-20	4.5-6.0	0	0	0	0	0
	64-86	9-15	4.0-20	4.5-6.0	0	0	0	0	0
941:									
Dejonah gravelly loam-----	0-1	---	---	---	0	0	0	0	0
	1-4	10-18	20-35	5.1-6.5	0	0	0	0	0
	4-10	18-25	20-35	5.1-6.5	0	0	0	0	0
	10-16	15-27	15-35	4.5-6.5	0	0	0	0	0
	16-28	15-27	4.0-10	4.5-6.5	0	0	0	0	0
	28-37	15-27	4.0-10	4.5-6.5	0	0	0	0	0
	37-53	8-20	4.0-10	4.5-6.0	0	0	0	0	0
	53-60	8-20	4.0-10	4.5-6.0	0	0	0	0	0
Stagpoint loam-----	0-0.5	---	---	---	0	0	0	0	0
	0.5-4	8-18	20-35	5.1-6.5	0	0	0	0	0
	4-10	10-25	15-20	5.1-6.5	0	0	0	0	0
	10-17	10-25	10-20	5.1-6.5	0	0	0	0	0
	17-23	15-32	4.0-20	4.5-6.5	0	0	0	0	0
	23-34	15-32	4.0-20	4.5-6.5	0	0	0	0	0
	34-49	12-18	4.0-20	4.5-6.0	0	0	0	0	0
	49-64	12-18	4.0-20	4.5-6.0	0	0	0	0	0
	64-86	9-15	4.0-20	4.5-6.0	0	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
942:								
Stagpoint loam-----	0-0.5	---	---	---	0	0	0	0
	0.5-4	8-18	20-35	5.1-6.5	0	0	0	0
	4-10	10-25	15-20	5.1-6.5	0	0	0	0
	10-17	10-25	10-20	5.1-6.5	0	0	0	0
	17-23	15-32	4.0-20	4.5-6.5	0	0	0	0
	23-34	15-32	4.0-20	4.5-6.5	0	0	0	0
	34-49	12-18	4.0-20	4.5-6.0	0	0	0	0
	49-64	12-18	4.0-20	4.5-6.0	0	0	0	0
	64-86	9-15	4.0-20	4.5-6.0	0	0	0	0
Dejonah gravelly loam-----	0-1	---	---	---	0	0	0	0
	1-4	10-18	20-35	5.1-6.5	0	0	0	0
	4-10	18-25	20-35	5.1-6.5	0	0	0	0
	10-16	15-27	15-35	4.5-6.5	0	0	0	0
	16-28	15-27	4.0-10	4.5-6.5	0	0	0	0
	28-37	15-27	4.0-10	4.5-6.5	0	0	0	0
	37-53	8-20	4.0-10	4.5-6.0	0	0	0	0
	53-60	8-20	4.0-10	4.5-6.0	0	0	0	0
948:								
Stagpoint loam-----	0-0.5	---	---	---	0	0	0	0
	0.5-4	8-18	20-35	5.1-6.5	0	0	0	0
	4-10	10-25	15-20	5.1-6.5	0	0	0	0
	10-17	10-25	10-20	5.1-6.5	0	0	0	0
	17-23	15-32	4.0-20	4.5-6.5	0	0	0	0
	23-34	15-32	4.0-20	4.5-6.5	0	0	0	0
	34-49	12-18	4.0-20	4.5-6.0	0	0	0	0
	49-64	12-18	4.0-20	4.5-6.0	0	0	0	0
	64-86	9-15	4.0-20	4.5-6.0	0	0	0	0
Dejonah gravelly loam-----	0-1	---	---	---	0	0	0	0
	1-4	10-18	20-35	5.1-6.5	0	0	0	0
	4-10	18-25	20-35	5.1-6.5	0	0	0	0
	10-16	15-27	15-35	4.5-6.5	0	0	0	0
	16-28	15-27	4.0-10	4.5-6.5	0	0	0	0
	28-37	15-27	4.0-10	4.5-6.5	0	0	0	0
	37-53	8-20	4.0-10	4.5-6.0	0	0	0	0
	53-60	8-20	4.0-10	4.5-6.0	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay Pct	Cation- exchange capacity meq/100g	Soil reaction pH	Calcium carbonate Pct	Gypsum Pct	Salinity dS/m	Sodium adsorption ratio
	In	Pct							
949:									
Rogerville taxadjunct fine sandy loam-----	0-2	---	---	---	---	0	0	0	0
	2-4	8-12	1.6-2.4	4.5-6.5	0	0	0	0	0
	4-7	15-22	3.0-4.5	5.1-6.5	0	0	0	0	0
	7-21	15-22	3.0-4.5	5.1-6.5	0	0	0	0	0
	21-26	15-22	3.0-4.5	5.1-6.5	0	0	0	0	0
	26-33	24-28	4.8-5.7	4.5-5.5	0	0	0	0	0
	33-44	24-28	---	4.5-5.5	0	0	0	0	0
	44-57	24-28	---	4.5-5.5	0	0	0	0	0
	57	---	---	---	0	0	0	0	0
950:									
Lumpkin taxadjunct very gravelly medial very fine sandy loam-----	0-4	10-15	12-30	4.5-6.1	0	0	0	0	0
	4-9	14-18	16-32	5.6-6.1	0	0	0	0	0
	9	---	---	---	---	---	---	---	---
Rock outcrop, olivine basalt, andesite, or mudflow.									
Powderhouse medial sandy loam-----	0-2	---	---	---	0	0	0	0	0
	2-4	8-12	30-85	5.0-6.5	0	0	0	0	0
	4-11	8-12	30-45	5.5-6.5	0	0	0	0	0
	11-27	10-18	30-45	5.0-6.5	0	0	0	0	0
	27-36	10-12	30-45	4.5-5.5	0	0	0	0	0
	36-82	---	---	---	0	0	0	0	0
951:									
Lumpkin taxadjunct very gravelly medial very fine sandy loam-----	0-4	10-15	12-30	4.5-6.1	0	0	0	0	0
	4-9	14-18	16-32	5.6-6.1	0	0	0	0	0
	9	---	---	---	---	---	---	---	---
Rock outcrop, andesite.									
Powderhouse medial sandy loam-----	0-2	---	---	---	0	0	0	0	0
	2-4	8-12	30-85	5.0-6.5	0	0	0	0	0
	4-11	8-12	30-45	5.5-6.5	0	0	0	0	0
	11-27	10-18	30-45	5.0-6.5	0	0	0	0	0
	27-36	10-12	30-45	4.5-5.5	0	0	0	0	0
	36-82	---	---	---	0	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth		Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m		
960:									
Surnuf gravelly loam, high elevation-----	0-0.5	---	---	---	0	0	0	0	0
	0.5-6	10-18	3.8-6.8	5.6-6.5	0	0	0	0	0
	6-10	18-25	6.5-9.1	5.1-6.0	0	0	0	0	0
	10-20	35-40	12-14	5.1-6.0	0	0	0	0	0
	20-28	35-40	12-14	5.1-6.0	0	0	0	0	0
	28-38	40-60	14-22	5.1-6.0	0	0	0	0	0
	38-52	40-60	14-22	5.1-6.0	0	0	0	0	0
	52-67	40-60	14-22	5.1-6.0	0	0	0	0	0
	67-84	40-60	14-22	5.1-6.0	0	0	0	0	0
961:									
Surnuf gravelly loam, high elevation-----	0-0.5	---	---	---	0	0	0	0	0
	0.5-6	10-18	3.8-6.8	5.6-6.5	0	0	0	0	0
	6-10	18-25	6.5-9.1	5.1-6.0	0	0	0	0	0
	10-20	35-40	12-14	5.1-6.0	0	0	0	0	0
	20-28	35-40	12-14	5.1-6.0	0	0	0	0	0
	28-38	40-60	14-22	5.1-6.0	0	0	0	0	0
	38-52	40-60	14-22	5.1-6.0	0	0	0	0	0
	52-67	40-60	14-22	5.1-6.0	0	0	0	0	0
	67-84	40-60	14-22	5.1-6.0	0	0	0	0	0
962:									
Surnuf gravelly loam, high elevation-----	0-0.5	---	---	---	0	0	0	0	0
	0.5-6	10-18	3.8-6.8	5.6-6.5	0	0	0	0	0
	6-10	18-25	6.5-9.1	5.1-6.0	0	0	0	0	0
	10-20	35-40	12-14	5.1-6.0	0	0	0	0	0
	20-28	35-40	12-14	5.1-6.0	0	0	0	0	0
	28-38	40-60	14-22	5.1-6.0	0	0	0	0	0
	38-52	40-60	14-22	5.1-6.0	0	0	0	0	0
	52-67	40-60	14-22	5.1-6.0	0	0	0	0	0
	67-84	40-60	14-22	5.1-6.0	0	0	0	0	0
963:									
Surnuf gravelly loam, high elevation-----	0-0.5	---	---	---	0	0	0	0	0
	0.5-6	10-18	3.8-6.8	5.6-6.5	0	0	0	0	0
	6-10	18-25	6.5-9.1	5.1-6.0	0	0	0	0	0
	10-20	35-40	12-14	5.1-6.0	0	0	0	0	0
	20-28	35-40	12-14	5.1-6.0	0	0	0	0	0
	28-38	40-60	14-22	5.1-6.0	0	0	0	0	0
	38-52	40-60	14-22	5.1-6.0	0	0	0	0	0
	52-67	40-60	14-22	5.1-6.0	0	0	0	0	0
	67-84	40-60	14-22	5.1-6.0	0	0	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	dS/m	
990. Riverwash, frequently flooded								
991: Xerofluvents sandy loam, frequently flooded	0-6	2-10	10-20	6.1-7.3	0	0	0	0
	6-14	1-8	7.0-15	6.6-8.4	0	0	0	0
	14-26	1-8	7.0-15	6.6-8.4	0	0	0	0
	26-37	1-8	7.0-15	6.6-8.4	0	0	0	0
	37-43	4-12	10-20	6.6-7.8	0	0	0	0
	43-47	1-8	7.0-15	6.6-8.4	0	0	0	0
	47-54	1-8	7.0-15	6.6-8.4	0	0	0	0
	54-72	1-8	7.0-15	6.6-8.4	0	0	0	0
	72-80	1-8	7.0-15	6.6-8.4	0	0	0	0
995. Pits, gravel								
996. Dumps, excavated material								
997. Pits								
998. Dumps, landfill								
999. Water								
DAM. Dam, manmade								

Table 24.--Water Features

(See text for definitions of terms used in this table. The annual frequency of ponding and flooding is the most limiting monthly class listed for the soil. Frequent flooding is more limiting than occasional flooding, and occasional flooding is more limiting than rare flooding. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
100: Anita clay-----	D	January	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	Brief	Occasional
		February	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	Brief	Occasional
		March	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	Brief	Occasional
		April	0.0-1.7	0.8-1.7	0.0-0.2	Brief	Occasional	Brief	Rare
		May	0.0-1.7	0.8-1.7	0.0-0.2	Very brief	Rare	---	None
		November	0.0-1.7	0.8-1.7	0.0-0.2	Brief	Occasional	---	None
		December	0.0-1.7	0.8-1.7	0.0-0.3	Long	Frequent	Brief	Rare
		December	0.0-1.7	0.8-1.7	0.0-0.3	Long	Frequent	Brief	Rare
Galt clay-----	D	January	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Brief	Occasional
		February	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Brief	Occasional
		March	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Brief	Occasional
		April	0.0-3.3	1.7-3.3	0.0-0.2	Long	Occasional	Brief	Rare
		May	0.0-3.3	1.7-3.3	0.0-0.2	Very brief	Rare	---	None
		November	0.0-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	---	None
		December	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Brief	Rare
		December	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Brief	Rare
104: Bosquejo clay-----	D	January	1.0-5.0	---	0.0-0.5	Brief	Frequent	Brief	Rare
		February	1.0-5.0	---	0.0-0.5	Brief	Frequent	Brief	Rare
		March	1.0-5.0	---	0.0-0.5	Brief	Frequent	Brief	Rare
		April	1.0-5.0	---	---	---	None	---	None
		May	1.0-5.0	---	---	---	None	---	None
		December	1.0-5.0	---	0.0-0.5	Brief	Frequent	Brief	Rare
		December	1.0-5.0	---	0.0-0.5	Brief	Frequent	Brief	Rare
105: Busacca clay loam-----	C	January	2.5-6.7	---	0.0-0.3	Brief	Occasional	Very brief	Rare
		February	2.5-6.7	---	0.0-0.3	Brief	Occasional	Very brief	Rare
		March	2.5-6.7	---	0.0-0.3	Brief	Occasional	Very brief	Rare
		April	2.5-6.7	---	---	---	None	---	None
		December	2.5-6.7	---	0.0-0.3	Brief	Occasional	Very brief	Rare
		December	2.5-6.7	---	0.0-0.3	Brief	Occasional	Very brief	Rare

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
108: Tuscan gravelly loam-----	D	January	0.2-1.7	0.8-1.7	---	---	None	---	None
		February	0.2-1.7	0.8-1.7	---	---	None	---	None
		March	0.2-1.7	0.8-1.7	---	---	None	---	None
		November	0.2-1.7	0.8-1.7	---	---	None	---	None
		December	0.2-1.7	0.8-1.7	---	---	None	---	None
Igo gravelly loam-----	D	January	0.2-0.8	0.3-0.8	---	---	None	---	None
		February	0.2-0.8	0.3-0.8	---	---	None	---	None
		March	0.2-0.8	0.3-0.8	---	---	None	---	None
		December	0.2-0.8	0.3-0.8	---	---	None	---	None
Anita clay-----	D	January	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	---	None
		February	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	---	None
		March	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	---	None
		April	0.0-1.7	0.8-1.7	0.0-0.2	Brief	Occasional	---	None
		May	0.0-1.7	0.8-1.7	0.0-0.2	Very brief	Rare	---	None
		November	0.0-1.7	0.8-1.7	0.0-0.2	Brief	Occasional	---	None
		December	0.0-1.7	0.8-1.7	0.0-0.3	Long	Frequent	---	None
109: Bosquejo clay loam-----	C	January	1.0-5.0	---	0.0-0.5	Brief	Occasional	Brief	Rare
		February	1.0-5.0	---	0.0-0.5	Brief	Occasional	Brief	Rare
		March	1.0-5.0	---	0.0-0.5	Brief	Occasional	Brief	Rare
		April	1.0-5.0	---	---	---	None	---	None
		May	1.0-5.0	---	---	---	None	---	None
		December	1.0-5.0	---	0.0-0.5	Brief	Occasional	Brief	Rare
110: Bosquejo silt loam, overwash, occasionally flooded-----	C	January	1.0-5.0	---	0.0-0.3	Brief	Occasional	Brief	Occasional
		February	1.0-5.0	---	0.0-0.3	Brief	Occasional	Brief	Occasional
		March	1.0-5.0	---	0.0-0.3	Brief	Occasional	Brief	Occasional
		April	1.0-5.0	---	---	---	None	---	None
		May	1.0-5.0	---	---	---	None	---	None
		December	1.0-5.0	---	0.0-0.3	Brief	Occasional	Brief	Occasional

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
111yu: Auburn loam-----	D	Jan-Dec	---	---	---	---	None	---	None
Sobrante loam-----	B	Jan-Dec	---	---	---	---	None	---	None
114yu: Auburn gravelly loam-----	D	Jan-Dec	---	---	---	---	None	---	None
Sobrante gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
118: Xerorthents, tailings-----	A	January	5.0-6.7	---	---	---	None	Brief	Occasional
		February	5.0-6.7	---	---	---	None	Brief	Occasional
		March	5.0-6.7	---	---	---	None	Brief	Occasional
		April	5.0-6.7	---	---	---	None	Very brief	Rare
		May	5.0-6.7	---	---	---	None	---	None
		June	5.0-6.7	---	---	---	None	---	None
		July	5.0-6.7	---	---	---	None	---	None
		December	5.0-6.7	---	---	---	None	Very brief	Rare
118co: Clear Lake clay, frequently flooded-----	D	January	4.0-6.0	>6.0	---	---	None	Long	Frequent
		February	4.0-6.0	>6.0	---	---	None	Long	Frequent
		March	4.0-6.0	>6.0	---	---	None	Long	Frequent
		April	4.0-6.0	>6.0	---	---	None	Long	Frequent
		December	4.0-6.0	>6.0	---	---	None	Long	Frequent
119: Xerorthents, tailings-----	A	January	5.0-6.7	---	---	---	None	Brief	Occasional
		February	5.0-6.7	---	---	---	None	Brief	Occasional
		March	5.0-6.7	---	---	---	None	Brief	Occasional
		April	5.0-6.7	---	---	---	None	Very brief	Rare
		May	5.0-6.7	---	---	---	None	---	None
		June	5.0-6.7	---	---	---	None	---	None
		July	5.0-6.7	---	---	---	None	---	None
		December	5.0-6.7	---	---	---	None	Very brief	Rare

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
119: Urban land.									
119yu: Auburn gravelly loam-----	D	Jan-Dec	---	---	---	---	None	---	None
Sobrante gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop.									
120: Gridley taxadjunct clay loam-----	D	January	0.4-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	Brief	Rare
		February	0.4-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	Brief	Rare
		March	0.4-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	Brief	Rare
		April	0.4-3.3	1.7-3.3	0.0-0.2	Brief	Rare	---	None
		November	---	---	0.0-0.2	Brief	Occasional	---	None
		December	0.4-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	Brief	Rare
121: Boga loam-----	C	January	1.7-6.7	5.0-6.7	0.0-0.1	Very brief	Occasional	---	None
		February	1.7-6.7	5.0-6.7	0.0-0.1	Very brief	Occasional	---	None
		March	1.7-6.7	5.0-6.7	0.0-0.1	Very brief	Occasional	---	None
		April	1.7-6.7	5.0-6.7	---	---	None	---	None
		May	1.7-6.7	5.0-6.7	---	---	None	---	None
		December	1.7-6.7	5.0-6.7	0.0-0.1	Very brief	Occasional	---	None
Loemstone loam-----	C	January	1.7-5.0	3.3-5.0	0.0-0.1	Very brief	Occasional	---	None
		February	1.5-5.0	3.3-5.0	0.0-0.1	Very brief	Occasional	---	None
		March	1.5-5.0	3.3-5.0	0.0-0.1	Very brief	Occasional	---	None
		April	1.5-5.0	3.3-5.0	---	---	None	---	None
		May	1.7-5.0	3.3-5.0	---	---	None	---	None
		December	1.7-5.0	3.3-5.0	0.0-0.1	Very brief	Occasional	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
121su: Columbia fine sandy loam, frequently flooded-----	C	January	3.0-5.0	5.0-5.0	---	---	None	Long	Frequent
		February	3.0-5.0	5.0-5.0	---	---	None	Long	Frequent
		March	3.0-5.0	5.0-5.0	---	---	None	Long	Frequent
		April	3.0-5.0	5.0-5.0	---	---	None	Long	Frequent
		December	3.0-5.0	5.0-5.0	---	---	None	Long	Frequent
125: Gridley taxadjunct loam-----	D	January	0.4-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	Brief	Rare
		February	0.4-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	Brief	Rare
		March	0.4-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	Brief	Rare
		April	0.4-3.3	1.7-3.3	0.0-0.2	Brief	Rare	---	None
		November	---	---	0.0-0.2	Brief	Occasional	---	None
		December	0.4-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	Brief	Rare
Calcic Haploxerolls sandy loam-----	B	January	0.9-5.0	1.7-5.0	---	---	None	Very brief	Rare
		February	0.9-5.0	1.7-5.0	---	---	None	Very brief	Rare
		March	0.9-5.0	1.7-5.0	---	---	None	Very brief	Rare
		April	0.9-5.0	1.7-5.0	---	---	None	---	None
		December	2.5-5.0	1.7-5.0	---	---	None	Very brief	Rare
126: Liveoak sandy loam-----	B	January	0.9-3.3	---	---	---	None	Very brief	Very rare
		February	0.9-5.0	---	---	---	None	Very brief	Very rare
		March	0.9-5.0	---	---	---	None	Very brief	Very rare
		April	3.3-5.4	---	---	---	None	Very brief	Very rare
		December	3.3-6.2	---	---	---	None	Very brief	Very rare
127: Gridley taxadjunct loam-----	D	January	0.4-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	Brief	Rare
		February	0.4-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	Brief	Rare
		March	0.4-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	Brief	Rare
		April	0.4-3.3	1.7-3.3	0.0-0.2	Brief	Rare	---	None
		November	---	---	0.0-0.2	Brief	Occasional	---	None
		December	0.4-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	Brief	Rare

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
130: Eastbiggs loam-----	C	January	1.2-3.3	1.7-3.3	---	---	None	---	None
		February	1.2-3.3	1.7-3.3	---	---	None	---	None
		March	1.2-3.3	1.7-3.3	---	---	None	---	None
		April	1.7-3.3	1.7-3.3	---	---	None	---	None
		December	1.2-3.3	1.7-3.3	---	---	None	---	None
133: Eastbiggs loam-----		C	January	1.2-3.3	1.7-3.3	---	---	None	---
	February		1.2-3.3	1.7-3.3	---	---	None	---	None
	March		1.2-3.3	1.7-3.3	---	---	None	---	None
	April		1.7-3.3	1.7-3.3	---	---	None	---	None
	December		1.2-3.3	1.7-3.3	---	---	None	---	None
Galt clay loam-----	D		January	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	---
		February	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	---	None
		March	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	---	None
		April	0.0-3.3	1.7-3.3	0.0-0.2	Long	Occasional	---	None
		May	0.0-3.3	1.7-3.3	0.0-0.2	Very brief	Rare	---	None
		November	0.0-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	---	None
		December	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	---	None
136: Duric Xerarents, cut-----		D	January	0.0-1.7	0.5-1.7	0.0-0.5	Long	Frequent	---
	February		0.0-1.7	0.5-1.7	0.0-0.5	Long	Frequent	---	None
	March		0.3-1.7	0.5-1.7	0.0-0.5	Long	Frequent	---	None
	April		0.3-1.7	0.5-1.7	0.0-0.2	Brief	Occasional	---	None
	November		---	---	0.0-0.2	Brief	Occasional	---	None
	December		0.0-1.7	0.5-1.7	0.0-0.5	Long	Frequent	---	None
Duric Xerarents, fill-----	C	January	2.9-6.7	2.0-6.7	0.0-0.5	Brief	Rare	---	None
		February	2.9-6.7	2.0-6.7	0.0-0.5	Brief	Rare	---	None
		March	3.2-6.7	2.0-6.7	0.0-0.5	Brief	Rare	---	None
		April	3.6-6.7	2.0-6.7	0.0-0.5	Brief	Rare	---	None
		December	2.9-6.7	2.0-6.7	0.0-0.5	Brief	Rare	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
136: Eastbiggs fine sandy loam, leveled-----	C	January	1.2-3.3	1.7-3.3	0.0-0.5	Brief	Frequent	---	None
		February	1.2-3.3	1.7-3.3	0.0-0.5	Brief	Frequent	---	None
		March	1.2-3.3	1.7-3.3	0.0-0.5	Brief	Frequent	---	None
		April	1.2-3.3	1.7-3.3	0.0-0.3	Very brief	Occasional	---	None
		December	1.2-3.3	1.7-3.3	0.0-0.5	Brief	Frequent	---	None
138su: Liveoak sandy clay loam-----	B	January	0.9-3.3	---	---	---	None	Very brief	Very rare
		February	0.9-5.0	---	---	---	None	Very brief	Very rare
		March	0.9-5.0	---	---	---	None	Very brief	Very rare
		April	3.3-5.4	---	---	---	None	Very brief	Very rare
		December	3.3-6.2	---	---	---	None	Very brief	Very rare
139su: Liveoak taxadjunct loam, frequently flooded-----	B	January	4.0-5.0	4.0-5.0	---	---	None	Long	Frequent
		February	4.0-5.0	4.0-5.0	---	---	None	Long	Frequent
		March	4.0-5.0	4.0-5.0	---	---	None	Long	Frequent
		April	4.0-5.0	4.0-5.0	---	---	None	Long	Frequent
		December	4.0-5.0	4.0-5.0	---	---	None	Long	Frequent
Galt taxadjunct clay loam, frequently flooded-----	C	January	1.2-2.9	1.7-4.0	---	---	None	Long	Frequent
		February	1.2-2.9	1.7-4.0	---	---	None	Long	Frequent
		March	1.2-2.9	1.7-4.0	---	---	None	Long	Frequent
		April	1.2-2.9	1.7-4.0	---	---	None	Long	Frequent
		December	1.0-2.0	1.7-2.9	---	---	None	Long	Frequent
143su: Marcum clay loam-----	C	Jan-Dec	---	---	---	---	None	---	None
Gridley clay loam-----	C	Jan-Dec	---	---	---	---	None	---	None
149yu: Flanly sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
150: Columbia stratified sand to fine sandy loam-----	D	January	1.7-6.0	---	---	---	None	Long	Frequent
		February	1.7-6.0	---	---	---	None	Long	Frequent
		March	1.7-6.0	---	---	---	None	Long	Frequent
		April	1.7-6.0	---	---	---	None	Brief	Occasional
		November	---	---	---	---	None	Very brief	Rare
		December	1.7-6.0	---	---	---	None	Long	Frequent
150su: Olashes sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
151yu: Flanly sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
152: Gianella fine sandy loam, frequently flooded-----	A	January	2.7-6.7	---	---	---	None	Brief	Frequent
		February	2.7-6.7	---	---	---	None	Brief	Frequent
		March	2.7-6.7	---	---	---	None	Brief	Frequent
		December	2.7-6.7	---	---	---	None	Brief	Frequent
153: Gianella sandy loam, frequently flooded--	A	January	2.7-6.7	---	---	---	None	Brief	Frequent
		February	2.7-6.7	---	---	---	None	Brief	Frequent
		March	2.7-6.7	---	---	---	None	Brief	Frequent
		December	2.7-6.7	---	---	---	None	Brief	Frequent
154: Gianella silt loam, frequently flooded---	A	January	2.7-6.7	---	---	---	None	Brief	Frequent
		February	2.7-6.7	---	---	---	None	Brief	Frequent
		March	2.7-6.7	---	---	---	None	Brief	Frequent
		December	2.7-6.7	---	---	---	None	Brief	Frequent

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
158: Gianella fine sandy loam, occasionally flooded-----	A	January	2.7-6.7	---	---	---	None	Brief	Occasional
		February	2.7-6.7	---	---	---	None	Brief	Occasional
		March	2.7-6.7	---	---	---	None	Brief	Occasional
		December	2.7-6.7	---	---	---	None	Brief	Occasional
160: Gianella loam, occasionally flooded-----	A	January	2.7-6.7	---	---	---	None	Brief	Occasional
		February	2.7-6.7	---	---	---	None	Brief	Occasional
		March	2.7-6.7	---	---	---	None	Brief	Occasional
		December	2.7-6.7	---	---	---	None	Brief	Occasional
161: Gianella fine sandy loam, rarely flooded	A	January	2.7-6.7	---	---	---	None	Brief	Rare
		February	2.7-6.7	---	---	---	None	Brief	Rare
		March	2.7-6.7	---	---	---	None	Brief	Rare
		December	2.7-6.7	---	---	---	None	Brief	Rare
162: Gianella loam, rarely flooded-----	A	January	2.7-6.7	---	---	---	None	Brief	Rare
		February	2.7-6.7	---	---	---	None	Brief	Rare
		March	2.7-6.7	---	---	---	None	Brief	Rare
		December	2.7-6.7	---	---	---	None	Brief	Rare
163yu: Holillipah loamy sand-----	A	January	---	---	---	---	None	Long	Frequent
		February	---	---	---	---	None	Long	Frequent
		March	---	---	---	---	None	Long	Frequent
		April	---	---	---	---	None	Long	Frequent
		December	---	---	---	---	None	Long	Frequent
165yu: Holland loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Hoda loam-----	C	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
165yu: Hotaw loam-----	C	Jan-Dec	---	---	---	---	None	---	None
173yu: Hotaw loam-----	C	Jan-Dec	---	---	---	---	None	---	None
Chawanakee gravelly sandy loam-----	C	Jan-Dec	---	---	---	---	None	---	None
Holland loam-----	B	Jan-Dec	---	---	---	---	None	---	None
175: Farwell clay loam, rarely flooded-----	B	January	---	---	---	---	None	Brief	Rare
		February	---	---	---	---	None	Brief	Rare
		March	---	---	---	---	None	Brief	Rare
		December	---	---	---	---	None	Brief	Rare
176: Farwell loam, occasionally flooded-----	B	January	---	---	---	---	None	Brief	Occasional
		February	---	---	---	---	None	Brief	Occasional
		March	---	---	---	---	None	Brief	Occasional
		December	---	---	---	---	None	Brief	Occasional
176yu: Jocal loam-----	B	Jan-Dec	---	---	---	---	None	---	None
177: Farwell silt loam, occasionally flooded--	B	January	---	---	---	---	None	Brief	Occasional
		February	---	---	---	---	None	Brief	Occasional
		March	---	---	---	---	None	Brief	Occasional
		December	---	---	---	---	None	Brief	Occasional

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
178: Arbuckle gravelly loam-----	B	January	---	---	---	---	None	Very brief	Rare
		February	---	---	---	---	None	Very brief	Rare
		March	---	---	---	---	None	Very brief	Rare
		December	---	---	---	---	None	Very brief	Rare
179: Moda taxadjunct loam-----	D	January	0.0-3.3	1.7-3.3	0.0-0.2	Long	Frequent	Brief	Rare
		February	0.0-3.3	1.7-3.3	0.0-0.2	Long	Frequent	Brief	Rare
		March	0.0-3.3	1.7-3.3	0.0-0.2	Long	Frequent	Brief	Rare
		April	0.0-3.3	1.7-3.3	0.0-0.1	Brief	Occasional	---	None
		November	---	---	0.0-0.1	Brief	Occasional	---	None
		December	0.0-3.3	1.7-3.3	0.0-0.2	Long	Frequent	Brief	Rare
Arbuckle gravelly loam-----	B	January	---	---	---	---	None	Very brief	Rare
		February	---	---	---	---	None	Very brief	Rare
		March	---	---	---	---	None	Very brief	Rare
		December	---	---	---	---	None	Very brief	Rare
180: Dodgeland silty clay loam, occasionally flooded-----	D	January	0.0-6.7	---	0.0-0.5	Long	Frequent	Brief	Occasional
		February	0.0-6.7	---	0.0-0.5	Long	Frequent	Brief	Occasional
		March	0.0-6.7	---	0.0-0.5	Long	Frequent	Brief	Occasional
		April	0.0-6.7	---	0.0-0.2	Brief	Occasional	Brief	Very rare
		May	0.0-6.7	---	---	---	None	---	None
		November	---	---	0.0-0.2	Brief	Occasional	Brief	Very rare
		December	0.0-6.7	---	0.0-0.5	Long	Frequent	Brief	Occasional
181: Dodgeland silty clay loam, frequently flooded-----	D	January	0.0-6.7	---	0.0-0.5	Long	Frequent	Brief	Frequent
		February	0.0-6.7	---	0.0-0.5	Long	Frequent	Brief	Frequent
		March	0.0-6.7	---	0.0-0.5	Long	Frequent	Brief	Frequent
		April	0.0-6.7	---	0.0-0.2	Brief	Occasional	Brief	Very rare
		May	0.0-6.7	---	---	---	None	---	None
		November	---	---	0.0-0.2	Brief	Occasional	Brief	Very rare
		December	0.0-6.7	---	0.0-0.5	Long	Frequent	Brief	Frequent

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
188yu: Mariposa taxadjunct gravelly loam-----	C	Jan-Dec	---	---	---	---	None	---	None
189: Esquon silt loam, overwash-----	D	January	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	Very brief	Rare
		February	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	Very brief	Rare
		March	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	Very brief	Rare
		April	0.0-5.0	3.3-5.0	0.0-0.1	Brief	Occasional	---	None
		May	0.0-5.0	3.3-5.0	---	---	None	---	None
		December	0.0-5.0	3.3-5.0	0.0-0.5	Very long	Frequent	Very brief	Rare
189yu: Mariposa taxadjunct gravelly loam-----	C	Jan-Dec	---	---	---	---	None	---	None
196yu: Mildred cobbly loam-----	D	Jan-Dec	---	---	---	---	None	---	None
200: Parrott silt loam, occasionally flooded--	B	January	5.0-7.4	---	0.0-0.0	Very brief	Occasional	Very brief	Occasional
		February	5.0-7.4	---	0.0-0.0	Very brief	Occasional	Very brief	Occasional
		March	5.0-7.4	---	0.0-0.0	Very brief	Occasional	Very brief	Occasional
		December	5.0-7.4	---	0.0-0.0	Very brief	Occasional	Very brief	Occasional
201: Parrott silt loam, frequently flooded---	B	January	5.0-7.4	---	0.0-0.0	Very brief	Occasional	Brief	Frequent
		February	5.0-7.4	---	0.0-0.0	Very brief	Occasional	Brief	Frequent
		March	5.0-7.4	---	0.0-0.0	Very brief	Occasional	Brief	Frequent
		December	5.0-7.4	---	0.0-0.0	Very brief	Occasional	Brief	Frequent
203: Kusalslough silty clay loam, occasionally flooded-----	C	January	1.2-6.0	---	0.0-0.3	Brief	Occasional	Brief	Occasional
		February	1.2-6.0	---	0.0-0.3	Brief	Occasional	Brief	Occasional
		March	1.2-6.0	---	0.0-0.3	Brief	Occasional	Brief	Occasional
		April	1.2-6.0	---	---	---	None	---	None
		May	1.2-6.0	---	---	---	None	---	None
		December	1.2-6.0	---	0.0-0.3	Brief	Occasional	Brief	Occasional

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
205: Parrott silt loam, frequently flooded----	B	January	5.0-7.4	---	0.0-0.0	Very brief	Occasional	Brief	Frequent
		February	5.0-7.4	---	0.0-0.0	Very brief	Occasional	Brief	Frequent
		March	5.0-7.4	---	0.0-0.0	Very brief	Occasional	Brief	Frequent
		December	5.0-7.4	---	0.0-0.0	Very brief	Occasional	Brief	Frequent
Vermet silt loam, frequently flooded-----	D	January	0.0-6.7	---	0.0-2.0	Very long	Frequent	Long	Frequent
		February	0.0-6.7	---	0.0-2.0	Very long	Frequent	Long	Frequent
		March	0.0-6.7	---	0.0-2.0	Very long	Frequent	Long	Frequent
		April	0.0-6.7	---	0.0-2.0	Long	Frequent	Brief	Occasional
		May	3.3-6.7	---	---	---	None	---	None
		June	3.3-6.7	---	---	---	None	---	None
		July	3.3-6.7	---	---	---	None	---	None
		August	3.3-6.7	---	---	---	None	---	None
		September	3.3-6.7	---	---	---	None	---	None
		October	3.3-6.7	---	---	---	None	---	None
		November	3.3-6.7	---	---	---	None	---	None
		December	0.0-6.7	---	0.0-2.0	Very long	Frequent	Long	Frequent
206: Islandbar sandy loam-----	A	Jan-Dec	---	---	---	---	None	---	None
Chawanakee gravelly sandy loam-----	C	Jan-Dec	---	---	---	---	None	---	None
207: Islandbar sandy loam-----	A	Jan-Dec	---	---	---	---	None	---	None
Chawanakee gravelly sandy loam-----	C	Jan-Dec	---	---	---	---	None	---	None
208: Islandbar sandy loam-----	A	Jan-Dec	---	---	---	---	None	---	None
Chawanakee gravelly sandy loam-----	C	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
209:									
Islandbar sandy loam-----	A	Jan-Dec	---	---	---	---	None	---	None
Chawanakee gravelly sandy loam-----	C	Jan-Dec	---	---	---	---	None	---	None
210:									
Featherfalls sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Islandbar sandy loam-----	A	Jan-Dec	---	---	---	---	None	---	None
211:									
Featherfalls sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Islandbar sandy loam-----	A	Jan-Dec	---	---	---	---	None	---	None
212:									
Featherfalls sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Islandbar sandy loam-----	A	Jan-Dec	---	---	---	---	None	---	None
213:									
Featherfalls sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Islandbar sandy loam-----	A	Jan-Dec	---	---	---	---	None	---	None
214:									
Crystalhill gravelly coarse sandy loam---	A	Jan-Dec	---	---	---	---	None	---	None
Oregongulch gravelly sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
214: Craigsaddle coarse sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop, trondhemite.									
215: Crystalhill gravelly coarse sandy loam---	A	Jan-Dec	---	---	---	---	None	---	None
Oregongulch gravelly sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Craigsaddle coarse sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop, trondhemite.									
216: Crystalhill gravelly coarse sandy loam---	A	Jan-Dec	---	---	---	---	None	---	None
Oregongulch gravelly sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Craigsaddle coarse sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop, trondhemite.									
217: Crystalhill gravelly coarse sandy loam---	A	Jan-Dec	---	---	---	---	None	---	None
Oregongulch gravelly sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Craigsaddle coarse sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop, trondhemite.									

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
218: Rock outcrop, quartz diorite.									
Lithic Xerorthents gravelly sandy loam---	D	Jan-Dec	---	---	---	---	None	---	None
Chawanakee gravelly sandy loam-----	C	Jan-Dec	---	---	---	---	None	---	None
219: Rock outcrop, quartz diorite.									
Lithic Xerorthents gravelly sandy loam---	D	Jan-Dec	---	---	---	---	None	---	None
Chawanakee gravelly sandy loam-----	C	Jan-Dec	---	---	---	---	None	---	None
220: Esquon clay, frequently flooded-----	D	January	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	Long	Frequent
		February	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	Long	Frequent
		March	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	Long	Frequent
		April	0.0-5.0	3.3-5.0	0.0-0.1	Brief	Occasional	Brief	Rare
		May	0.0-5.0	3.3-5.0	---	---	None	---	None
		December	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	Long	Frequent
Clear Lake silty clay loam, overwash-----	D	January	0.0-6.7	---	0.0-0.5	Very long	Frequent	Long	Frequent
		February	0.0-6.7	---	0.0-0.5	Very long	Frequent	Long	Frequent
		March	0.0-6.7	---	0.0-0.5	Very long	Frequent	Long	Frequent
		April	0.0-6.7	---	0.0-0.2	Long	Occasional	Long	Frequent
		May	0.0-6.7	---	---	---	None	---	None
		June	3.3-6.7	---	---	---	None	---	None
		July	3.3-6.7	---	---	---	None	---	None
		August	3.3-6.7	---	---	---	None	---	None
		September	3.3-6.7	---	---	---	None	---	None
		October	3.3-6.7	---	---	---	None	---	None
		November	3.3-6.7	---	0.0-0.2	Long	Occasional	---	None
		December	0.0-6.7	---	0.0-0.5	Very long	Frequent	Long	Frequent

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
221yu: Sites loam-----	C	Jan-Dec	---	---	---	---	None	---	None
222yu: Sites loam-----	C	Jan-Dec	---	---	---	---	None	---	None
225yu: Sites gravelly loam, bedrock substratum--	C	Jan-Dec	---	---	---	---	None	---	None
226yu: Sites gravelly loam, bedrock substratum--	C	Jan-Dec	---	---	---	---	None	---	None
227yu: Sites gravelly loam, bedrock substratum--	C	Jan-Dec	---	---	---	---	None	---	None
242yu: Surnuf loam-----	B	Jan-Dec	---	---	---	---	None	---	None
243yu: Surnuf loam-----	B	Jan-Dec	---	---	---	---	None	---	None
244yu: Surnuf loam-----	B	Jan-Dec	---	---	---	---	None	---	None
245: Surnuf loam-----	B	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
248yu: Trainer loam-----	B	January	3.0-5.0	---	---	---	None	Brief	Occasional
		February	3.0-5.0	---	---	---	None	Brief	Occasional
		March	3.0-5.0	---	---	---	None	Brief	Occasional
		April	3.0-5.0	---	---	---	None	Brief	Occasional
		May	3.0-5.0	---	---	---	None	---	None
		June	3.0-5.0	---	---	---	None	---	None
		July	3.0-5.0	---	---	---	None	---	None
		August	3.0-5.0	---	---	---	None	---	None
		September	3.0-5.0	---	---	---	None	---	None
		October	3.0-5.0	---	---	---	None	---	None
		November	3.0-5.0	---	---	---	None	---	None
		December	3.0-5.0	---	---	---	None	Brief	Occasional
250: Llanoseco, occasionally flooded-----	D	January	3.3-7.6	5.0-7.6	0.0-0.2	Brief	Rare	Brief	Occasional
		February	3.3-7.6	5.0-7.6	0.0-0.2	Brief	Rare	Brief	Occasional
		March	3.3-7.6	5.0-7.6	0.0-0.2	Brief	Rare	Brief	Occasional
		April	3.3-7.6	5.0-7.6	0.0-0.2	Brief	Rare	Very brief	Rare
		December	3.3-7.6	5.0-7.6	0.0-0.2	Brief	Rare	Brief	Occasional
252: Whitecabin silty clay, occasionally flooded-----	D	January	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	Brief	Occasional
		February	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	Brief	Occasional
		March	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	Brief	Occasional
		April	0.0-5.0	3.3-5.0	0.0-0.1	Brief	Occasional	Very brief	Rare
		May	0.0-5.0	3.3-5.0	---	---	None	---	None
		December	2.2-4.4	3.3-5.0	0.0-0.5	Long	Frequent	Brief	Occasional
Ordferry silty clay, occasionally flooded-----	D	January	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Brief	Occasional
		February	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Brief	Occasional
		March	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Brief	Occasional
		April	0.0-3.3	1.7-3.3	0.0-0.1	Brief	Occasional	Brief	Rare
		May	0.0-3.3	1.7-3.3	---	---	None	---	None
		December	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Brief	Occasional

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
252yu: Woodleaf gravelly loam-----	C	Jan-Dec	---	---	---	---	None	---	None
253yu: Woodleaf gravelly loam-----	C	Jan-Dec	---	---	---	---	None	---	None
255: Whitecabin silty clay loam, occasionally flooded-----	D	January	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	Brief	Occasional
		February	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	Brief	Occasional
		March	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	Brief	Occasional
		April	0.0-5.0	3.3-5.0	0.0-0.1	Brief	Occasional	Very brief	Rare
		May	0.0-5.0	3.3-5.0	---	---	None	---	None
		December	2.2-4.4	3.3-5.0	0.0-0.5	Long	Frequent	Brief	Occasional
Ordferry silty clay, occasionally flooded-----	D	January	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Brief	Occasional
		February	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Brief	Occasional
		March	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Brief	Occasional
		April	0.0-3.3	1.7-3.3	0.0-0.1	Brief	Occasional	Brief	Rare
		May	0.0-3.3	1.7-3.3	---	---	None	---	None
		December	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Brief	Occasional
256: Whitecabin silt loam, occasionally flooded-----	D	January	0.0-4.5	3.3-5.0	0.0-0.5	Long	Frequent	Brief	Occasional
		February	0.0-4.5	3.3-5.0	0.0-0.5	Long	Frequent	Brief	Occasional
		March	0.0-4.5	3.3-5.0	0.0-0.5	Long	Frequent	Brief	Occasional
		April	0.0-4.4	3.3-5.0	0.0-0.1	Brief	Occasional	Very brief	Rare
		May	0.0-4.4	3.3-5.0	---	---	None	---	None
		December	2.2-4.5	3.3-4.5	0.0-0.5	Long	Frequent	Brief	Occasional

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
257: Llanoseco, frequently flooded-----	D	January	3.3-7.6	5.0-7.6	0.0-0.2	Brief	Rare	Long	Frequent
		February	3.3-7.6	5.0-7.6	0.0-0.2	Brief	Rare	Long	Frequent
		March	3.3-7.6	5.0-7.6	0.0-0.2	Brief	Rare	Long	Frequent
		April	3.3-7.6	5.0-7.6	0.0-0.2	Brief	Rare	Brief	Occasional
		December	3.3-7.6	5.0-7.6	0.0-0.2	Brief	Rare	Long	Frequent
258: Codora, occasionally flooded-----	C	January	3.1-6.7	---	0.0-0.0	Brief	Occasional	Brief	Occasional
		February	3.1-6.7	---	0.0-0.0	Brief	Occasional	Brief	Occasional
		March	3.1-6.7	---	0.0-0.0	Brief	Occasional	Brief	Occasional
		April	3.1-6.7	---	---	---	None	---	None
		May	3.1-6.7	---	---	---	None	---	None
		December	3.1-6.7	---	0.0-0.0	Brief	Occasional	Brief	Occasional
260: Ordferry silty clay, occasionally flooded-----	D	January	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Brief	Occasional
		February	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Brief	Occasional
		March	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Brief	Occasional
		April	0.0-3.3	1.7-3.3	0.0-0.1	Brief	Occasional	Brief	Rare
		May	0.0-3.3	1.7-3.3	---	---	None	---	None
		December	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Brief	Occasional
280: Columbia taxadjunct stratified very fine sandy loam-----	D	January	0.0-2.0	---	---	---	None	Very long	Frequent
		February	0.0-2.0	---	---	---	None	Very long	Frequent
		March	0.0-2.0	---	---	---	None	Very long	Frequent
		April	0.0-2.0	---	---	---	None	Brief	Occasional
		May	3.3-6.7	---	---	---	None	---	None
		June	3.3-6.7	---	---	---	None	---	None
		July	3.3-6.7	---	---	---	None	---	None
		August	3.3-6.7	---	---	---	None	---	None
		September	3.3-6.7	---	---	---	None	---	None
		October	3.3-6.7	---	---	---	None	---	None
		November	3.3-6.7	---	---	---	None	Very brief	Rare
		December	0.0-2.0	---	---	---	None	Very long	Frequent

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
290: Perkins gravelly loam-----	B	January	5.0-6.7	---	---	---	None	---	None
		February	5.0-6.7	---	---	---	None	---	None
		March	5.0-6.7	---	---	---	None	---	None
		December	5.0-6.7	---	---	---	None	---	None
300: Redsluff gravelly loam-----	B	January	2.9-6.7	---	---	---	None	Very brief	Rare
		February	2.9-6.7	---	---	---	None	Very brief	Rare
		March	2.9-6.7	---	---	---	None	Very brief	Rare
		April	2.9-6.7	---	---	---	None	---	None
		December	2.9-6.7	---	---	---	None	Very brief	Rare
301: Wafap gravelly loam-----	C	January	1.1-5.0	3.3-5.0	---	---	None	Very brief	Rare
		February	1.1-5.0	3.3-5.0	---	---	None	Very brief	Rare
		March	1.1-5.0	3.3-5.0	---	---	None	Very brief	Rare
		April	1.1-5.0	3.3-5.0	---	---	None	---	None
		December	1.1-5.0	3.3-5.0	---	---	None	Very brief	Rare
Hamslough clay-----	D	January	0.0-6.7	---	0.0-0.3	Brief	Frequent	Brief	Occasional
		February	0.0-6.7	---	0.0-0.3	Brief	Frequent	Brief	Occasional
		March	0.0-6.7	---	0.0-0.3	Brief	Frequent	Brief	Occasional
		April	0.0-6.7	---	0.0-0.2	Brief	Rare	---	None
		November	---	---	0.0-0.2	Brief	Rare	---	None
		December	0.0-6.7	---	0.0-0.3	Brief	Frequent	Brief	Occasional
302: Redtough loam-----	D	January	0.2-1.7	0.8-1.7	---	---	None	---	None
		February	0.2-1.7	0.8-1.7	---	---	None	---	None
		March	0.2-1.7	0.8-1.7	---	---	None	---	None
		November	0.2-1.7	0.8-1.7	---	---	None	---	None
		December	0.2-1.7	0.8-1.7	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
302: Redswale cobbly loam-----	D	January	0.0-0.8	0.3-0.8	0.0-0.1	Brief	Frequent	---	None
		February	0.0-0.8	0.3-0.8	0.0-0.1	Brief	Frequent	---	None
		March	0.0-0.8	0.3-0.8	0.0-0.1	Brief	Frequent	---	None
		November	0.0-0.8	0.3-0.8	0.0-0.1	Very brief	Occasional	---	None
		December	0.0-0.8	0.3-0.8	0.0-0.1	Brief	Frequent	---	None
303: Munjar gravelly loam-----	C	January	1.0-3.3	1.7-3.3	---	---	None	---	None
		February	1.0-3.3	1.7-3.3	---	---	None	---	None
		March	1.0-3.3	1.7-3.3	---	---	None	---	None
		April	1.0-3.3	1.7-3.3	---	---	None	---	None
		December	1.0-3.3	1.7-3.3	---	---	None	---	None
Tuscan taxadjunct gravelly clay loam-----	C	January	0.2-3.3	1.7-3.3	---	---	None	---	None
		February	0.2-3.3	1.7-3.3	---	---	None	---	None
		March	0.2-3.3	1.7-3.3	---	---	None	---	None
		April	0.2-3.3	1.7-3.3	---	---	None	---	None
		December	0.2-3.3	1.7-3.3	---	---	None	---	None
Galt clay-----	D	January	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Brief	Rare
		February	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Brief	Rare
		March	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Brief	Rare
		April	0.0-3.3	1.7-3.3	0.0-0.2	Long	Occasional	Brief	Rare
		May	0.0-3.3	1.7-3.3	0.0-0.2	Very brief	Rare	---	None
		November	0.0-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	---	None
		December	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Brief	Rare
304: Redtough loam-----	D	Jan-Dec	---	---	---	---	None	---	None
305: Redtough gravelly loam-----	D	January	0.2-1.7	0.8-1.7	---	---	None	---	None
		February	0.2-1.7	0.8-1.7	---	---	None	---	None
		March	0.2-1.7	0.8-1.7	---	---	None	---	None
		November	0.2-1.7	0.8-1.7	---	---	None	---	None
		December	0.2-1.7	0.8-1.7	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
305: Redswale loam-----	D	January	0.0-0.8	0.3-0.8	0.0-0.1	Brief	Frequent	---	None
		February	0.0-0.8	0.3-0.8	0.0-0.1	Brief	Frequent	---	None
		March	0.0-0.8	0.3-0.8	0.0-0.1	Brief	Frequent	---	None
		November	0.0-0.8	0.3-0.8	0.0-0.1	Very brief	Occasional	---	None
		December	0.0-0.8	0.3-0.8	0.0-0.1	Brief	Frequent	---	None
Anita, gravelly duripan-----	D	January	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	---	None
		February	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	---	None
		March	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	---	None
		April	0.0-1.7	0.8-1.7	0.0-0.2	Brief	Occasional	---	None
		May	0.0-1.7	0.8-1.7	0.0-0.2	Very brief	Rare	---	None
		November	0.0-1.7	0.8-1.7	0.0-0.2	Brief	Occasional	---	None
		December	0.0-1.7	0.8-1.7	0.0-0.3	Long	Frequent	---	None
306: Duric Xerarents, fill-----	D	January	0.0-3.3	2.0-6.7	0.2-0.5	Very long	Frequent	---	None
		February	0.0-3.3	2.0-6.7	0.2-0.5	Very long	Frequent	---	None
		March	0.0-3.3	2.0-6.7	0.2-0.5	Very long	Frequent	---	None
		April	0.0-3.3	2.0-6.7	0.0-0.5	Long	Occasional	---	None
		December	0.0-3.3	2.0-6.7	0.2-0.5	Very long	Frequent	---	None
Duric Xerarents, cut-----	D	January	0.0-3.3	0.3-1.8	0.2-0.5	Very long	Frequent	---	None
		February	0.0-3.3	0.3-1.8	0.2-0.5	Very long	Frequent	---	None
		March	0.0-3.3	0.3-1.8	0.2-0.5	Very long	Frequent	---	None
		April	0.0-3.3	0.3-1.8	0.0-0.5	Long	Occasional	---	None
		December	0.0-3.3	0.3-1.8	0.2-0.5	Very long	Frequent	---	None
307: Duric Xerarents clay loam, leveled-----	D	January	0.0-3.3	0.0-3.3	0.2-0.5	Very long	Frequent	---	None
		February	0.0-3.3	0.0-3.3	0.2-0.5	Very long	Frequent	---	None
		March	0.0-3.3	0.0-3.3	0.2-0.5	Very long	Frequent	---	None
		April	0.0-3.3	0.0-3.3	0.0-0.5	Long	Occasional	---	None
		December	0.0-3.3	0.0-3.3	0.2-0.5	Very long	Frequent	---	None
310: Kimball loam-----	C	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
317: Thompsonflat loam-----	C	January	3.3-6.7	---	---	---	None	---	None
		February	3.3-6.7	---	---	---	None	---	None
		March	3.3-6.7	---	---	---	None	---	None
		April	3.3-6.7	---	---	---	None	---	None
		December	3.3-6.7	---	---	---	None	---	None
318: Thompsonflat fine sandy loam-----	C	January	3.3-6.7	---	---	---	None	---	None
		February	3.3-6.7	---	---	---	None	---	None
		March	3.3-6.7	---	---	---	None	---	None
		April	3.3-6.7	---	---	---	None	---	None
		December	3.3-6.7	---	---	---	None	---	None
Oroville gravelly fine sandy loam-----	C	January	0.0-3.3	1.7-3.3	0.0-0.3	Very long	Frequent	---	None
		February	0.0-3.3	1.7-3.3	0.0-0.3	Very long	Frequent	---	None
		March	0.0-3.3	1.7-3.3	0.0-0.3	Very long	Frequent	---	None
		April	0.0-3.3	1.7-3.3	0.0-0.1	Long	Occasional	---	None
		December	0.0-3.3	1.7-3.3	0.0-0.3	Very long	Frequent	---	None
320: Vistarobles sandy loam-----	D	January	0.0-1.7	0.8-1.7	0.0-0.3	Long	Frequent	---	None
		February	0.0-1.7	0.8-1.7	0.0-0.3	Long	Frequent	---	None
		March	0.0-1.7	0.8-1.7	0.0-0.3	Long	Frequent	---	None
		April	0.0-1.7	0.8-1.7	0.0-0.2	Brief	Occasional	---	None
		November	0.0-1.7	0.8-1.7	0.0-0.2	Brief	Occasional	---	None
		December	0.0-1.7	0.8-1.7	0.0-0.3	Long	Frequent	---	None
Redding loam-----	C	January	1.3-3.3	1.7-3.3	---	---	None	---	None
		February	1.3-3.3	1.7-3.3	---	---	None	---	None
		March	1.3-3.3	1.7-3.3	---	---	None	---	None
		April	1.3-3.3	1.7-3.3	---	---	None	---	None
		December	1.3-3.3	1.7-3.3	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
321: Durixeralfs, fine-loamy, gravelly fine sandy loam-----	C		Ft	Ft	Ft				
		January	1.7-3.3	1.7-3.3	---	---	None	---	None
		February	1.7-3.3	1.7-3.3	---	---	None	---	None
		March	1.7-3.3	1.7-3.3	---	---	None	---	None
		April	1.7-3.3	1.7-3.3	---	---	None	---	None
		December	1.7-3.3	1.7-3.3	---	---	None	---	None
Durixeralfs, loamy-skeletal, gravelly fine sandy loam-----	D								
		January	0.0-1.7	0.8-1.7	0.0-0.3	Very long	Frequent	---	None
		February	0.0-1.7	0.8-1.7	0.0-0.3	Very long	Frequent	---	None
		March	0.0-1.7	0.8-1.7	0.0-0.3	Very long	Frequent	---	None
		April	0.0-1.7	0.8-1.7	0.0-0.3	Brief	Occasional	---	None
		November	---	---	0.0-0.3	Long	Occasional	---	None
		December	0.0-1.7	0.8-1.7	0.0-0.3	Very long	Frequent	---	None
Typic Petraquepts silty clay-----	D								
		January	0.0-1.7	0.8-1.7	0.0-0.5	Very long	Frequent	---	None
		February	0.0-1.7	0.8-1.7	0.0-0.5	Very long	Frequent	---	None
		March	0.0-1.7	0.8-1.7	0.0-0.5	Very long	Frequent	---	None
		April	0.0-1.7	0.8-1.7	0.0-0.5	Brief	Occasional	---	None
		May	0.0-1.7	0.8-1.7	---	---	None	---	None
		October	---	---	0.0-0.5	Very brief	Rare	---	None
		November	0.0-1.7	0.8-1.7	0.0-0.5	Brief	Occasional	---	None
		December	0.0-1.7	0.8-1.7	0.0-0.5	Brief	Frequent	---	None
330: Wilsoncreek loam, occasionally flooded---	B								
		January	3.7-5.0	---	---	---	None	Brief	Occasional
		February	3.0-5.0	---	---	---	None	Brief	Occasional
		March	3.7-5.0	---	---	---	None	Brief	Occasional
		April	3.0-5.0	---	---	---	None	Brief	Occasional
		December	3.0-5.0	---	---	---	None	Brief	Occasional

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
330: Trainer loam, occasionally flooded-----	B	January	3.0-5.0	---	---	---	None	Brief	Occasional
		February	3.0-5.0	---	---	---	None	Brief	Occasional
		March	3.0-5.0	---	---	---	None	Very brief	Occasional
		April	3.0-5.0	---	---	---	None	Very brief	Occasional
		May	3.0-5.0	---	---	---	None	---	None
		June	3.0-5.0	---	---	---	None	---	None
		July	3.0-5.0	---	---	---	None	---	None
		August	3.0-5.0	---	---	---	None	---	None
		September	3.0-5.0	---	---	---	None	---	None
		October	3.0-5.0	---	---	---	None	---	None
		November	3.0-5.0	---	---	---	None	---	None
		December	3.0-5.0	---	---	---	None	Brief	Occasional
331: Thompsonflat loam-----	C	January	3.3-6.7	---	---	---	None	---	None
		February	3.3-6.7	---	---	---	None	---	None
		March	3.3-6.7	---	---	---	None	---	None
		April	3.3-6.7	---	---	---	None	---	None
		December	3.3-6.7	---	---	---	None	---	None
335: Galt clay loam-----	D	January	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	---	None
		February	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	---	None
		March	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	---	None
		April	0.0-3.3	1.7-3.3	0.0-0.2	Long	Occasional	---	None
		May	0.0-3.3	1.7-3.3	0.0-0.2	Very brief	Rare	---	None
		November	0.0-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	---	None
		December	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	---	None
336: Galt clay-----	D	January	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Brief	Rare
		February	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Brief	Rare
		March	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Brief	Rare
		April	0.0-3.3	1.7-3.3	0.0-0.2	Long	Occasional	Brief	Rare
		May	0.0-3.3	1.7-3.3	0.0-0.2	Very brief	Rare	---	None
		November	0.0-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	---	None
		December	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Brief	Rare

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
337: Galt clay loam-----	D	January	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	---	None
		February	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	---	None
		March	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	---	None
		April	0.0-3.3	1.7-3.3	0.0-0.2	Long	Occasional	---	None
		May	0.0-3.3	1.7-3.3	0.0-0.2	Very brief	Rare	---	None
		November	0.0-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	---	None
		December	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	---	None
338: Oxyaquic Xerofluvents silt loam-----	B	January	3.0-6.7	---	0.0-0.2	Brief	Rare	Brief	Rare
		February	3.0-6.7	---	0.0-0.2	Brief	Rare	Brief	Rare
		March	3.0-6.7	---	0.0-0.2	Brief	Rare	Brief	Rare
		April	3.0-6.7	---	0.0-0.2	Brief	Rare	Brief	Rare
		December	3.0-6.7	---	0.0-0.2	Brief	Rare	Brief	Rare
339: Oxyaquic Xerofluvents sandy loam, frequently flooded-----	B	January	3.0-6.7	---	0.0-0.5	Brief	Rare	Long	Frequent
		February	3.0-6.7	---	0.0-0.5	Brief	Rare	Long	Frequent
		March	3.0-6.7	---	0.0-0.5	Brief	Rare	Long	Frequent
		April	3.0-6.7	---	---	---	None	Long	Frequent
		December	3.0-6.7	---	0.0-0.5	Brief	Rare	Long	Frequent
340: Rock outcrop, Lovejoy basalt. Thermalrocks very gravelly loam-----	D	Jan-Dec	---	---	---	---	None	---	None
Campbellhills gravelly loam-----	C	January	0.3-5.0	3.3-5.0	---	---	None	---	None
		February	0.3-5.0	3.3-5.0	---	---	None	---	None
		March	0.3-5.0	3.3-5.0	---	---	None	---	None
		April	0.3-5.0	3.3-5.0	---	---	None	---	None
		December	0.3-5.0	3.3-5.0	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
341: Elsey loam-----	C	January	1.2-3.3	1.7-3.3	---	---	None	---	None
		February	1.2-3.3	1.7-3.3	---	---	None	---	None
		March	1.2-3.3	1.7-3.3	---	---	None	---	None
		April	1.2-3.3	1.7-3.3	---	---	None	---	None
		December	1.2-3.3	1.7-3.3	---	---	None	---	None
Beatsonhollow gravelly loam-----	D	January	0.0-1.7	0.7-1.7	0.0-0.4	Brief	Frequent	---	None
		February	0.0-1.7	0.7-1.7	0.0-0.4	Brief	Frequent	---	None
		March	0.0-1.7	0.7-1.7	0.0-0.4	Very brief	Frequent	---	None
		April	0.0-1.7	0.7-1.7	0.0-0.4	Very brief	Occasional	---	None
		November	0.0-1.7	0.7-1.7	0.0-0.4	Very brief	Occasional	---	None
		December	0.0-1.7	0.7-1.7	0.0-0.4	Brief	Frequent	---	None
Campbellhills gravelly loam-----	C	January	0.3-5.0	3.3-5.0	---	---	None	---	None
		February	0.3-5.0	3.3-5.0	---	---	None	---	None
		March	0.3-5.0	3.3-5.0	---	---	None	---	None
		April	0.3-5.0	3.3-5.0	---	---	None	---	None
		December	0.3-5.0	3.3-5.0	---	---	None	---	None
Rock outcrop, Lovejoy basalt.									
342: Thermalrocks very gravelly loam-----	D	Jan-Dec	---	---	---	---	None	---	None
Beatsonhollow taxadjunct fine sandy loam	D	January	0.4-1.7	0.8-1.7	---	---	None	---	None
		February	0.4-1.7	0.8-1.7	---	---	None	---	None
		March	0.4-1.7	0.8-1.7	---	---	None	---	None
		April	0.4-1.7	0.8-1.7	---	---	None	---	None
		November	0.4-1.7	0.8-1.7	---	---	None	---	None
		December	0.4-1.7	0.8-1.7	---	---	None	---	None
Rock outcrop, Lovejoy basalt.									
343: Coalcanyon very cobbly loam-----	B	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit Ft	Lower limit Ft	Surface water depth Ft	Duration	Frequency	Duration	Frequency
343: Coonhollow gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
344: Coalcanyon very cobbly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Coonhollow gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop, Lovejoy basalt.									
346: Cherotable loam-----	C	January	1.7-5.0	3.3-5.0	---	---	None	---	None
		February	1.7-5.0	3.3-5.0	---	---	None	---	None
		March	1.7-5.0	3.3-5.0	---	---	None	---	None
		April	1.7-5.0	3.3-5.0	---	---	None	---	None
		December	1.7-5.0	3.3-5.0	---	---	None	---	None
Elsey loam-----	C	January	1.2-3.3	1.7-3.3	---	---	None	---	None
		February	1.2-3.3	1.7-3.3	---	---	None	---	None
		March	1.2-3.3	1.7-3.3	---	---	None	---	None
		April	1.2-3.3	1.7-3.3	---	---	None	---	None
		December	1.2-3.3	1.7-3.3	---	---	None	---	None
347: Haplic Palexeralfs loam-----	B	January	5.0-6.7	5.0-6.7	---	---	None	Brief	Occasional
		February	5.0-6.7	5.0-6.7	---	---	None	Brief	Occasional
		March	5.0-6.7	5.0-6.7	---	---	None	Brief	Occasional
		April	5.0-6.7	5.0-6.7	---	---	None	Brief	Occasional
		December	5.0-6.7	5.0-6.7	---	---	None	Brief	Occasional
353: Cherokeespring gravelly silt loam-----	B	Jan-Dec	---	---	---	---	None	---	None
355: Coalcanyon very cobbly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Talus.									

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
356: Coalcanyon very cobbly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop, basalt cliffs.									
Talus.									
Coonhollow gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
360: Typic Xerofluvents, coarse-loamy-----	A	January	1.7-7.9	---	---	---	None	Brief	Rare
		February	1.7-7.9	---	---	---	None	Brief	Rare
		March	2.5-7.9	---	---	---	None	Brief	Rare
		April	3.3-7.9	---	---	---	None	---	None
		December	3.3-7.9	---	---	---	None	Brief	Rare
Typic Xerofluvents, sandy-skeletal-----	A	January	1.7-8.2	---	---	---	None	Brief	Rare
		February	1.7-8.2	---	---	---	None	Brief	Rare
		March	2.5-8.2	---	---	---	None	Brief	Rare
		April	3.3-8.2	---	---	---	None	---	None
		December	3.3-8.2	---	---	---	None	Brief	Rare
361: Typic Xerofluvents, sandy-skeletal-----	A	January	1.7-8.2	---	---	---	None	Brief	Rare
		February	1.7-8.2	---	---	---	None	Brief	Rare
		March	2.5-8.2	---	---	---	None	Brief	Rare
		April	3.3-8.2	---	---	---	None	---	None
		December	3.3-8.2	---	---	---	None	Brief	Rare
362: Ultic Haploxeralfs, sandstone, low elevation, very deep-----	B	Jan-Dec	---	---	---	---	None	---	None
Ultic Haploxeralfs, sandstone, low elevation, deep-----	B	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
363: Ultic Haploxeralfs, sandstone, low elevation, very deep-----	B	Jan-Dec	---	---	---	---	None	---	None
Ultic Haploxeralfs, sandstone, low elevation, deep-----	B	Jan-Dec	---	---	---	---	None	---	None
364: Ultic Haploxeralfs, sandstone, low elevation, deep-----	B	Jan-Dec	---	---	---	---	None	---	None
Ultic Haploxeralfs, sandstone, low elevation, very deep-----	B	Jan-Dec	---	---	---	---	None	---	None
365: Palexerults gravelly loam-----	C	Jan-Dec	---	---	---	---	None	---	None
366: Palexerults gravelly loam-----	C	Jan-Dec	---	---	---	---	None	---	None
370: Palexerults gravelly loam-----	C	Jan-Dec	---	---	---	---	None	---	None
375: Wicksorner loam-----	B	January	4.2-7.0	5.0-7.0	---	---	None	---	None
		February	4.2-7.0	5.0-7.0	---	---	None	---	None
		March	4.2-7.0	5.0-7.0	---	---	None	---	None
		December	4.2-7.0	5.0-7.0	---	---	None	---	None
376: Flagcanyon gravelly loam-----	C	January	1.3-3.3	1.7-3.3	---	---	None	---	None
		February	1.3-3.3	1.7-3.3	---	---	None	---	None
		March	1.3-3.3	1.7-3.3	---	---	None	---	None
		December	1.3-3.3	1.7-3.3	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
376: Wicks corner loam-----	B	January	4.2-7.0	5.0-7.0	---	---	None	---	None
		February	4.2-7.0	5.0-7.0	---	---	None	---	None
		March	4.2-7.0	5.0-7.0	---	---	None	---	None
		December	4.2-7.0	5.0-7.0	---	---	None	---	None
377: Flagcanyon taxadjunct fine sandy loam----	C	January	1.3-3.3	1.7-3.3	0.0-0.3	Very long	None	---	None
		February	1.3-3.3	1.7-3.3	0.0-0.3	Very long	None	---	None
		March	1.3-3.3	1.7-3.3	0.0-0.3	Very long	None	---	None
		April	1.3-3.3	1.7-3.3	0.0-0.3	Very long	None	---	None
		November	---	---	0.0-0.3	Long	None	---	None
		December	1.3-3.3	1.7-3.3	0.0-0.3	Very long	None	---	None
Durixeralfs, clayey-skeletal, loam-----	D	January	0.0-1.7	0.8-1.7	0.0-0.3	Very long	Frequent	---	None
		February	0.0-1.7	0.8-1.7	0.0-0.3	Very long	Frequent	---	None
		March	0.0-1.7	0.8-1.7	0.0-0.3	Very long	Frequent	---	None
		April	0.0-1.7	0.8-1.7	0.0-0.3	Brief	Occasional	---	None
		November	---	---	0.0-0.3	Long	Occasional	---	None
		December	0.0-1.7	0.8-1.7	0.0-0.3	Very long	Frequent	---	None
Duraquerts gravelly clay-----	D	January	0.0-3.3	1.7-3.3	0.0-0.5	Very long	Frequent	---	None
		February	0.0-3.3	1.7-3.3	0.0-0.5	Very long	Frequent	---	None
		March	0.0-3.3	1.7-3.3	0.0-0.5	Very long	Frequent	---	None
		April	0.0-3.3	1.7-3.3	0.0-0.5	Very long	Frequent	---	None
		May	0.0-3.3	1.7-3.3	0.0-0.3	Brief	Occasional	---	None
		October	---	---	0.0-0.2	Brief	Rare	---	None
		November	---	---	0.0-0.3	Long	Occasional	---	None
		December	0.0-3.3	1.7-3.3	0.0-0.5	Very long	Frequent	---	None
400: Subaco taxadjunct clay-----	D	January	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Very brief	Rare
		February	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Very brief	Rare
		March	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Very brief	Rare
		April	0.0-3.3	1.7-3.3	0.0-0.5	Brief	Occasional	Very brief	Rare
		May	0.0-3.3	1.7-3.3	---	---	None	---	None
		December	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Very brief	Rare

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
415: Ignord fine sandy loam-----	B		Ft	Ft	Ft				
		January	---	---	---	---	None	Brief	Rare
		February	---	---	---	---	None	Brief	Rare
		March	---	---	---	---	None	Brief	Rare
416: Calcic Haploxerolls sandy loam-----	B								
		January	0.9-5.0	1.7-5.0	---	---	None	Very brief	Rare
		February	0.9-5.0	1.7-5.0	---	---	None	Very brief	Rare
		March	0.9-5.0	1.7-5.0	---	---	None	Very brief	Rare
		April	0.9-5.0	1.7-5.0	---	---	None	---	None
		December	0.9-5.0	1.7-5.0	---	---	None	Very brief	Rare
418: Almendra loam-----	B								
		Jan-Dec	---	---	---	---	None	---	None
419: Conejo fine sandy loam, overwash-----	B								
		Jan-Dec	---	---	---	---	None	---	None
420: Conejo clay loam-----	B								
		Jan-Dec	---	---	---	---	None	---	None
425: Vina fine sandy loam-----	B								
		January	---	---	---	---	None	Brief	Rare
		February	---	---	---	---	None	Brief	Rare
		March	---	---	---	---	None	Brief	Rare
426: Vina loam-----	B								
		Jan-Dec	---	---	---	---	None	---	None
439: Oxyaquic Xerofluvents clay-----	D								
		January	1.5-6.7	---	0.0-0.6	Long	Frequent	Long	Frequent
		February	1.5-6.7	---	0.0-0.6	Long	Frequent	Long	Frequent
		March	1.5-6.7	---	0.0-0.6	Long	Frequent	Long	Frequent
		April	1.5-6.7	---	0.0-0.6	Long	Frequent	Long	Frequent
		December	1.5-6.7	---	0.0-0.6	Long	Frequent	Long	Frequent

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
440: Oxyaquic Xerofluvents silt loam, frequently flooded-----	C	January	2.0-6.7	---	0.0-0.6	Brief	Rare	Long	Frequent
		February	2.0-6.7	---	0.0-0.6	Brief	Rare	Long	Frequent
		March	2.0-6.7	---	0.0-0.6	Brief	Rare	Long	Frequent
		April	2.0-6.7	---	0.0-0.6	Brief	Rare	Long	Frequent
		December	2.0-6.7	---	0.0-0.6	Brief	Rare	Long	Frequent
441: Oxyaquic Xerofluvents very fine sandy loam-----	C	January	2.0-6.7	---	0.0-0.6	Brief	Rare	Brief	Rare
		February	2.0-6.7	---	0.0-0.6	Brief	Rare	Brief	Rare
		March	2.0-6.7	---	0.0-0.6	Brief	Rare	Brief	Rare
		April	2.0-6.7	---	0.0-0.6	Brief	Rare	---	None
		December	2.0-6.7	---	0.0-0.6	Brief	Rare	Brief	Rare
442: Durixerolls clay loam-----	C	January	1.0-3.3	1.7-3.3	0.0-0.1	Very brief	Occasional	Brief	Rare
		February	1.0-3.3	1.7-3.3	0.0-0.1	Very brief	Occasional	Brief	Rare
		March	1.0-3.3	1.7-3.3	0.0-0.1	Very brief	Occasional	Brief	Rare
		April	1.0-3.3	1.7-3.3	---	---	None	---	None
		December	1.0-3.3	1.7-3.3	0.0-0.1	Very brief	Occasional	Brief	Rare
Haploxerolls clay loam-----	C	January	1.7-5.0	3.3-5.0	---	---	None	Brief	Rare
		February	1.7-5.0	3.3-5.0	---	---	None	Brief	Rare
		March	1.7-5.0	3.3-5.0	---	---	None	Brief	Rare
		April	1.7-5.0	3.3-5.0	---	---	None	---	None
		December	1.7-5.0	3.3-5.0	---	---	None	Brief	Rare
443: Durixerolls loam-----	C	January	1.0-3.3	1.7-3.3	---	---	None	Brief	Rare
		February	1.0-3.3	1.7-3.3	---	---	None	Brief	Rare
		March	1.0-3.3	1.7-3.3	---	---	None	Brief	Rare
		April	1.0-3.3	1.7-3.3	---	---	None	---	None
		December	1.0-3.3	1.7-3.3	---	---	None	Brief	Rare

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
443: Haploxerolls loam-----	C	January	1.7-5.0	3.3-5.0	---	---	None	Brief	Rare
February		1.7-5.0	3.3-5.0	---	---	None	Brief	Rare	
March		1.7-5.0	3.3-5.0	---	---	None	Brief	Rare	
April		1.7-5.0	3.3-5.0	---	---	None	---	None	
December		1.7-5.0	3.3-5.0	---	---	None	Brief	Rare	
445: Chico loam-----	B	January	6.0-6.7	---	---	---	None	---	None
February		6.0-6.7	---	---	---	None	---	None	
March		6.0-6.7	---	---	---	None	---	None	
December		6.0-6.7	---	---	---	None	---	None	
447: Charger fine sandy loam-----	B	January	3.3-6.7	---	---	---	None	Brief	Rare
February		3.3-6.7	---	---	---	None	Brief	Rare	
March		3.3-6.7	---	---	---	None	Brief	Rare	
April		3.3-6.7	---	---	---	None	---	None	
December		3.3-6.7	---	---	---	None	Brief	Rare	
448: Haploxerolls clay loam-----	C	January	3.3-6.7	5.0-6.7	---	---	None	Brief	Rare
February		3.3-6.7	5.0-6.7	---	---	None	Brief	Rare	
March		3.3-6.7	5.0-6.7	---	---	None	Brief	Rare	
April		3.3-6.7	5.0-6.7	---	---	None	---	None	
December		3.3-6.7	5.0-6.7	---	---	None	Brief	Rare	
449: Haploxerolls loam-----	C	January	3.3-6.7	5.0-6.7	---	---	None	Brief	Rare
February		3.3-6.7	5.0-6.7	---	---	None	Brief	Rare	
March		3.3-6.7	5.0-6.7	---	---	None	Brief	Rare	
April		3.3-6.7	5.0-6.7	---	---	None	---	None	
December		3.3-6.7	5.0-6.7	---	---	None	Brief	Rare	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
500: Lofgren clay-----	D	January	0.0-5.0	3.3-5.0	0.0-0.5	Very long	Frequent	Very brief	Rare
		February	0.0-5.0	3.3-5.0	0.0-0.5	Very long	Frequent	Very brief	Rare
		March	0.0-5.0	3.3-5.0	0.0-0.5	Very long	Frequent	Very brief	Rare
		April	0.0-5.0	3.3-5.0	0.0-0.1	Brief	Occasional	---	None
		May	0.0-5.0	3.3-5.0	---	---	None	---	None
		December	0.0-5.0	3.3-5.0	0.0-0.5	Very long	Frequent	Very brief	Rare
Blavo clay-----	D	January	0.0-3.3	1.7-3.3	0.0-0.5	Very long	Frequent	Very brief	Rare
		February	0.0-3.3	1.7-3.3	0.0-0.5	Very long	Frequent	Very brief	Rare
		March	0.0-3.3	1.7-3.3	0.0-0.5	Very long	Frequent	Very brief	Rare
		April	0.0-3.3	1.7-3.3	0.0-0.1	Brief	Occasional	---	None
		May	0.0-3.3	1.7-3.3	---	---	None	---	None
		December	1.0-3.0	1.7-3.3	0.0-0.5	Very long	Frequent	Very brief	Rare
501: Lofgren clay, occasionally flooded-----	D	January	0.0-5.0	3.3-5.0	0.0-0.5	Very long	Frequent	Brief	Occasional
		February	0.0-5.0	3.3-5.0	0.0-0.5	Very long	Frequent	Brief	Occasional
		March	0.0-5.0	3.3-5.0	0.0-0.5	Very long	Frequent	Brief	Occasional
		April	0.0-5.0	3.3-5.0	0.0-0.1	Brief	Occasional	---	None
		May	0.0-5.0	3.3-5.0	---	---	None	---	None
		December	0.0-5.0	3.3-5.0	0.0-0.5	Very long	Frequent	Brief	Occasional
Blavo clay, occasionally flooded-----	D	January	0.0-3.3	1.7-3.3	0.0-0.5	Very long	Frequent	Long	Occasional
		February	0.0-3.3	1.7-3.3	0.0-0.5	Very long	Frequent	Long	Occasional
		March	0.0-3.3	1.7-3.3	0.0-0.5	Very long	Frequent	Long	Occasional
		April	0.0-3.3	1.7-3.3	0.0-0.1	Brief	Occasional	---	None
		May	0.0-3.3	1.7-3.3	---	---	None	---	None
		December	0.0-3.3	1.7-3.3	0.0-0.5	Very long	Frequent	Long	Occasional
502: Blavo silt loam, overwash, occasionally flooded-----	D	January	0.0-3.3	1.7-3.3	0.0-0.5	Very long	Frequent	Brief	Occasional
		February	0.0-3.3	1.7-3.3	0.0-0.5	Very long	Frequent	Brief	Occasional
		March	0.0-3.3	1.7-3.3	0.0-0.5	Very long	Frequent	Brief	Occasional
		April	0.0-3.3	1.7-3.3	0.0-0.1	Brief	Occasional	---	None
		May	0.0-3.3	1.7-3.3	---	---	None	---	None
		December	1.0-3.0	1.7-3.3	0.0-0.5	Very long	Frequent	Brief	Occasional

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
519: Edjobe silty clay-----	D	January	0.8-6.7	5.0-6.7	0.0-0.5	Long	Frequent	---	None
		February	0.8-6.7	5.0-6.7	0.0-0.5	Long	Frequent	---	None
		March	0.8-6.7	5.0-6.7	0.0-0.5	Long	Frequent	---	None
		April	0.8-6.7	5.0-6.7	---	---	None	---	None
		May	0.8-6.7	5.0-6.7	---	---	None	---	None
		December	0.8-6.7	5.0-6.7	0.0-0.5	Long	Frequent	---	None
520: Esquon clay-----	D	January	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	Very brief	Rare
		February	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	Very brief	Rare
		March	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	Very brief	Rare
		April	0.0-5.0	3.3-5.0	0.0-0.1	Brief	Occasional	Very brief	None
		May	0.0-5.0	3.3-5.0	---	---	None	---	None
		December	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	Very brief	Rare
Neerdobe clay-----	D	January	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Very brief	Rare
		February	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Very brief	Rare
		March	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Very brief	Rare
		April	0.0-3.3	1.7-3.3	0.0-0.1	Brief	Occasional	---	None
		May	0.0-3.3	1.7-3.3	---	---	None	---	None
		December	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Very brief	Rare
521: Neerdobe silt loam, overwash-----	D	January	0.0-5.0	1.7-5.0	0.0-0.5	Long	Frequent	Very brief	Rare
		February	0.0-5.0	1.7-5.0	0.0-0.5	Long	Frequent	Very brief	Rare
		March	0.0-5.0	1.7-5.0	0.0-0.5	Long	Frequent	Very brief	Rare
		April	0.0-5.0	1.7-5.0	0.0-0.1	Brief	Occasional	---	None
		May	0.0-5.0	1.7-5.0	---	---	None	---	None
		December	0.0-5.0	1.7-5.0	0.0-0.5	Long	Frequent	Very brief	Rare

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
522: Clear Lake silty clay loam, overwash-----	D	January	0.0-6.7	---	0.0-0.5	Very long	Frequent	Long	Frequent
		February	0.0-6.7	---	0.0-0.5	Very long	Frequent	Long	Frequent
		March	0.0-6.7	---	0.0-0.5	Very long	Frequent	Long	Frequent
		April	0.0-6.7	---	0.0-0.2	Long	Occasional	Long	Frequent
		May	0.0-6.7	---	---	---	None	---	None
		June	3.3-6.7	---	---	---	None	---	None
		July	3.3-6.7	---	---	---	None	---	None
		August	3.3-6.7	---	---	---	None	---	None
		September	3.3-6.7	---	---	---	None	---	None
		October	3.3-6.7	---	---	---	None	---	None
		November	3.3-6.7	---	0.0-0.2	Long	Occasional	---	None
		December	0.0-6.7	---	0.0-0.5	Very long	Frequent	Long	Frequent
523: Esquon silty clay loam, overwash-----	D	January	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	Long	Frequent
		February	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	Long	Frequent
		March	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	Long	Frequent
		April	0.0-5.0	3.3-5.0	0.0-0.1	Brief	Occasional	Brief	Rare
		May	0.0-5.0	3.3-5.0	---	---	None	---	None
		June	0.0-5.0	3.3-5.0	---	---	None	---	None
		July	3.0-5.0	3.3-5.0	---	---	None	---	None
		August	3.0-5.0	3.3-5.0	---	---	None	---	None
		September	3.0-5.0	3.3-5.0	---	---	None	---	None
		October	3.0-5.0	3.3-5.0	---	---	None	---	None
		November	0.0-5.0	3.3-5.0	---	---	None	---	None
		December	0.0-5.0	3.3-5.0	0.0-0.5	Very long	Frequent	Long	Frequent
525: Govstanford loam-----	C	January	1.7-6.0	---	---	---	None	---	None
		February	1.7-6.0	---	---	---	None	---	None
		March	1.7-6.0	---	---	---	None	---	None
		April	1.7-6.0	---	---	---	None	---	None
		December	1.7-6.0	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
526: Govstanford loam, occasionally flooded---	C	January	1.7-6.0	---	---	---	None	Brief	Occasional
		February	1.7-6.0	---	---	---	None	Brief	Occasional
		March	1.7-6.0	---	---	---	None	Brief	Occasional
		April	1.7-6.0	---	---	---	None	---	None
		December	1.7-6.0	---	---	---	None	Brief	Occasional
528: Neerdobe clay loam-----		D	January	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Very brief
	February		0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Very brief	Rare
	March		0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Very brief	Rare
	April		0.0-3.3	1.7-3.3	0.0-0.1	Brief	Occasional	---	None
	May		0.0-3.3	1.7-3.3	---	---	None	---	None
	November		---	---	---	---	None	Very brief	Rare
	December		0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Very brief	Rare
550: Dunstone loam, dry-----	D		Jan-Dec	---	---	---	---	None	---
Loafercreek silt loam, dry-----		B	Jan-Dec	---	---	---	---	None	---
551: Dunstone loam, dry-----	D		Jan-Dec	---	---	---	---	None	---
Lomarica loam-----		C	Jan-Dec	---	---	---	---	None	---
Argonaut taxadjunct loam-----	C		Jan-Dec	---	---	---	---	None	---
552: Dunstone gravelly loam-----		D	Jan-Dec	---	---	---	---	None	---
Loafercreek gravelly loam-----	B		Jan-Dec	---	---	---	---	None	---

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
553: Dunstone gravelly loam-----	D	Jan-Dec	---	---	---	---	None	---	None
Loafercreek gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
554: Dunstone gravelly loam-----	D	Jan-Dec	---	---	---	---	None	---	None
Loafercreek gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
555: Dunstone gravelly loam-----	D	Jan-Dec	---	---	---	---	None	---	None
Loafercreek gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
556: Mounthope loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Hartsmill gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
557: Mounthope loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Hartsmill gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
558: Hartsmill gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Mounthope loam-----	B	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
559: Hartsmill gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Mounthope loam-----	B	Jan-Dec	---	---	---	---	None	---	None
560: Hartsmill gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Mounthope loam-----	B	Jan-Dec	---	---	---	---	None	---	None
561: Bigridge loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Minniecreek loam-----	B	Jan-Dec	---	---	---	---	None	---	None
562: Bigridge loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Minniecreek loam-----	B	Jan-Dec	---	---	---	---	None	---	None
563: Bigridge loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Minniecreek loam-----	B	Jan-Dec	---	---	---	---	None	---	None
564: Bigridge loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Minniecreek loam-----	B	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
565: Dunstone loam, dry-----	D	Jan-Dec	---	---	---	---	None	---	None
Argonaut taxadjunct loam-----	C	Jan-Dec	---	---	---	---	None	---	None
Sunnyslope loam-----	D	Jan-Dec	---	---	---	---	None	---	None
566: Dunstone loam, dry-----	D	Jan-Dec	---	---	---	---	None	---	None
Loafercreek silt loam, dry-----	B	Jan-Dec	---	---	---	---	None	---	None
Katskillhill loam-----	B	Jan-Dec	---	---	---	---	None	---	None
567: Dunstone loam, dry-----	D	Jan-Dec	---	---	---	---	None	---	None
Loafercreek silt loam, dry-----	B	Jan-Dec	---	---	---	---	None	---	None
Argonaut taxadjunct loam-----	C	Jan-Dec	---	---	---	---	None	---	None
577: Parkshill coarse sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Flanly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Hurleton gravelly sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
578: Flanly loam-----	B	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
578: Swedesflat cobbly fine sandy loam-----	D	Jan-Dec	---	---	---	---	None	---	None
580: Surnuf taxadjunct loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Griffgulch very gravelly silt loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop, metavolcanic.									
581: Surnuf taxadjunct loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Griffgulch very gravelly silt loam-----	B	Jan-Dec	---	---	---	---	None	---	None
582: Surnuf taxadjunct loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Griffgulch very gravelly silt loam-----	B	Jan-Dec	---	---	---	---	None	---	None
583: Surnuf taxadjunct loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Griffgulch very gravelly silt loam-----	B	Jan-Dec	---	---	---	---	None	---	None
584: Flanly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Swedesflat cobbly fine sandy loam-----	D	Jan-Dec	---	---	---	---	None	---	None
Rackerby very gravelly sandy loam-----	D	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
585: Flanly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Sommeyflat loam-----	B	Jan-Dec	---	---	---	---	None	---	None
586: Sommeyflat loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Mounthope loam-----	B	Jan-Dec	---	---	---	---	None	---	None
587: Sommeyflat loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Mounthope loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Hurleton gravelly sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
588: Ultic Haploxeralfs, thermic, high terrace	C	January	0.8-5.0	1.7-5.0	---	---	None	---	None
		February	0.8-5.0	1.7-5.0	---	---	None	---	None
		March	0.8-5.0	1.7-5.0	---	---	None	---	None
		December	0.8-5.0	1.7-5.0	---	---	None	---	None
589: Ultic Haploxeralfs, thermic, high terrace	C	January	0.8-5.0	1.7-5.0	---	---	None	---	None
		February	0.8-5.0	1.7-5.0	---	---	None	---	None
		March	0.8-5.0	1.7-5.0	---	---	None	---	None
		December	0.8-5.0	1.7-5.0	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
590: Vistarobles sandy loam-----	D	January	0.0-1.7	0.8-1.7	0.0-0.3	Long	Frequent	---	None
		February	0.0-1.7	0.8-1.7	0.0-0.3	Long	Frequent	---	None
		March	0.0-1.7	0.8-1.7	0.0-0.3	Long	Frequent	---	None
		April	0.0-1.7	0.8-1.7	0.0-0.2	Brief	Occasional	---	None
		November	0.0-1.7	0.8-1.7	0.0-0.2	Brief	Occasional	---	None
		December	0.0-1.7	0.8-1.7	0.0-0.3	Long	Frequent	---	None
Redding loam-----	C	January	1.3-3.3	1.7-3.3	---	---	None	---	None
		February	1.3-3.3	1.7-3.3	---	---	None	---	None
		March	1.3-3.3	1.7-3.3	---	---	None	---	None
		April	1.3-3.3	1.7-3.3	---	---	None	---	None
		December	1.3-3.3	1.7-3.3	---	---	None	---	None
Argonaut taxadjunct loam-----	C	Jan-Dec	---	---	---	---	None	---	None
Haploxererts gravelly silty clay-----	D	January	0.0-5.0	3.3-5.0	0.0-0.3	Long	Frequent	---	None
		February	0.0-5.0	3.3-5.0	0.0-0.3	Long	Frequent	---	None
		March	0.0-5.0	3.3-5.0	0.0-0.3	Long	Frequent	---	None
		April	0.0-5.0	3.3-5.0	0.0-0.3	Long	Frequent	---	None
		November	0.0-5.0	3.3-5.0	0.0-0.3	Long	Frequent	---	None
		December	0.0-5.0	3.3-5.0	0.0-0.3	Long	Frequent	---	None
603: Oroville gravelly fine sandy loam-----	C	January	0.0-3.3	1.7-3.3	0.0-0.3	Very long	Frequent	---	None
		February	0.0-3.3	1.7-3.3	0.0-0.3	Very long	Frequent	---	None
		March	0.0-3.3	1.7-3.3	0.0-0.3	Very long	Frequent	---	None
		April	0.0-3.3	1.7-3.3	0.0-0.1	Long	Occasional	---	None
		December	0.0-3.3	1.7-3.3	0.0-0.3	Very long	Frequent	---	None
Thermalito sandy loam-----	C	January	1.2-3.3	1.7-3.3	---	---	None	---	None
		February	1.2-3.3	1.7-3.3	---	---	None	---	None
		March	1.2-3.3	1.7-3.3	---	---	None	---	None
		April	1.2-3.3	1.7-3.3	---	---	None	---	None
		December	1.2-3.3	1.7-3.3	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
603: Fernandez sandy loam-----	C	January	3.3-6.7	5.0-6.7	---	---	None	---	None
		February	3.3-6.7	5.0-6.7	---	---	None	---	None
		March	3.3-6.7	5.0-6.7	---	---	None	---	None
		April	3.3-6.7	5.0-6.7	---	---	None	---	None
		December	3.3-6.7	5.0-6.7	---	---	None	---	None
Thompsonflat fine sandy loam-----	C	January	3.3-6.7	---	---	---	None	---	None
		February	3.3-6.7	---	---	---	None	---	None
		March	3.3-6.7	---	---	---	None	---	None
		April	3.3-6.7	---	---	---	None	---	None
		December	3.3-6.7	---	---	---	None	---	None
605: Duric Xerarents fine sandy loam, leveled	D	January	0.0-3.3	0.0-3.3	0.2-0.5	Very long	Frequent	---	None
		February	0.0-3.3	0.0-3.3	0.2-0.5	Very long	Frequent	---	None
		March	0.0-3.3	0.0-3.3	0.2-0.5	Very long	Frequent	---	None
		April	0.0-3.3	0.0-3.3	0.0-0.5	Long	Occasional	---	None
		December	0.0-3.3	0.0-3.3	0.2-0.5	Very long	Frequent	---	None
Oroville gravelly fine sandy loam-----	C	January	0.0-3.3	1.7-3.3	0.0-0.3	Very long	Frequent	---	None
		February	0.0-3.3	1.7-3.3	0.0-0.3	Very long	Frequent	---	None
		March	0.0-3.3	1.7-3.3	0.0-0.3	Very long	Frequent	---	None
		April	0.0-3.3	1.7-3.3	0.0-0.1	Long	Frequent	---	None
		December	0.0-3.3	1.7-3.3	0.0-0.3	Very long	Frequent	---	None
606: Redtough loam-----	D	January	0.2-1.7	0.8-1.7	---	---	None	---	None
		February	0.2-1.7	0.8-1.7	---	---	None	---	None
		March	0.2-1.7	0.8-1.7	---	---	None	---	None
		November	0.2-1.7	0.8-1.7	---	---	None	---	None
		December	0.2-1.7	0.8-1.7	---	---	None	---	None
Fallager loam-----	D	January	0.0-0.8	0.3-0.8	0.0-0.1	Brief	Frequent	---	None
		February	0.0-0.8	0.3-0.8	0.0-0.1	Brief	Frequent	---	None
		March	0.0-0.8	0.3-0.8	0.0-0.1	Brief	Frequent	---	None
		November	0.0-0.8	0.3-0.8	0.0-0.1	Very brief	Occasional	---	None
		December	0.0-0.8	0.3-0.8	0.0-0.1	Brief	Frequent	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
606: Anita, gravelly duripan-----	D	January	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	---	None
		February	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	---	None
		March	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	---	None
		April	0.0-1.7	0.8-1.7	0.0-0.2	Brief	Occasional	---	None
		May	0.0-1.7	0.8-1.7	0.0-0.2	Very brief	Rare	---	None
		November	0.0-1.7	0.8-1.7	0.0-0.2	Brief	Occasional	---	None
		December	0.0-1.7	0.8-1.7	0.0-0.3	Long	Frequent	---	None
609: Anita, gravelly duripan-----	D	January	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	---	None
		February	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	---	None
		March	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	---	None
		April	0.0-1.7	0.8-1.7	0.0-0.2	Brief	Occasional	---	None
		May	0.0-1.7	0.8-1.7	0.0-0.2	Very brief	Rare	---	None
		November	0.0-1.7	0.8-1.7	0.0-0.2	Brief	Occasional	---	None
		December	0.0-1.7	0.8-1.7	0.0-0.3	Long	Frequent	---	None
Tuscan taxadjunct gravelly clay loam-----	C	January	0.2-3.3	1.7-3.3	---	---	None	---	None
		February	0.2-3.3	1.7-3.3	---	---	None	---	None
		March	0.2-3.3	1.7-3.3	---	---	None	---	None
		April	0.2-3.3	1.7-3.3	---	---	None	---	None
		December	0.2-3.3	1.7-3.3	---	---	None	---	None
614: Doemill gravelly loam-----	D	January	0.2-1.7	0.8-1.7	---	---	None	---	None
		February	0.2-1.7	0.8-1.7	---	---	None	---	None
		March	0.2-1.7	0.8-1.7	---	---	None	---	None
		November	0.8-1.7	0.8-1.7	---	---	None	---	None
		December	0.8-1.7	0.8-1.7	---	---	None	---	None
Jokerst very cobbly loam-----	D	January	0.0-0.8	0.2-0.8	0.0-0.1	Brief	Frequent	Very brief	Frequent
		February	0.0-0.8	0.2-0.8	0.0-0.1	Brief	Frequent	Very brief	Frequent
		March	0.0-0.8	0.2-0.8	0.0-0.1	Very brief	Frequent	Very brief	Frequent
		November	0.0-0.8	0.2-0.8	0.0-0.1	Very brief	Occasional	---	None
		December	0.0-0.8	0.2-0.8	0.0-0.1	Brief	Frequent	Very brief	Frequent

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table		Ponding			Flooding	
			Upper limit Ft	Lower limit Ft	Surface water depth Ft	Duration	Frequency	Duration	Frequency
615: Doemill gravelly loam-----	D	January	0.2-1.7	0.8-1.7	---	---	None	---	None
February		0.2-1.7	0.8-1.7	---	---	None	---	None	
March		0.2-1.7	0.8-1.7	---	---	None	---	None	
November		0.8-1.7	0.8-1.7	---	---	None	---	None	
December		0.8-1.7	0.8-1.7	---	---	None	---	None	
Jokerst very cobbly loam-----	D	January	0.0-0.8	0.2-0.8	0.0-0.1	Very brief	Frequent	Very brief	Frequent
February		0.0-0.8	0.2-0.8	0.0-0.1	Very brief	Frequent	Very brief	Frequent	
March		0.0-0.8	0.2-0.8	0.0-0.1	Very brief	Frequent	Very brief	Frequent	
November		0.0-0.8	0.2-0.8	0.0-0.1	Very brief	Occasional	---	None	
December		0.0-0.8	0.2-0.8	0.0-0.1	Very brief	Frequent	Very brief	Frequent	
616: Jokerst very cobbly loam-----	D	January	0.0-0.8	0.2-0.8	---	---	None	---	None
February		0.0-0.8	0.2-0.8	---	---	None	---	None	
March		0.0-0.8	0.2-0.8	---	---	None	---	None	
November		0.0-0.8	0.2-0.8	---	---	None	---	None	
December		0.0-0.8	0.2-0.8	---	---	None	---	None	
Doemill gravelly loam-----	D	January	0.3-1.7	0.8-1.7	---	---	None	---	None
February		0.3-1.7	0.8-1.7	---	---	None	---	None	
March		0.3-1.7	0.8-1.7	---	---	None	---	None	
November		0.3-1.7	0.8-1.7	---	---	None	---	None	
December		0.3-1.7	0.8-1.7	---	---	None	---	None	
Typic Haploxeralfs gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
617: Doemill gravelly loam-----	D	January	0.5-1.7	0.8-1.7	---	---	None	---	None
February		0.5-1.7	0.8-1.7	---	---	None	---	None	
Jokerst very cobbly loam-----	D	January	0.0-0.8	0.2-0.8	---	---	None	---	None
February		0.0-0.8	0.2-0.8	---	---	None	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
617: Typic Haploxeralfs gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
619: Carhart taxadjunct clay-----	D	January	0.0-3.3	0.8-3.3	0.0-0.5	Long	Frequent	---	None
		February	0.0-3.3	0.8-3.3	0.0-0.5	Long	Frequent	---	None
		March	0.0-3.3	0.8-3.3	0.0-0.5	Long	Frequent	---	None
		April	0.0-3.3	0.8-3.3	0.0-0.2	Brief	Rare	---	None
		May	0.0-3.3	0.8-3.3	0.0-0.2	Very brief	Rare	---	None
		November	0.0-3.3	0.8-3.3	0.0-0.2	Brief	Rare	---	None
		December	0.0-3.3	0.8-3.3	0.0-0.3	Long	Frequent	---	None
620: Doemill gravelly loam-----	D	January	0.2-1.7	0.8-1.7	---	---	None	---	None
		February	0.2-1.7	0.8-1.7	---	---	None	---	None
		March	0.2-1.7	0.8-1.7	---	---	None	---	None
		November	0.8-1.7	0.8-1.7	---	---	None	---	None
		December	0.8-1.7	0.8-1.7	---	---	None	---	None
Jokerst very cobbly loam-----	D	January	0.0-0.8	0.2-0.8	0.0-0.1	Very brief	Frequent	---	None
		February	0.0-0.8	0.2-0.8	0.0-0.1	Very brief	Frequent	---	None
		March	0.0-0.8	0.2-0.8	0.0-0.1	Very brief	Frequent	---	None
		November	0.0-0.8	0.2-0.8	0.0-0.1	Very brief	Occasional	---	None
		December	0.0-0.8	0.2-0.8	0.0-0.1	Very brief	Frequent	---	None
Ultic Haploxeralfs, thermic, gravelly loam-----	C	January	1.5-3.3	1.7-3.3	---	---	None	---	None
		February	1.5-3.3	1.7-3.3	---	---	None	---	None
		March	1.5-3.3	1.7-3.3	---	---	None	---	None
		December	1.5-3.3	1.7-3.3	---	---	None	---	None
621: Doemill gravelly loam-----	D	January	0.3-1.7	0.8-1.7	---	---	None	---	None
		February	0.3-1.7	0.8-1.7	---	---	None	---	None
		March	0.3-1.7	0.8-1.7	---	---	None	---	None
		November	0.3-1.7	0.8-1.7	---	---	None	---	None
		December	0.3-1.7	0.8-1.7	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
621: Jokerst very cobbly loam-----	D	January	0.0-0.8	0.2-0.8	---	---	None	---	None
		February	0.0-0.8	0.2-0.8	---	---	None	---	None
		March	0.0-0.8	0.2-0.8	---	---	None	---	None
		November	0.0-0.8	0.2-0.8	---	---	None	---	None
		December	0.0-0.8	0.2-0.8	---	---	None	---	None
Ultic Haploxeralfs, thermic, gravelly loam-----	C	January	1.6-3.3	1.7-3.3	---	---	None	---	None
		February	1.6-3.3	1.7-3.3	---	---	None	---	None
		March	1.6-3.3	1.7-3.3	---	---	None	---	None
		December	1.6-3.3	1.7-3.3	---	---	None	---	None
622: Xerorthents, shallow-----	D	Jan-Dec	---	---	---	---	None	---	None
Typic Haploxeralfs gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop, mudflow-breccia cliffs.									
623: Xerorthents, shallow-----	D	Jan-Dec	---	---	---	---	None	---	None
Typic Haploxeralfs gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop, mudflow-breccia cliffs.									
624: Ultic Haploxeralfs, mesic, gravelly loam	B	Jan-Dec	---	---	---	---	None	---	None
Rockstripe very gravelly loam-----	D	Jan-Dec	---	---	---	---	None	---	None
625: Ultic Haploxeralfs, mesic, gravelly loam	B	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
625: Rockstripe very gravelly loam-----	D	Jan-Dec	---	---	---	---	None	---	None
626: Ultic Haploxeralfs gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Rockstripe very gravelly loam-----	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop, mudflow-breccia cliffs.									
627: Ultic Haploxeralfs gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Rockstripe very gravelly loam-----	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop, mudflow-breccia cliffs.									
628: Rockstripe very gravelly loam-----	D	Jan-Dec	---	---	---	---	None	---	None
Ultic Haploxeralfs gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop, mudflow-breccia cliffs.									
629: Slideland gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
630: Slideland gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
631: Slideland gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
632: Ultic Haploxeralfs, conglomerate, very deep-----	B	Jan-Dec	---	---	---	---	None	---	None
Ultic Haploxeralfs, conglomerate, moderately deep-----	B	Jan-Dec	---	---	---	---	None	---	None
633: Ultic Haploxeralfs, conglomerate, very deep-----	B	Jan-Dec	---	---	---	---	None	---	None
Ultic Haploxeralfs, conglomerate, moderately deep-----	B	Jan-Dec	---	---	---	---	None	---	None
634: Ultic Haploxeralfs, conglomerate, very deep-----	B	Jan-Dec	---	---	---	---	None	---	None
Ultic Haploxeralfs, conglomerate, moderately deep-----	B	Jan-Dec	---	---	---	---	None	---	None
635: Ultic Haploxeralfs, conglomerate, very deep-----	B	Jan-Dec	---	---	---	---	None	---	None
Ultic Haploxeralfs, conglomerate, moderately deep-----	B	Jan-Dec	---	---	---	---	None	---	None
636: Ultic Haploxeralfs, conglomerate, moderately deep-----	B	Jan-Dec	---	---	---	---	None	---	None
Ultic Haploxeralfs, conglomerate, very deep-----	B	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
637: Ultic Haploxeralfs, sandstone-----	B	Jan-Dec	---	---	---	---	None	---	None
638: Ultic Haploxeralfs, sandstone-----	B	Jan-Dec	---	---	---	---	None	---	None
639: Ultic Haploxeralfs, sandstone-----	B	Jan-Dec	---	---	---	---	None	---	None
640: Ultic Haploxeralfs, sandstone-----	B	Jan-Dec	---	---	---	---	None	---	None
641: Ultic Haploxeralfs, sandstone-----	B	Jan-Dec	---	---	---	---	None	---	None
642: Chinacamp gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
643: Chinacamp gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
644: Chinacamp gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
645: Chinacamp gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
646: Coalcanyon taxadjunct very gravelly loam	B	Jan-Dec	---	---	---	---	None	---	None
647: Coalcanyon taxadjunct very gravelly loam	B	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
648: Coalcanon taxadjunct very gravelly loam	B	Jan-Dec	---	---	---	---	None	---	None
649: Coalcanon taxadjunct very gravelly loam	B	Jan-Dec	---	---	---	---	None	---	None
650: Schott very gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
651: Schott very gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
652: Schott very gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop, mudflow breccia.									
654: Coridge bouldery loam-----	C	January	0.8-3.3	1.7-3.3	---	---	None	---	None
		February	0.8-3.3	1.7-3.3	---	---	None	---	None
		March	0.8-3.3	1.7-3.3	---	---	None	---	None
		April	0.8-3.3	1.7-3.3	---	---	None	---	None
		December	0.8-3.3	1.7-3.3	---	---	None	---	None
Rock outcrop, Cohasset basalt.									
655: Coridge bouldery loam-----	C	January	0.8-3.3	1.7-3.3	---	---	None	---	None
		February	0.8-3.3	1.7-3.3	---	---	None	---	None
		March	0.8-3.3	1.7-3.3	---	---	None	---	None
		December	0.8-3.3	1.7-3.3	---	---	None	---	None
Rock outcrop, Cohasset basalt.									
656: Rock outcrop, basalt cliffs.									

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
656: Coalcanyon taxadjunct very gravelly loam	B	Jan-Dec	---	---	---	---	None	---	None
657: Bonneyridge sandy loam-----	A	Jan-Dec	---	---	---	---	None	---	None
Chawanakee gravelly sandy loam-----	C	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop, quartz diorite.									
658: Bonneyridge sandy loam-----	A	Jan-Dec	---	---	---	---	None	---	None
Chawanakee gravelly sandy loam-----	C	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop, quartz diorite.									
659: Bonneyridge sandy loam-----	A	Jan-Dec	---	---	---	---	None	---	None
Chawanakee gravelly sandy loam-----	C	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop, quartz diorite.									
660: Bonneyridge sandy loam-----	A	Jan-Dec	---	---	---	---	None	---	None
Chawanakee gravelly sandy loam-----	C	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop, quartz diorite.									
661: Millerridge gravelly sandy clay loam-----	C	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
661: Boxrobber cobbly sandy clay loam-----	D	Jan-Dec	---	---	---	---	None	---	None
662: Millerridge gravelly sandy clay loam----	C	Jan-Dec	---	---	---	---	None	---	None
Boxrobber cobbly sandy clay loam-----	D	Jan-Dec	---	---	---	---	None	---	None
663: Millerridge gravelly sandy clay loam----	C	Jan-Dec	---	---	---	---	None	---	None
Boxrobber cobbly sandy clay loam-----	D	Jan-Dec	---	---	---	---	None	---	None
664: Millerridge gravelly sandy clay loam----	C	Jan-Dec	---	---	---	---	None	---	None
Boxrobber cobbly sandy clay loam-----	D	Jan-Dec	---	---	---	---	None	---	None
665: Surnuf gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Bigridge loam-----	B	Jan-Dec	---	---	---	---	None	---	None
666: Surnuf gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Bigridge loam-----	B	Jan-Dec	---	---	---	---	None	---	None
667: Surnuf gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
667: Bigridge loam-----	B	Jan-Dec	---	---	---	---	None	---	None
668: Surnuf gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Bigridge loam-----	B	Jan-Dec	---	---	---	---	None	---	None
669: Oroshore gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Mounthope loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Dunstone gravelly loam-----	D	Jan-Dec	---	---	---	---	None	---	None
670: Oroshore gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Mounthope loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Dunstone gravelly loam-----	D	Jan-Dec	---	---	---	---	None	---	None
671: Oroshore gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Mounthope loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Dunstone gravelly loam-----	D	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
672: Oroshore gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Mounthope loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Dunstone gravelly loam-----	D	Jan-Dec	---	---	---	---	None	---	None
674: Chawanakee gravelly sandy loam-----	C	Jan-Dec	---	---	---	---	None	---	None
Bonneyridge sandy loam-----	A	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop, quartz diorite.									
675: Clearhayes sandy clay loam-----	B	January	1.1-5.0	3.3-5.0	---	---	None	Very brief	Occasional
		February	1.1-5.0	3.3-5.0	---	---	None	Very brief	Occasional
		March	1.1-5.0	3.3-5.0	---	---	None	Very brief	Occasional
		April	1.1-5.0	3.3-5.0	---	---	None	---	None
		December	1.1-5.0	3.3-5.0	---	---	None	Very brief	Occasional
Hamslough clay-----	D	January	0.0-6.7	---	0.0-0.3	Brief	Frequent	Brief	Occasional
		February	0.0-6.7	---	0.0-0.3	Brief	Frequent	Brief	Occasional
		March	0.0-6.7	---	0.0-0.3	Brief	Frequent	Brief	Occasional
		April	0.0-6.7	---	0.0-0.2	Brief	Rare	---	None
		November	---	---	0.0-0.2	Brief	Rare	---	None
		December	0.0-6.7	---	0.0-0.3	Brief	Frequent	Brief	Occasional
676: Carhart clay-----	D	January	0.0-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	---	None
		February	0.0-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	---	None
		March	0.0-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	---	None
		April	0.0-3.3	1.7-3.3	0.0-0.2	Brief	Rare	---	None
		May	0.0-3.3	1.7-3.3	---	---	None	---	None
		December	0.0-3.3	1.7-3.3	0.0-0.2	Brief	Rare	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
676: Anita taxadjunct clay-----	D	January	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	---	None
		February	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	---	None
		March	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	---	None
		April	0.0-1.7	0.8-1.7	0.0-0.2	Brief	Occasional	---	None
		May	0.0-1.7	0.8-1.7	0.0-0.2	Very brief	Rare	---	None
		November	0.0-1.7	0.8-1.7	0.0-0.2	Brief	Occasional	---	None
		December	0.0-1.7	0.8-1.7	0.0-0.3	Long	Frequent	---	None
677: Tuscan gravelly loam-----	D	January	0.2-1.7	0.8-1.7	---	---	None	---	None
		February	0.2-1.7	0.8-1.7	---	---	None	---	None
		March	0.2-1.7	0.8-1.7	---	---	None	---	None
		November	0.2-1.7	0.8-1.7	---	---	None	---	None
		December	0.2-1.7	0.8-1.7	---	---	None	---	None
Fallager loam-----	D	January	0.0-0.8	0.3-0.8	0.0-0.1	Brief	Frequent	---	None
		February	0.0-0.8	0.3-0.8	0.0-0.1	Brief	Frequent	---	None
		March	0.0-0.8	0.3-0.8	0.0-0.1	Brief	Frequent	---	None
		November	0.0-0.8	0.3-0.8	0.0-0.1	Very brief	Occasional	---	None
		December	0.0-0.8	0.3-0.8	0.0-0.1	Brief	Frequent	---	None
Anita, gravelly duripan-----	D	January	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	---	None
		February	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	---	None
		March	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	---	None
		April	0.0-1.7	0.8-1.7	0.0-0.2	Brief	Occasional	---	None
		May	0.0-1.7	0.8-1.7	0.0-0.2	Very brief	Rare	---	None
		November	0.0-1.7	0.8-1.7	0.0-0.2	Brief	Occasional	---	None
		December	0.0-1.7	0.8-1.7	0.0-0.3	Long	Frequent	---	None
679: Lucksev loam-----	D	January	0.2-1.7	0.3-1.7	---	---	None	---	None
		February	0.2-1.7	0.3-1.7	---	---	None	---	None
		March	0.2-1.7	0.3-1.7	---	---	None	---	None
		December	0.2-1.7	0.3-1.7	---	---	None	---	None
Butteside gravelly loam-----	C	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
679: Carhart clay-----	D	January	0.0-3.3	1.7-3.3	---	---	None	---	None
		February	0.0-3.3	1.7-3.3	---	---	None	---	None
		March	0.0-3.3	1.7-3.3	---	---	None	---	None
		April	0.0-3.3	1.7-3.3	---	---	None	---	None
		May	0.0-3.3	1.7-3.3	---	---	None	---	None
		December	0.0-3.3	1.7-3.3	---	---	None	---	None
680: Lucksev loam-----	D	Jan-Dec	---	---	---	---	None	---	None
Butteside gravelly loam-----	C	Jan-Dec	---	---	---	---	None	---	None
683: Typic Haploxeralfs, magnesian, low elevation-----	C	Jan-Dec	---	---	---	---	None	---	None
Earlal very gravelly loam-----	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop, serpentinite.									
684: Typic Haploxeralfs, magnesian, low elevation-----	C	Jan-Dec	---	---	---	---	None	---	None
Earlal very gravelly loam-----	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop, serpentinite.									
685: Bosquejo taxadjunct, gravelly substratum	D	January	1.0-5.0	---	0.0-0.2	Brief	Occasional	Very brief	Rare
		February	1.0-5.0	---	0.0-0.2	Brief	Occasional	Very brief	Rare
		March	1.0-5.0	---	0.0-0.2	Brief	Occasional	Very brief	Rare
		April	1.0-5.0	---	0.0-0.2	Very brief	Rare	---	None
		December	1.0-5.0	---	0.0-0.2	Very brief	Rare	Very brief	Rare

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
686: Redsluff taxadjunct clay loam-----	B	January	3.0-5.0	5.0-7.1	---	---	None	Very brief	Rare
		February	3.0-5.0	5.0-7.1	---	---	None	Very brief	Rare
		March	3.0-5.0	5.0-7.1	---	---	None	Very brief	Rare
		April	3.0-5.0	5.0-7.1	---	---	None	---	None
		May	5.0-6.1	5.0-7.1	---	---	None	---	None
		June	5.0-6.7	5.0-7.1	---	---	None	---	None
		December	3.0-5.0	5.0-7.1	---	---	None	Very brief	Rare
687: Xerorthents, shallow-----	D	Jan-Dec	---	---	---	---	None	---	None
Typic Haploxeralfs gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
700: Retsongulch very gravelly sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Flumewall gravelly sandy loam-----	D	Jan-Dec	---	---	---	---	None	---	None
701: Powellton gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Obstruction gravelly sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
702: Cerpone gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Typic Haploxeralfs, magnesian, very gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Earlal very gravelly loam-----	D	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
703:									
Cerpone gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Typic Haploxeralfs, magnesian, very gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Earlal very gravelly loam-----	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop, serpentinite.									
704:									
Typic Haploxeralfs, magnesian, very gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Earlal very gravelly loam-----	D	Jan-Dec	---	---	---	---	None	---	None
Cerpone gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop, serpentinite.									
705:									
Typic Haploxeralfs, magnesian, very gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Earlal very gravelly loam-----	D	Jan-Dec	---	---	---	---	None	---	None
Cerpone gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop, serpentinite.									
711:									
Dixmine very gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
711: Toadtown loam-----	B	Jan-Dec	---	---	---	---	None	---	None
712: Dixmine very gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Toadtown loam-----	B	Jan-Dec	---	---	---	---	None	---	None
713: Dixmine very gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Toadtown loam-----	B	Jan-Dec	---	---	---	---	None	---	None
714: Dixmine very gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Toadtown loam-----	B	Jan-Dec	---	---	---	---	None	---	None
715: Logtrain gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Bottlehill very gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Walkermine very gravelly loam-----	D	Jan-Dec	---	---	---	---	None	---	None
716: Griffgulch very gravelly silt loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Surnuf gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
717:									
Griffgulch very gravelly silt loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Surnuf gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
718:									
Griffgulch very gravelly silt loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Surnuf gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Spine taxadjunct very cobbly loam-----	D	Jan-Dec	---	---	---	---	None	---	None
719:									
Griffgulch very gravelly silt loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Surnuf gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Spine taxadjunct very cobbly loam-----	D	Jan-Dec	---	---	---	---	None	---	None
720:									
Dystroxerepts extremely gravelly loam----	B	Jan-Dec	---	---	---	---	None	---	None
Haploxeralfs very gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop, metavolcanic.									
721:									
Haploxerands, granitic till, medial sandy loam-----	A	Jan-Dec	---	---	---	---	None	---	None
722:									
Haploxerands, granitic till, medial sandy loam-----	A	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
723: Haploxerands, granitic till, medial sandy loam-----	A	Jan-Dec	---	---	---	---	None	---	None
724: Haploxerands, volcanic till, cobbly medial sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
725: Haploxerands, volcanic till, cobbly medial sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
726: Haploxerands, volcanic till, cobbly medial sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
727: Bonneyridge sandy loam-----	A	Jan-Dec	---	---	---	---	None	---	None
728: Bonneyridge sandy loam-----	A	Jan-Dec	---	---	---	---	None	---	None
729: Bonneyridge sandy loam-----	A	Jan-Dec	---	---	---	---	None	---	None
730: Tusccoll gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Schott very gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
731: Tusccoll gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Schott very gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table		Surface water depth	Ponding		Flooding	
			Upper limit	Lower limit		Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
732: Bonpile taxadjunct, duripan substratum--	B	January	3.1-6.0	---	---	---	None	---	None
		February	3.1-6.0	---	---	---	None	---	None
		March	3.1-6.0	---	---	---	None	---	None
		April	3.1-6.0	---	---	---	None	---	None
		May	3.1-6.0	---	---	---	None	---	None
		June	3.1-6.0	---	---	---	None	---	None
		July	4.9-8.2	---	---	---	None	---	None
		August	6.6-12	---	---	---	None	---	None
		September	6.6-12	---	---	---	None	---	None
		October	6.6-12	---	---	---	None	---	None
		November	4.9-12	---	---	---	None	---	None
		December	3.1-6.0	---	---	---	None	---	None
733: Haploxeralfs, terrace, gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
734: Haploxerands medial sandy loam-----	A	Jan-Dec	---	---	---	---	None	---	None
Aquic Xerofluvents peaty very fine sandy loam-----	D	January	0.0-1.4	---	---	---	None	Long	Occasional
		February	0.0-1.4	---	---	---	None	Long	Occasional
		March	0.0-1.4	---	---	---	None	Long	Frequent
		April	0.0-2.3	---	---	---	None	Long	Frequent
		May	0.0-2.3	---	---	---	None	Long	Frequent
		June	0.0-3.6	---	---	---	None	Long	Occasional
		July	1.4-6.1	---	---	---	None	---	None
		August	3.6-6.6	---	---	---	None	---	None
		September	4.8-8.2	---	---	---	None	---	None
		October	4.8-8.2	---	---	---	None	---	None
		November	1.4-6.1	---	---	---	None	Brief	Rare
		December	0.0-3.6	---	---	---	None	Brief	Occasional

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
735: Fluvaquents, loamy-----	C	January	0.8-3.3	---	---	---	None	Brief	Rare
		February	0.8-3.3	---	---	---	None	Brief	Rare
		March	0.8-3.3	---	---	---	None	Brief	Rare
		April	1.3-3.9	---	---	---	None	Brief	Rare
		May	1.6-4.3	---	---	---	None	---	None
		June	3.6-4.9	---	---	---	None	---	None
		July	3.9-5.2	---	---	---	None	---	None
		August	4.3-5.2	---	---	---	None	---	None
		September	4.6-5.6	---	---	---	None	---	None
		October	4.6-5.6	---	---	---	None	---	None
		November	3.9-5.2	---	---	---	None	---	None
		December	1.3-3.9	---	---	---	None	Brief	Rare
801: Obstruction gravelly sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
802: Obskel very gravelly sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Obstruction gravelly sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
803: Obskel very gravelly sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Obstruction gravelly sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
804: Obskel very gravelly sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Obstruction gravelly sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Retsongulch very gravelly sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
805:			Ft	Ft	Ft				
Bottlehill very gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Walkermine very gravelly loam-----	D	Jan-Dec	---	---	---	---	None	---	None
Logtrain gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
806:									
Bottlehill very gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Walkermine very gravelly loam-----	D	Jan-Dec	---	---	---	---	None	---	None
Logtrain gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
807:									
Bottlehill very gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Logtrain gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Walkermine very gravelly loam-----	D	Jan-Dec	---	---	---	---	None	---	None
808:									
Bottlehill very gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Walkermine very gravelly loam-----	D	Jan-Dec	---	---	---	---	None	---	None
Logtrain gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
809:									
Walkermine very gravelly loam-----	D	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
809:			Ft	Ft	Ft				
Bottlehill very gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Logtrain gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop, metavolcanic.									
810:									
Dixmine very gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Mac gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Spine very gravelly loam-----	D	Jan-Dec	---	---	---	---	None	---	None
811:									
Powellton gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Toadtown loam-----	B	Jan-Dec	---	---	---	---	None	---	None
812:									
Powellton gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Toadtown loam-----	B	Jan-Dec	---	---	---	---	None	---	None
813:									
Powellton gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Toadtown loam-----	B	Jan-Dec	---	---	---	---	None	---	None
814:									
Mountyana gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
815: Mountyana gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
817: Lydon very gravelly medial coarse sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
818: Lydon very gravelly medial coarse sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
819: Lydon very gravelly medial coarse sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop, mudflow breccia.									
820: Lydon very gravelly medial coarse sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop, mudflow breccia.									
821: Lydon very gravelly medial coarse sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop, mudflow breccia.									
822: Bonpile gravelly medial loam-----	B	Jan-Dec	---	---	---	---	None	---	None
823: Bonpile gravelly medial loam-----	B	Jan-Dec	---	---	---	---	None	---	None
824: Beecee very gravelly medial loam-----	B	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
825: Beecee very gravelly medial loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Lydon very gravelly medial coarse sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
826: Redbone gravelly medial sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
827: Redbone gravelly medial sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
829: Paradiso loam-----	B	Jan-Dec	---	---	---	---	None	---	None
830: Paradiso loam-----	B	Jan-Dec	---	---	---	---	None	---	None
831: Surnuf gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Bigridge loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Spine very gravelly loam-----	D	Jan-Dec	---	---	---	---	None	---	None
832: Surnuf gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Bigridge loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Spine very gravelly loam-----	D	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
833: Surnuf gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Bigridge loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Spine very gravelly loam-----	D	Jan-Dec	---	---	---	---	None	---	None
834: Hietanen gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Mac gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
835: Hietanen gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Mac gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
836: Hietanen gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Mac gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Spine very gravelly loam-----	D	Jan-Dec	---	---	---	---	None	---	None
837: Hietanen gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Spine very gravelly loam-----	D	Jan-Dec	---	---	---	---	None	---	None
Mac gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
838: Dixmine very gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Spine very gravelly loam-----	D	Jan-Dec	---	---	---	---	None	---	None
Mac gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
839: Chawanakee gravelly sandy loam-----	C	Jan-Dec	---	---	---	---	None	---	None
Billscabin gravelly sandy loam-----	A	Jan-Dec	---	---	---	---	None	---	None
841: Billscabin gravelly sandy loam-----	A	Jan-Dec	---	---	---	---	None	---	None
Bonneyridge sandy loam-----	A	Jan-Dec	---	---	---	---	None	---	None
842: Billscabin gravelly sandy loam-----	A	Jan-Dec	---	---	---	---	None	---	None
Bonneyridge sandy loam-----	A	Jan-Dec	---	---	---	---	None	---	None
846: Bonneyridge sandy loam-----	A	Jan-Dec	---	---	---	---	None	---	None
Lewisflat loam-----	B	Jan-Dec	---	---	---	---	None	---	None
847: Bonneyridge sandy loam-----	A	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
847: Lewisflat loam-----	B	Jan-Dec	---	---	---	---	None	---	None
848: Bonneyridge sandy loam-----	A	Jan-Dec	---	---	---	---	None	---	None
Lewisflat loam-----	B	Jan-Dec	---	---	---	---	None	---	None
850: Lewisflat loam-----	B	Jan-Dec	---	---	---	---	None	---	None
851: Lewisflat loam-----	B	Jan-Dec	---	---	---	---	None	---	None
852: Lewisflat loam-----	B	Jan-Dec	---	---	---	---	None	---	None
860: Toadtown gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Powellton silt loam-----	B	Jan-Dec	---	---	---	---	None	---	None
861: Toadtown gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Powellton silt loam-----	B	Jan-Dec	---	---	---	---	None	---	None
862: Toadtown gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Powellton silt loam-----	B	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
863: Toadtown gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Powellton silt loam-----	B	Jan-Dec	---	---	---	---	None	---	None
880: Sites taxadjunct gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Jocal taxadjunct gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
881: Sites taxadjunct gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Jocal taxadjunct gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
882: Sites taxadjunct gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Jocal taxadjunct gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
883: Sites taxadjunct gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Jocal taxadjunct gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
885: Rogerville silt loam-----	B	Jan-Dec	---	---	---	---	None	---	None
886: Rogerville silt loam-----	B	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
892: Rogerville silt loam-----	B	Jan-Dec	---	---	---	---	None	---	None
893: Rogerville silt loam-----	B	Jan-Dec	---	---	---	---	None	---	None
902: Lava flows, Lovejoy basalt. Lumpkin gravelly medial sandy loam-----	D	Jan-Dec	---	---	---	---	None	---	None
903: Mudwash gravelly medial sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Timberisland very gravelly medial sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Lavatop gravelly medial fine sandy loam--	B	Jan-Dec	---	---	---	---	None	---	None
904: Lava flows, Lovejoy basalt. Lavatop gravelly medial fine sandy loam--	B	Jan-Dec	---	---	---	---	None	---	None
905: Lava flows, Lovejoy basalt. Lumpkin gravelly medial sandy loam-----	D	Jan-Dec	---	---	---	---	None	---	None
906: Lava flows, Lovejoy basalt. Lumpkin gravelly medial sandy loam-----	D	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
911: Endoaquolls loam-----	D	January	0.0-1.4	---	---	---	None	Long	Occasional
		February	0.0-1.4	---	---	---	None	Long	Occasional
		March	0.0-1.4	---	---	---	None	Long	Occasional
		April	0.0-2.3	---	---	---	None	Long	Occasional
		May	0.0-2.3	---	---	---	None	Long	Occasional
		June	0.0-3.6	---	---	---	None	Brief	Rare
		July	1.4-6.1	---	---	---	None	---	None
		August	3.6-6.6	---	---	---	None	---	None
		September	4.8-7.2	---	---	---	None	---	None
		October	4.8-7.2	---	---	---	None	---	None
		November	1.4-6.1	---	---	---	None	Brief	Rare
		December	0.0-3.6	---	---	---	None	Long	Occasional
923: Powderhouse medial sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
McNair medial coarse sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Greenwell medial sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
924: Powderhouse medial sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
McNair medial coarse sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Greenwell medial sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
925: Powderhouse medial sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
McNair medial coarse sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Greenwell medial sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table		Surface water depth	Ponding		Flooding	
			Upper limit	Lower limit		Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
930: Shakeridge gravelly medial coarse sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Timberisland very gravelly medial sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
931: Shakeridge gravelly medial coarse sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Mudwash gravelly medial sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Timberisland very gravelly medial sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
932: Shakeridge gravelly medial coarse sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Mudwash gravelly medial sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
933: Shakeridge gravelly medial coarse sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
934: Mudwash gravelly medial sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
939: Fluvaquentic Humaquepts very fine sandy loam-----	D	January	0.0-5.0	---	---	---	None	---	None
		February	0.0-5.0	---	---	---	None	---	None
		March	0.0-5.0	---	---	---	None	---	None
		April	0.0-5.0	---	---	---	None	Brief	Rare
		May	0.0-5.0	---	---	---	None	Brief	Rare
		June	0.0-5.0	---	---	---	None	Brief	Rare
		July	0.0-5.0	---	---	---	None	---	None
		August	0.0-5.0	---	---	---	None	---	None
		November	0.0-5.0	---	---	---	None	---	None
		December	0.0-5.0	---	---	---	None	---	None
940: Dejonah gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Stagpoint loam-----	B	Jan-Dec	---	---	---	---	None	---	None
941: Dejonah gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Stagpoint loam-----	B	Jan-Dec	---	---	---	---	None	---	None
942: Stagpoint loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Dejonah gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None
948: Stagpoint loam-----	B	Jan-Dec	---	---	---	---	None	---	None
Dejonah gravelly loam-----	B	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
949: Rogerville taxadjunct fine sandy loam----	B	Jan-Dec	---	---	---	---	None	---	None
950: Lumpkin taxadjunct very gravelly medial very fine sandy loam-----	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop, olivine basalt, andesite, or mudflow.									
Powderhouse medial sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
951: Lumpkin taxadjunct very gravelly medial very fine sandy loam-----	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop, andesite.									
Powderhouse medial sandy loam-----	B	Jan-Dec	---	---	---	---	None	---	None
960: Surnuf gravelly loam, high elevation-----	B	Jan-Dec	---	---	---	---	None	---	None
961: Surnuf gravelly loam, high elevation-----	B	Jan-Dec	---	---	---	---	None	---	None
962: Surnuf gravelly loam, high elevation-----	B	Jan-Dec	---	---	---	---	None	---	None
963: Surnuf gravelly loam, high elevation-----	B	Jan-Dec	---	---	---	---	None	---	None

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
990: Riverwash, frequently flooded-----	D	January	0.0-2.0	>6.0	---	---	None	Very long	Frequent
		February	0.0-2.0	>6.0	---	---	None	Very long	Frequent
		March	0.0-2.0	>6.0	---	---	None	Very long	Frequent
		April	0.0-2.0	>6.0	---	---	None	Very long	Frequent
		May	0.0-2.0	>6.0	---	---	None	Very long	Frequent
		June	0.0-2.0	>6.0	---	---	None	Very long	Frequent
		July	0.0-2.0	>6.0	---	---	None	Very long	Frequent
		August	0.0-2.0	>6.0	---	---	None	---	None
		September	0.0-2.0	>6.0	---	---	None	---	None
		October	0.0-2.0	>6.0	---	---	None	Very long	Frequent
		November	0.0-2.0	>6.0	---	---	None	Very long	Frequent
		December	0.0-2.0	>6.0	---	---	None	Very long	Frequent
991: Xerofluvents sandy loam, frequently flooded-----	A	January	2.3-6.7	---	---	---	None	Brief	Frequent
		February	2.3-6.7	---	---	---	None	Brief	Frequent
		March	2.3-6.7	---	---	---	None	Brief	Occasional
		April	2.3-6.7	---	---	---	None	Brief	Occasional
		May	2.3-6.7	---	---	---	None	---	None
		June	2.3-6.7	---	---	---	None	---	None
		July	2.3-6.7	---	---	---	None	---	None
		August	2.3-6.7	---	---	---	None	---	None
		September	2.3-6.7	---	---	---	None	---	None
		October	2.3-6.7	---	---	---	None	---	None
		November	2.3-6.7	---	---	---	None	---	None
		December	2.3-6.7	---	---	---	None	Brief	Occasional
995. Pits, gravel									
996. Dumps, excavated material									
997. Pits									
998. Dumps, landfill									

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
999. Water									
DAM. Dam, manmade									

Table 25.--Soil Features

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Thickness In	Hardness		Uncoated steel	Concrete
100: Anita clay-----	Duripan	10-20	---	Indurated	None	High	Low
Galt clay-----	Duripan	20-40	4-17	Moderately cemented	None	High	Low
104: Bosquejo clay-----	---	---	---	---	None	High	Low
105: Busacca clay loam-----	---	---	---	---	None	High	Low
108: Tuscan gravelly loam-----	Duripan	10-20	---	Very strongly cemented	None	High	Low
Igo gravelly loam-----	Duripan	4-10	---	Very strongly cemented	None	High	Low
Anita clay-----	Duripan	10-20	---	Indurated	None	High	Low
109: Bosquejo clay loam-----	---	---	---	---	None	High	Low
110: Bosquejo silt loam, overwash, occasionally flooded-----	---	---	---	---	None	High	Low
111yu: Auburn loam-----	Bedrock (lithic)	10-28	---	Indurated	None	Moderate	Moderate
Sobrante loam-----	Bedrock (lithic)	20-40	---	Indurated	None	Moderate	Moderate
	Bedrock (paralithic)	20-40	---	Moderately cemented			
114yu: Auburn gravelly loam-----	Bedrock (lithic)	10-28	---	Indurated	None	Moderate	Moderate
Sobrante gravelly loam-----	Bedrock (lithic)	20-40	---	Indurated	None	Moderate	Moderate
	Bedrock (paralithic)	20-40	---	Moderately cemented			

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Thickness In	Hardness		Uncoated steel	Concrete
118: Xerorthents, tailings-----	---	---	---	---	None	Low	Low
118co: Clear Lake clay, frequently flooded---	---	---	---	---	None	High	High
119: Xerorthents, tailings-----	---	---	---	---	None	Low	Low
Urban land.							
119yu: Auburn gravelly loam-----	Bedrock (lithic)	10-28	---	Indurated	None	Moderate	Moderate
Sobrante gravelly loam-----	Bedrock (lithic) Bedrock (paralithic)	20-40 20-40	---	Indurated Moderately cemented	None	Moderate	Moderate
Rock outcrop.							
120: Gridley taxadjunct clay loam-----	Duripan	20-40	---	Moderately cemented	None	High	Low
121: Boga loam-----	Dense material	60-80	---	Noncemented	None	Moderate	Low
Loemstone loam-----	Dense material	40-60	---	Noncemented	None	Moderate	Low
121su: Columbia fine sandy loam, frequently flooded-----	---	---	---	---	None	Moderate	Low
125: Gridley taxadjunct loam-----	Duripan	20-40	---	Moderately cemented	None	High	Low
Calcic Haploxerolls sandy loam-----	Dense material	40-60	---	Noncemented	None	Low	Low
126: Liveoak sandy loam-----	---	---	---	---	None	Moderate	Low
127: Gridley taxadjunct loam-----	Duripan	20-40	---	Moderately cemented	None	High	Low

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Thickness In	Hardness		Uncoated steel	Concrete
130: Eastbiggs loam-----	Duripan	20-40	4-17	Indurated	None	High	Low
133: Eastbiggs loam-----	Duripan	20-40	4-17	Indurated	None	High	Low
Galt clay loam-----	Duripan	20-40	---	Moderately cemented	None	High	Low
136: Duric Xerarents, cut-----	Duripan	6-21	---	Indurated	None	High	Low
Duric Xerarents, fill-----	Duripan	24-80	4-17	Indurated	None	High	Low
Eastbiggs fine sandy loam, leveled---	Duripan	20-40	4-17	Indurated	None	High	Low
138su: Liveoak sandy clay loam-----	---	---	---	---	None	Moderate	Low
139su: Liveoak taxadjunct loam, frequently flooded-----	Duripan	40-60	4-17	Indurated	None	High	Low
Galt taxadjunct clay loam, frequently flooded-----	Duripan	20-35	---	Strongly cemented	None	High	Low
	Dense material	26-60	---	Noncemented			
143su: Marcum clay loam-----	Bedrock (paralithic)	40-80	---	Moderately cemented	None	High	Low
Gridley clay loam-----	Bedrock (paralithic)	20-40	---	Moderately cemented	None	High	Low
149yu: Flanly sandy loam-----	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Moderate	Moderate
150: Columbia stratified sand to fine sandy loam-----	---	---	---	---	None	High	Low
150su: Olashes sandy loam-----	---	---	---	---	None	Moderate	Low

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Thickness In	Hardness		Uncoated steel	Concrete
151yu: Flanly sandy loam-----	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Moderate	Moderate
152: Gianella fine sandy loam, frequently flooded-----	---	---	---	---	None	Low	Low
153: Gianella sandy loam, frequently flooded-----	---	---	---	---	None	Low	Low
154: Gianella silt loam, frequently flooded-----	---	---	---	---	None	Low	Low
158: Gianella fine sandy loam, occasionally flooded-----	---	---	---	---	None	Low	Low
160: Gianella loam, occasionally flooded---	---	---	---	---	None	Low	Low
161: Gianella fine sandy loam, rarely flooded-----	---	---	---	---	None	Low	Low
162: Gianella loam, rarely flooded-----	---	---	---	---	None	Low	Low
163yu: Holillipah loamy sand-----	---	---	---	---	None	Moderate	Low
165yu: Holland loam-----	---	---	---	---	None	Moderate	Moderate
Hoda loam-----	---	---	---	---	None	High	High
Hotaw loam-----	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Moderate	Moderate
173yu: Hotaw loam-----	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Moderate	Moderate

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
173yu: Chawanakee gravelly sandy loam-----	Bedrock (paralithic)	10-20	---	Moderately cemented	None	Moderate	Moderate
Holland loam-----	---	---	---	---	None	Moderate	Moderate
175: Farwell clay loam, rarely flooded----	---	---	---	---	None	Moderate	Low
176: Farwell loam, occasionally flooded----	---	---	---	---	None	Moderate	Low
176yu: Jocal loam-----	---	---	---	---	None	Moderate	Moderate
177: Farwell silt loam, occasionally flooded-----	---	---	---	---	None	Moderate	Low
178: Arbuckle gravelly loam-----	---	---	---	---	None	Low	Low
179: Moda taxadjunct loam-----	Duripan	20-40	---	Indurated	None	High	Low
Arbuckle gravelly loam-----	---	---	---	---	None	Low	Low
180: Dodgeland silty clay loam, occasionally flooded-----	Duripan	80-140	---	Moderately cemented	None	High	Low
181: Dodgeland silty clay loam, frequently flooded-----	Duripan	80-140	---	Moderately cemented	None	High	Low
188yu: Mariposa taxadjunct gravelly loam----	Bedrock (lithic)	15-35	---	Indurated	None	High	High
189: Esquon silt loam, overwash-----	Duripan	40-60	---	Moderately cemented	None	High	Low

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Thickness In	Hardness		Uncoated steel	Concrete
189yu: Mariposa taxadjunct gravelly loam-----	Bedrock (lithic)	15-35	---	Indurated	None	High	High
196yu: Mildred cobbly loam-----	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Moderate	Low
200: Parrott silt loam, occasionally flooded-----	---	---	---	---	None	Low	Low
201: Parrott silt loam, frequently flooded	---	---	---	---	None	Low	Low
203: Kusalslough silty clay loam, occasionally flooded-----	---	---	---	---	None	High	Low
205: Parrott silt loam, frequently flooded	---	---	---	---	None	Low	Low
Vermet silt loam, frequently flooded--	---	---	---	---	None	High	Low
206: Islandbar sandy loam-----	Bedrock (paralithic)	60-130	---	Moderately cemented	None	Moderate	Moderate
Chawanakee gravelly sandy loam-----	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	None	Low	Moderate
207: Islandbar sandy loam-----	Bedrock (paralithic)	60-130	---	Moderately cemented	None	Moderate	Moderate
Chawanakee gravelly sandy loam-----	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	None	Low	Moderate
208: Islandbar sandy loam-----	Bedrock (paralithic)	60-130	---	Moderately cemented	None	Moderate	Moderate
Chawanakee gravelly sandy loam-----	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	None	Low	Moderate

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Thickness In	Hardness		Uncoated steel	Concrete
209:							
Islandbar sandy loam-----	Bedrock (paralithic)	60-130	---	Moderately cemented	None	Moderate	Moderate
Chawanakee gravelly sandy loam-----	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	None	Low	Moderate
210:							
Featherfalls sandy loam-----	Bedrock (paralithic)	60-130	---	Moderately cemented	None	Moderate	Moderate
Islandbar sandy loam-----	Bedrock (paralithic)	60-130	---	Moderately cemented	None	Moderate	Moderate
211:							
Featherfalls sandy loam-----	Bedrock (paralithic)	60-130	---	Moderately cemented	None	Moderate	Moderate
Islandbar sandy loam-----	Bedrock (paralithic)	60-130	---	Moderately cemented	None	Moderate	Moderate
212:							
Featherfalls sandy loam-----	Bedrock (paralithic)	60-130	---	Moderately cemented	None	Moderate	Moderate
Islandbar sandy loam-----	Bedrock (paralithic)	60-130	---	Moderately cemented	None	Moderate	Moderate
213:							
Featherfalls sandy loam-----	Bedrock (paralithic)	60-130	---	Moderately cemented	None	Moderate	Moderate
Islandbar sandy loam-----	Bedrock (paralithic)	60-130	---	Moderately cemented	None	Moderate	Moderate
214:							
Crystalhill gravelly coarse sandy loam	Bedrock (densic)	60-80	---	Noncemented	None	Low	Moderate
Oregongulch gravelly sandy loam-----	Bedrock (densic)	20-40	---	Noncemented	None	Low	Moderate
Craigsaddle coarse sandy loam-----	Bedrock (densic)	40-60	---	Noncemented	None	Low	Moderate
Rock outcrop, trondhemite.							

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Thickness In	Hardness		Uncoated steel	Concrete
215:							
Crystalhill gravelly coarse sandy loam-----	Bedrock (densic)	60-80	---	Noncemented	None	Low	Moderate
Oregongulch gravelly sandy loam-----	Bedrock (densic)	20-40	---	Noncemented	None	Low	Moderate
Craigsaddle coarse sandy loam-----	Bedrock (densic)	40-60	---	Noncemented	None	Low	Moderate
Rock outcrop, trondhjemite.							
216:							
Crystalhill gravelly coarse sandy loam-----	Bedrock (densic)	60-80	---	Noncemented	None	Low	Moderate
Oregongulch gravelly sandy loam-----	Bedrock (densic)	20-40	---	Noncemented	None	Low	Moderate
Craigsaddle coarse sandy loam-----	Bedrock (densic)	40-60	---	Noncemented	None	Low	Moderate
Rock outcrop, trondhjemite.							
217:							
Crystalhill gravelly coarse sandy loam-----	Bedrock (densic)	60-80	---	Noncemented	None	Low	Moderate
Oregongulch gravelly sandy loam-----	Bedrock (densic)	20-40	---	Noncemented	None	Low	Moderate
Craigsaddle coarse sandy loam-----	Bedrock (densic)	40-60	---	Noncemented	None	Low	Moderate
Rock outcrop, trondhjemite.							
218:							
Rock outcrop, quartz diorite.							
Lithic Xerorthents gravelly sandy loam	Bedrock (lithic)	5-10	---	Indurated	None	Moderate	Moderate
Chawanakee gravelly sandy loam-----	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	None	Low	Moderate
219:							
Rock outcrop, quartz diorite.							
Lithic Xerorthents gravelly sandy loam	Bedrock (lithic)	5-10	---	Indurated	None	Moderate	Moderate
Chawanakee gravelly sandy loam-----	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	None	Low	Moderate

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Thickness In	Hardness		Uncoated steel	Concrete
220: Esquon clay, frequently flooded-----	Duripan	40-60	---	Strongly cemented	None	High	Low
Clear Lake silty clay loam, overwash--	---	---	---	---	None	High	Low
221yu: Sites loam-----	Bedrock (paralithic)	60-80	---	Moderately cemented	None	High	High
222yu: Sites loam-----	Bedrock (paralithic)	60-80	---	Moderately cemented	None	High	High
225yu: Sites gravelly loam, bedrock substratum-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	High	High
226yu: Sites gravelly loam, bedrock substratum-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	High	High
227yu: Sites gravelly loam, bedrock substratum-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	High	High
242yu: Surnuf loam-----	Abrupt textural change	---	---	---	None	Moderate	Moderate
243yu: Surnuf loam-----	Abrupt textural change	---	---	---	None	Moderate	Moderate
244yu: Surnuf loam-----	Abrupt textural change	---	---	---	None	Moderate	Moderate
245: Surnuf loam-----	Abrupt textural change	---	---	---	None	Moderate	Moderate

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Thickness In	Hardness		Uncoated steel	Concrete
248yu: Trainer loam-----	---	---	---	---	None	High	Low
250: Llanoseco, occasionally flooded-----	Duripan	60-120	---	Indurated	None	High	Low
252: Whitecabin silty clay, occasionally flooded-----	Duripan	40-60	---	Indurated	None	High	Low
Ordferry silty clay, occasionally flooded-----	Duripan	20-40	---	Indurated	None	High	Low
252yu: Woodleaf gravelly loam-----	Bedrock (lithic)	20-40	---	Indurated	None	Moderate	Moderate
253yu: Woodleaf gravelly loam-----	Bedrock (lithic)	20-40	---	Indurated	None	Moderate	Moderate
255: Whitecabin silty clay loam, occasionally flooded-----	Duripan	40-60	---	Strongly cemented	None	High	Low
Ordferry silty clay, occasionally flooded-----	Duripan	20-40	---	Indurated	None	High	Low
256: Whitecabin silt loam, occasionally flooded-----	Duripan	40-60	---	Moderately cemented	None	High	Low
257: Llanoseco, frequently flooded-----	Duripan	60-120	---	Indurated	None	High	Low
258: Codora, occasionally flooded-----	---	---	---	---	None	High	Low
260: Ordferry silty clay, occasionally flooded-----	Duripan	20-40	---	Indurated	None	High	Low
280: Columbia taxadjunct stratified very fine sandy loam-----	---	---	---	---	None	High	Low

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
290: Perkins gravelly loam-----	---	---	---	---	None	Low	Low
300: Redsluff gravelly loam-----	---	---	---	---	None	Low	Low
301: Wafap gravelly loam-----	Duripan	40-60	---	Indurated	None	High	Low
Hamslough clay-----	Duripan	20-40	---	Strongly cemented	None	High	Low
302: Redtough loam-----	Duripan	10-20	---	Indurated	None	Moderate	Low
Redswale cobbly loam-----	Duripan	4-10	---	Indurated	None	Moderate	Low
303: Munjar gravelly loam-----	Duripan	20-40	---	Strongly cemented	None	Moderate	Low
Tuscan taxadjunct gravelly clay loam--	Duripan	20-40	---	Indurated	None	Moderate	Low
Galt clay-----	Duripan	20-40	4-17	Moderately cemented	None	High	Low
304: Redtough loam-----	Duripan	10-20	---	Indurated	None	Moderate	Low
305: Redtough gravelly loam-----	Duripan	10-20	---	Indurated	None	High	Low
Redswale loam-----	Duripan	4-10	---	Indurated	None	High	Low
Anita, gravelly duripan-----	Duripan	10-20	4-17	Strongly cemented	None	High	Low
306: Duric Xerarents, fill-----	Duripan	14-80	---	Indurated	None	High	Moderate
Duric Xerarents, cut-----	Duripan	4-22	---	Indurated	None	High	Moderate
307: Duric Xerarents clay loam, leveled----	Duripan	10-40	---	Indurated	None	High	Moderate
310: Kimball loam-----	Abrupt textural change	---	---	---	None	Moderate	Low

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Thickness In	Hardness		Uncoated steel	Concrete
317: Thompsonflat loam-----	---	---	---	---	None	Moderate	Moderate
318: Thompsonflat fine sandy loam-----	---	---	---	---	None	Moderate	Moderate
Oroville gravelly fine sandy loam----	Duripan	20-40	---	Indurated	None	High	Moderate
320: Vistarobles sandy loam-----	Duripan	10-20	4-17	Indurated	None	High	Low
Redding loam-----	Duripan	20-40	---	Strongly cemented	None	Moderate	Moderate
321: Durixeralfs, fine-loamy, gravelly fine sandy loam-----	Duripan Bedrock (paralithic)	20-40 32-64	12-24 ---	Indurated Moderately cemented	None	High	Low
Durixeralfs, loamy-skeletal, gravelly fine sandy loam-----	Duripan Bedrock (paralithic)	9-20 21-44	12-24 ---	Indurated Moderately cemented	None	High	Moderate
Typic Petraquepts silty clay-----	Duripan Bedrock (paralithic)	10-20 22-44	12-24 ---	Indurated Moderately cemented	None	High	Moderate
330: Wilsoncreek loam, occasionally flooded-----	---	---	---	---	None	Moderate	Moderate
Trainer loam, occasionally flooded----	---	---	---	---	None	High	Low
331: Thompsonflat loam-----	---	---	---	---	None	Moderate	Moderate
335: Galt clay loam-----	Duripan	20-40	---	Moderately cemented	None	High	Low
336: Galt clay-----	Duripan	20-40	4-17	Moderately cemented	None	High	Low

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
337: Galt clay loam-----	Duripan	20-40	---	Moderately cemented	None	High	Low
338: Oxyaquic Xerofluvents silt loam-----	Abrupt textural change	40-80	---	---	None	High	Low
339: Oxyaquic Xerofluvents sandy loam, frequently flooded-----	Abrupt textural change	40-80	---	---	None	High	Low
340: Rock outcrop, Lovejoy basalt.							
Thermalrocks very gravelly loam-----	Bedrock (lithic)	5-10	---	Indurated	None	High	Moderate
Campbellhills gravelly loam-----	Bedrock (lithic)	40-60	---	Indurated	None	High	Moderate
341: Elsey loam-----	Bedrock (lithic)	20-40	---	Indurated	None	High	Moderate
Beatsonhollow gravelly loam-----	Bedrock (lithic)	10-20	---	Indurated	None	High	Moderate
Campbellhills gravelly loam-----	Bedrock (lithic)	40-60	---	Indurated	None	High	Moderate
Rock outcrop, Lovejoy basalt.							
342: Thermalrocks very gravelly loam-----	Bedrock (lithic)	5-10	---	Indurated	None	High	Moderate
Beatsonhollow taxadjunct fine sandy loam-----	Bedrock (lithic)	10-20	---	Indurated	None	High	Low
Rock outcrop, Lovejoy basalt.							
343: Coalcanyon very cobbly loam-----	---	---	---	---	None	Moderate	Low
Coonhollow gravelly loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Moderate	Low

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
344:		In	In				
Coalcanyon very cobbly loam-----	---	---	---	---	None	Moderate	Low
Coonhollow gravelly loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Moderate	Low
Rock outcrop, Lovejoy basalt.							
346:							
Cherotable loam-----	Bedrock (lithic)	40-60	---	Indurated	None	High	Moderate
Elsey loam-----	Bedrock (lithic)	20-40	---	Indurated	None	---	Moderate
347:							
Haplic Palexeralfs loam-----	Duripan	60-90	---	Extremely weakly cemented	None	Moderate	Moderate
353:							
Cherokeespring gravelly silt loam----	---	---	---	---	None	Moderate	Moderate
355:							
Coalcanyon very cobbly loam-----	---	---	---	---	None	Moderate	Low
Talus.							
356:							
Coalcanyon very cobbly loam-----	---	---	---	---	None	Moderate	Low
Rock outcrop, basalt cliffs.							
Talus.							
Coonhollow gravelly loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Moderate	Low
360:							
Typic Xerofluvents, coarse-loamy-----	---	---	---	---	None	Moderate	Low
Typic Xerofluvents, sandy-skeletal----	---	---	---	---	None	Moderate	Low
361:							
Typic Xerofluvents, sandy-skeletal----	---	---	---	---	None	Moderate	Low

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Thickness In	Hardness		Uncoated steel	Concrete
362: Ultic Haploxerafals, sandstone, low elevation, very deep-----	Bedrock (paralithic)	60-90	---	Moderately cemented	None	Moderate	Moderate
Ultic Haploxerafals, sandstone, low elevation, deep-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Moderate	Moderate
363: Ultic Haploxerafals, sandstone, low elevation, very deep-----	Bedrock (paralithic)	60-90	---	Moderately cemented	None	Moderate	Moderate
Ultic Haploxerafals, sandstone, low elevation, deep-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Moderate	Moderate
364: Ultic Haploxerafals, sandstone, low elevation, deep-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Moderate	Moderate
Ultic Haploxerafals, sandstone, low elevation, very deep-----	Bedrock (paralithic)	60-90	---	Moderately cemented	None	Moderate	Moderate
365: Palexerults gravelly loam-----	Bedrock (densic)	60-90	---	Noncemented	None	High	High
366: Palexerults gravelly loam-----	Bedrock (densic)	60-90	---	Noncemented	None	High	High
370: Palexerults gravelly loam-----	Bedrock (densic)	60-90	---	Noncemented	None	High	High
375: Wicksorner loam-----	Duripan	60-87	---	Extremely weakly cemented	None	Moderate	Low
376: Flagcanyon gravelly loam-----	Duripan	20-40	---	Moderately cemented	None	Moderate	Low

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Thickness In	Hardness		Uncoated steel	Concrete
376: Wicks corner loam-----	Duripan	60-84	---	Extremely weakly cemented	None	Moderate	Low
377: Flagcanyon taxadjunct fine sandy loam	Duripan	20-40	---	Extremely weakly cemented	None	High	Moderate
		40-60	---	Indurated			
Durixeralfs, clayey-skeletal, loam----	Duripan	10-20	---	Extremely weakly cemented	None	High	Moderate
Duraquerts gravelly clay-----	Duripan	20-40	---	Extremely weakly cemented	None	High	Moderate
400: Subaco taxadjunct clay-----	Duripan	20-40	---	Indurated	None	High	Low
	Dense material	40-60	---	Noncemented			
415: Ignord fine sandy loam-----	---	---	---	---	None	Low	Low
416: Calcic Haploxerolls sandy loam-----	Dense material	40-60	---	Noncemented	None	Low	Low
418: Almendra loam-----	---	---	---	---	None	Low	Low
419: Conejo fine sandy loam, overwash-----	---	---	---	---	None	Moderate	Low
420: Conejo clay loam-----	---	---	---	---	None	Moderate	Low
425: Vina fine sandy loam-----	---	---	---	---	None	Low	Low
426: Vina loam-----	---	---	---	---	None	Low	Low
439: Oxyaquic Xerofluvents clay-----	Abrupt textural change	24-80	---	---	None	High	Low

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
440: Oxyaquic Xerofluvents silt loam, frequently flooded-----	Abrupt textural change	24-80	---	---	None	High	Low
441: Oxyaquic Xerofluvents very fine sandy loam-----	Abrupt textural change	24-80	---	---	None	High	Low
442: Durixerolls clay loam-----	Duripan	20-40	---	Indurated	None	Moderate	Low
Haploxerolls clay loam-----	Duripan	40-60	---	Indurated	None	Moderate	Low
443: Durixerolls loam-----	Duripan	20-40	---	Moderately cemented	None	Moderate	Low
Haploxerolls loam-----	Duripan	40-60	---	Indurated	None	Moderate	Low
445: Chico loam-----	---	---	---	---	None	Moderate	Low
447: Charger fine sandy loam-----	---	---	---	---	None	Low	Low
448: Haploxerolls clay loam-----	Dense material	60-80	---	Noncemented	None	Moderate	Low
449: Haploxerolls loam-----	Dense material	60-80	---	Noncemented	None	Low	Low
500: Lofgren clay-----	Duripan	40-60	4-17	Indurated	None	High	Low
Blavo clay-----	Duripan	20-40	4-17	Indurated	None	High	Low
501: Lofgren clay, occasionally flooded----	Duripan	40-60	4-17	Indurated	None	High	Low
Blavo clay, occasionally flooded-----	Duripan	20-40	---	Indurated	None	High	Low

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Thickness In	Hardness		Uncoated steel	Concrete
502: Blavo silt loam, overwash, occasionally flooded-----	Duripan	20-40	4-17	Indurated	None	High	Low
519: Edjobe silty clay-----	Duripan	60-80	---	Moderately cemented	None	High	Low
520: Esquon clay-----	Duripan	40-60	---	Moderately cemented	None	High	Low
Neerdobe clay-----	Duripan	20-40	---	Indurated	None	High	Low
521: Neerdobe silt loam, overwash-----	Duripan	20-60	---	Strongly cemented	None	High	Low
522: Clear Lake silty clay loam, overwash--	---	---	---	---	None	High	Low
523: Esquon silty clay loam, overwash-----	Duripan	40-60	---	Strongly cemented	None	High	Low
525: Govstanford loam-----	Abrupt textural change	20-36	---	---	None	High	Low
526: Govstanford loam, occasionally flooded-----	Abrupt textural change	20-36	---	---	None	High	Low
528: Neerdobe clay loam-----	Duripan	20-40	---	Strongly cemented	None	High	Low
550: Dunstone loam, dry-----	Bedrock (paralithic)	10-20	---	Moderately cemented	None	Low	Low
Loafercreek silt loam, dry-----	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Low	Moderate
551: Dunstone loam, dry-----	Bedrock (paralithic)	10-20	---	Moderately cemented	None	Low	Low

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
551:		In	In				
Lomarica loam-----	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Low	Low
Argonaut taxadjunct loam-----	Bedrock (paralithic)	20-40	---	Moderately cemented	None	High	Low
552:							
Dunstone gravelly loam-----	Bedrock (paralithic)	10-20	---	Moderately cemented	None	Low	Low
	Bedrock (lithic)	20-40	---	Indurated			
Loafercreek gravelly loam-----	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Low	Low
	Bedrock (lithic)	40-60	---	Indurated			
553:							
Dunstone gravelly loam-----	Bedrock (paralithic)	10-20	---	Moderately cemented	None	Low	Low
	Bedrock (lithic)	20-40	---	Indurated			
Loafercreek gravelly loam-----	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Low	Low
	Bedrock (lithic)	40-60	---	Indurated			
554:							
Dunstone gravelly loam-----	Bedrock (paralithic)	10-20	---	Moderately cemented	None	Low	Low
	Bedrock (lithic)	20-40	---	Indurated			
Loafercreek gravelly loam-----	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Low	Low
	Bedrock (lithic)	40-60	---	Indurated			
555:							
Dunstone gravelly loam-----	Bedrock (paralithic)	10-20	---	Moderately cemented	None	Low	Low
	Bedrock (lithic)	20-40	---	Indurated			
Loafercreek gravelly loam-----	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Low	Low
	Bedrock (lithic)	40-60	---	Indurated			

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Thickness In	Hardness		Uncoated steel	Concrete
556: Mounthope loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low	Moderate
Hartsmill gravelly loam-----	Bedrock (paralithic)	60-80	---	Moderately cemented	None	Low	Moderate
557: Mounthope loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low	Moderate
Hartsmill gravelly loam-----	Bedrock (paralithic)	60-80	---	Moderately cemented	None	Low	Moderate
558: Hartsmill gravelly loam-----	Bedrock (paralithic)	60-80	---	Moderately cemented	None	Low	Moderate
Mounthope loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low	Moderate
559: Hartsmill gravelly loam-----	Bedrock (paralithic)	60-80	---	Moderately cemented	None	Low	Moderate
Mounthope loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low	Moderate
560: Hartsmill gravelly loam-----	Bedrock (paralithic)	60-80	---	Moderately cemented	None	Low	Moderate
Mounthope loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low	Moderate
561: Bigridge loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low	Moderate
Minniecreek loam-----	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Low	Moderate
562: Bigridge loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low	Moderate

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Thickness In	Hardness		Uncoated steel	Concrete
562: Minniecreek loam-----	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Low	Moderate
563: Bigridge loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low	Moderate
Minniecreek loam-----	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Low	Moderate
564: Bigridge loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low	Moderate
Minniecreek loam-----	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Low	Moderate
565: Dunstone loam, dry-----	Bedrock (paralithic)	10-20	---	Moderately cemented	None	Low	Low
Argonaut taxadjunct loam-----	Bedrock (paralithic)	20-40	---	Moderately cemented	None	High	Low
Sunnyslope loam-----	Bedrock (paralithic)	10-20	---	Moderately cemented	None	Moderate	Moderate
566: Dunstone loam, dry-----	Bedrock (paralithic)	10-20	---	Moderately cemented	None	Low	Low
Loafercreek silt loam, dry-----	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Low	Moderate
Katskillhill loam-----	Bedrock (lithic)	40-60	---	Very strongly cemented	None	High	Moderate
567: Dunstone loam, dry-----	Bedrock (paralithic)	10-20	---	Moderately cemented	None	Low	Low
Loafercreek silt loam, dry-----	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Low	Moderate

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Thickness In	Hardness		Uncoated steel	Concrete
567: Argonaut taxadjunct loam-----	Bedrock (paralithic)	20-40	---	Moderately cemented	None	High	Low
577: Parkshill coarse sandy loam-----	---	---	---	---	None	Low	Low
Flanly loam-----	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Low	Low
Hurleton gravelly sandy loam-----	Bedrock (lithic)	20-40	---	Indurated	None	Low	Moderate
578: Flanly loam-----	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Low	Low
Swedesflat cobbly fine sandy loam----	Bedrock (paralithic)	10-20	---	Weakly cemented	None	Low	Moderate
580: Surnuf taxadjunct loam-----	---	---	---	---	None	Moderate	Moderate
Griffgulch very gravelly silt loam----	Bedrock (lithic)	40-60	---	Very strongly cemented	None	High	Moderate
Rock outcrop, metavolcanic.							
581: Surnuf taxadjunct loam-----	---	---	---	---	None	Moderate	Moderate
Griffgulch very gravelly silt loam----	Bedrock (lithic)	40-60	---	Very strongly cemented	None	High	Moderate
582: Surnuf taxadjunct loam-----	---	---	---	---	None	Moderate	Moderate
Griffgulch very gravelly silt loam----	Bedrock (lithic)	40-60	---	Very strongly cemented	None	High	Moderate
583: Surnuf taxadjunct loam-----	---	---	---	---	None	Moderate	Moderate
Griffgulch very gravelly silt loam----	Bedrock (lithic)	40-60	---	Very strongly cemented	None	High	Moderate

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Thickness In	Hardness		Uncoated steel	Concrete
584: Flanly loam-----	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Low	Low
Swedesflat cobbly fine sandy loam----	Bedrock (paralithic)	10-20	---	Weakly cemented	None	Low	Moderate
Rackerby very gravelly sandy loam----	Bedrock (paralithic)	10-20	---	Weakly cemented	None	Low	Low
585: Flanly loam-----	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Low	Low
Sommeyflat loam-----	Bedrock (paralithic)	60-80	---	Moderately cemented	None	Low	Low
586: Sommeyflat loam-----	Bedrock (paralithic)	60-80	---	Moderately cemented	None	Low	Low
Mounthope loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low	Moderate
587: Sommeyflat loam-----	Bedrock (paralithic)	60-80	---	Moderately cemented	None	Low	Low
Mounthope loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low	Moderate
Hurleton gravelly sandy loam-----	Bedrock (lithic)	20-40	---	Indurated	None	Low	Moderate
588: Ultic Haploxeralfs, thermic, high terrace-----	Cemented horizon	20-60	---	Extremely weakly cemented	None	Moderate	Moderate
589: Ultic Haploxeralfs, thermic, high terrace-----	Cemented horizon	20-60	---	Extremely weakly cemented	None	Moderate	Moderate
590: Vistarobles sandy loam-----	Duripan	10-20	---	Indurated	None	High	Low
Redding loam-----	Duripan	20-40	---	Strongly cemented	None	Moderate	Moderate

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Thickness In	Hardness		Uncoated steel	Concrete
590: Argonaut taxadjunct loam-----	Bedrock (paralithic)	20-40	---	Moderately cemented	None	High	Low
Haploxererts gravelly silty clay-----	Bedrock (paralithic)	40-60	---	Weakly cemented	None	High	Low
603: Oroville gravelly fine sandy loam-----	Duripan	20-40	---	Indurated	None	High	Moderate
Thermalito sandy loam-----	Duripan	20-40	---	Indurated	None	High	Moderate
Fernandez sandy loam-----	Duripan	60-81	---	Weakly cemented	None	High	Moderate
Thompsonflat fine sandy loam-----	---	---	---	---	None	Moderate	Moderate
605: Duric Xerarents fine sandy loam, leveled-----	Duripan	10-40	0-3	Indurated	None	High	Low
Oroville gravelly fine sandy loam-----	Duripan	20-40	---	Indurated	None	High	Moderate
606: Redtough loam-----	Duripan	10-20	---	Indurated	None	Moderate	Low
Fallager loam-----	Duripan	4-10	---	Indurated	None	Moderate	Low
Anita, gravelly duripan-----	Duripan	10-20	4-17	Indurated	None	High	Low
609: Anita, gravelly duripan-----	Duripan	10-20	4-17	Strongly cemented	None	High	Low
Tuscan taxadjunct gravelly clay loam--	Duripan	20-40	---	Indurated	None	Moderate	Low
614: Doemill gravelly loam-----	Bedrock (lithic)	10-20	---	Indurated	None	Moderate	Low
Jokerst very cobbly loam-----	Bedrock (lithic)	2-10	---	Indurated	None	Moderate	Low
615: Doemill gravelly loam-----	Bedrock (lithic)	10-20	---	Indurated	None	Moderate	Low
Jokerst very cobbly loam-----	Bedrock (lithic)	2-10	---	Indurated	None	Moderate	Low

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
616:		In	In				
Jokerst very cobbly loam-----	Bedrock (lithic)	2-10	---	Indurated	None	Moderate	Low
Doemill gravelly loam-----	Bedrock (lithic)	10-20	---	Indurated	None	Moderate	Low
Typic Haploxeralfs gravelly loam-----	Bedrock (paralithic)	20-60	---	Weakly cemented	None	Moderate	Low
	Bedrock (lithic)	20-60	---	Strongly cemented			
617:							
Doemill gravelly loam-----	Bedrock (lithic)	10-20	---	Indurated	None	Moderate	Low
Jokerst very cobbly loam-----	Bedrock (lithic)	2-10	---	Indurated	None	Moderate	Low
Typic Haploxeralfs gravelly loam-----	Bedrock (paralithic)	20-60	---	Weakly cemented	None	Moderate	Low
	Bedrock (lithic)	20-60	---	Strongly cemented			
619:							
Carhart taxadjunct clay-----	Bedrock (lithic)	10-20	---	Indurated	None	High	Low
620:							
Doemill gravelly loam-----	Bedrock (lithic)	10-20	---	Indurated	None	Moderate	Low
Jokerst very cobbly loam-----	Bedrock (lithic)	2-10	---	Indurated	None	Moderate	Low
Ultic Haploxeralfs, thermic, gravelly loam-----	Bedrock (lithic)	20-40	---	Strongly cemented	None	High	Low
	Bedrock (paralithic)	20-40	---	Moderately cemented			
621:							
Doemill gravelly loam-----	Bedrock (lithic)	10-20	---	Indurated	None	Moderate	Low
Jokerst very cobbly loam-----	Bedrock (lithic)	2-10	---	Indurated	None	Moderate	Low
Ultic Haploxeralfs, thermic, gravelly loam-----	Bedrock (lithic)	20-40	---	Strongly cemented	None	High	Low
	Bedrock (paralithic)	20-40	---	Moderately cemented			
622:							
Xerorthents, shallow-----	Bedrock (lithic)	2-20	---	Strongly cemented	None	Moderate	Low
	Bedrock (paralithic)	2-20	---	Moderately cemented			

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
622: Typic Haploxeralfs gravelly loam-----	Bedrock (paralithic)	20-60	---	Weakly cemented	None	Moderate	Low
	Bedrock (lithic)	20-60	---	Strongly cemented			
Rock outcrop, mudflow-breccia cliffs.							
623: Xerorthents, shallow-----	Bedrock (lithic)	2-20	---	Strongly cemented	None	Moderate	Low
	Bedrock (paralithic)	2-20	---	Moderately cemented			
Typic Haploxeralfs gravelly loam-----	Bedrock (paralithic)	20-60	---	Weakly cemented	None	Moderate	Low
	Bedrock (lithic)	20-60	---	Strongly cemented			
Rock outcrop, mudflow-breccia cliffs.							
624: Ultic Haploxeralfs, mesic, gravelly loam-----	Bedrock (paralithic)	20-60	---	Moderately cemented	None	Moderate	Low
	Bedrock (lithic)	20-60	---	Strongly cemented			
Rockstripe very gravelly loam-----	Bedrock (lithic)	2-10	---	Indurated	None	High	Low
625: Ultic Haploxeralfs, mesic, gravelly loam-----	Bedrock (paralithic)	20-60	---	Moderately cemented	None	Moderate	Low
	Bedrock (lithic)	20-60	---	Strongly cemented			
Rockstripe very gravelly loam-----	Bedrock (lithic)	2-10	---	Indurated	None	High	Low
626: Ultic Haploxeralfs gravelly loam-----	Bedrock (paralithic)	20-60	---	Extremely weakly cemented	None	Moderate	Low
	Bedrock (lithic)	20-60	---	Strongly cemented			
Rockstripe very gravelly loam-----	Bedrock (lithic)	2-10	---	Indurated	None	High	Low
Rock outcrop, mudflow-breccia cliffs.							

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
627:		In	In				
Ultic Haploxeralfs gravelly loam-----	Bedrock (paralithic)	20-60	---	Extremely weakly cemented	None	Moderate	Low
	Bedrock (lithic)	20-60	---	Strongly cemented			
Rockstripe very gravelly loam-----	Bedrock (lithic)	2-10	---	Indurated	None	High	Low
Rock outcrop, mudflow-breccia cliffs.							
628:							
Rockstripe very gravelly loam-----	Bedrock (lithic)	2-10	---	Indurated	None	High	Low
Ultic Haploxeralfs gravelly loam-----	Bedrock (paralithic)	20-60	---	Extremely weakly cemented	None	Moderate	Low
	Bedrock (lithic)	20-60	---	Strongly cemented			
Rock outcrop, mudflow-breccia cliffs.							
629:							
Slideland gravelly loam-----	---	---	---	---	None	Low	Low
630:							
Slideland gravelly loam-----	---	---	---	---	None	Low	Low
631:							
Slideland gravelly loam-----	---	---	---	---	None	Low	Low
632:							
Ultic Haploxeralfs, conglomerate, very deep-----	---	---	---	---	None	Moderate	Low
Ultic Haploxeralfs, conglomerate, moderately deep-----	Bedrock (paralithic)	20-40	---	Very weakly cemented	None	Low	Low
633:							
Ultic Haploxeralfs, conglomerate, very deep-----	---	---	---	---	None	Moderate	Low
Ultic Haploxeralfs, conglomerate, moderately deep-----	Bedrock (paralithic)	20-40	---	Very weakly cemented	None	Low	Low

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
634: Ultic Haploxeralfs, conglomerate, very deep-----	---	---	---	---	None	Moderate	Low
Ultic Haploxeralfs, conglomerate, moderately deep-----	Bedrock (paralithic)	20-40	---	Very weakly cemented	None	Low	Low
635: Ultic Haploxeralfs, conglomerate, very deep-----	Bedrock (paralithic)	60-90	---	Very weakly cemented	None	Moderate	Low
Ultic Haploxeralfs, conglomerate, moderately deep-----	Bedrock (paralithic)	20-40	---	Very weakly cemented	None	Low	Low
636: Ultic Haploxeralfs, conglomerate, moderately deep-----	Bedrock (paralithic)	20-40	---	Very weakly cemented	None	Low	Low
Ultic Haploxeralfs, conglomerate, very deep-----	Bedrock (paralithic)	60-90	---	Very weakly cemented	None	Moderate	Low
637: Ultic Haploxeralfs, sandstone-----	Bedrock (paralithic)	40-80	---	Weakly cemented	None	Low	Low
638: Ultic Haploxeralfs, sandstone-----	Bedrock (paralithic)	40-80	---	Weakly cemented	None	Low	Low
639: Ultic Haploxeralfs, sandstone-----	Bedrock (paralithic)	40-80	---	Weakly cemented	None	Low	Low
640: Ultic Haploxeralfs, sandstone-----	Bedrock (paralithic)	40-80	---	Weakly cemented	None	Low	Low
641: Ultic Haploxeralfs, sandstone-----	Bedrock (paralithic)	40-80	---	Weakly cemented	None	Low	Low

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
642: Chinacamp gravelly loam-----	---	---	---	---	None	Low	Low
643: Chinacamp gravelly loam-----	---	---	---	---	None	Low	Low
644: Chinacamp gravelly loam-----	---	---	---	---	None	Low	Low
645: Chinacamp gravelly loam-----	---	---	---	---	None	Low	Low
646: Coalcanyon taxadjunct very gravelly loam-----	---	---	---	---	None	Low	Low
647: Coalcanyon taxadjunct very gravelly loam-----	---	---	---	---	None	Low	Low
648: Coalcanyon taxadjunct very gravelly loam-----	---	---	---	---	None	Low	Low
649: Coalcanyon taxadjunct very gravelly loam-----	---	---	---	---	None	Low	Low
650: Schott very gravelly loam-----	Bedrock (lithic)	40-60	---	Strongly cemented	None	High	Low
651: Schott very gravelly loam-----	Bedrock (lithic)	40-60	---	Strongly cemented	None	High	Low
652: Schott very gravelly loam-----	Bedrock (lithic)	40-60	---	Strongly cemented	None	High	Low
Rock outcrop, mudflow breccia.							
654: Coridge bouldery loam-----	Bedrock (lithic)	20-40	---	Indurated	None	Moderate	Low
Rock outcrop, Cohasset basalt.							

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Thickness In	Hardness		Uncoated steel	Concrete
655: Coridge bouldery loam----- Rock outcrop, Cohasset basalt.	Bedrock (lithic)	20-40	---	Indurated	None	Moderate	Low
656: Rock outcrop, basalt cliffs. Coalcanyon taxadjunct very gravelly loam-----	---	---	---	---	None	Low	Low
657: Bonneyridge sandy loam----- Chawanakee gravelly sandy loam----- Rock outcrop, quartz diorite.	Bedrock (paralithic)	60-130	---	Weakly cemented	None	Moderate	Moderate
	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	None	Low	Moderate
658: Bonneyridge sandy loam----- Chawanakee gravelly sandy loam----- Rock outcrop, quartz diorite.	Bedrock (paralithic)	60-130	---	Weakly cemented	None	Moderate	Moderate
	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	None	Low	Moderate
659: Bonneyridge sandy loam----- Chawanakee gravelly sandy loam----- Rock outcrop, quartz diorite.	Bedrock (paralithic)	60-130	---	Weakly cemented	None	Moderate	Moderate
	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	None	Low	Moderate
660: Bonneyridge sandy loam----- Chawanakee gravelly sandy loam----- Rock outcrop, quartz diorite.	Bedrock (paralithic)	60-130	---	Weakly cemented	None	Moderate	Moderate
	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	None	Low	Moderate

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
661: Millerridge gravelly sandy clay loam--	Bedrock (paralithic)	20-40	---	Weakly cemented	None	Low	Low
Boxrobber cobbly sandy clay loam-----	Bedrock (paralithic)	10-20	---	Weakly cemented	None	Low	Low
	Bedrock (lithic)	20-79	---	Very strongly cemented			
662: Millerridge gravelly sandy clay loam--	Bedrock (paralithic)	20-40	---	Weakly cemented	None	Low	Low
Boxrobber cobbly sandy clay loam-----	Bedrock (paralithic)	10-20	---	Weakly cemented	None	Low	Low
	Bedrock (lithic)	20-79	---	Very strongly cemented			
663: Millerridge gravelly sandy clay loam--	Bedrock (paralithic)	20-40	---	Weakly cemented	None	Low	Low
Boxrobber cobbly sandy clay loam-----	Bedrock (paralithic)	10-20	---	Weakly cemented	None	Low	Low
	Bedrock (lithic)	20-79	---	Very strongly cemented			
664: Millerridge gravelly sandy clay loam--	Bedrock (paralithic)	20-40	---	Weakly cemented	None	Low	Low
Boxrobber cobbly sandy clay loam-----	Bedrock (paralithic)	10-20	---	Weakly cemented	None	Low	Low
	Bedrock (lithic)	20-79	---	Very strongly cemented			
665: Surnuf gravelly loam-----	---	---	---	---	None	High	Moderate
Bigridge loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low	Moderate
666: Surnuf gravelly loam-----	---	---	---	---	None	High	Moderate

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Thickness In	Hardness		Uncoated steel	Concrete
666: Bigridge loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low	Moderate
667: Surnuf gravelly loam-----	---	---	---	---	None	High	Moderate
Bigridge loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low	Moderate
668: Surnuf gravelly loam-----	---	---	---	---	None	High	Moderate
Bigridge loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low	Moderate
669: Oroshore gravelly loam-----	Bedrock (paralithic)	20-40	---	Weakly cemented	None	Low	Low
Mounthope loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low	Moderate
Dunstone gravelly loam-----	Bedrock (paralithic)	10-20	---	Moderately cemented	None	Low	Low
	Bedrock (lithic)	20-40	---	Indurated			
670: Oroshore gravelly loam-----	Bedrock (paralithic)	20-40	---	Weakly cemented	None	Low	Low
Mounthope loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low	Moderate
Dunstone gravelly loam-----	Bedrock (paralithic)	10-20	---	Moderately cemented	None	Low	Low
	Bedrock (lithic)	20-40	---	Indurated			
671: Oroshore gravelly loam-----	Bedrock (paralithic)	20-40	---	Weakly cemented	None	Low	Low
Mounthope loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low	Moderate

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
671: Dunstone gravelly loam-----	Bedrock (paralithic)	10-20	---	Moderately cemented	None	Low	Low
	Bedrock (lithic)	20-40	---	Indurated			
672: Oroshore gravelly loam-----	Bedrock (paralithic)	20-40	---	Weakly cemented	None	Low	Low
Mounthope loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low	Moderate
Dunstone gravelly loam-----	Bedrock (paralithic)	10-20	---	Moderately cemented	None	Low	Low
	Bedrock (lithic)	20-40	---	Indurated			
674: Chawanakee gravelly sandy loam-----	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	None	Low	Moderate
Bonneyridge sandy loam-----	Bedrock (paralithic)	60-130	---	Weakly cemented	None	Moderate	Moderate
Rock outcrop, quartz diorite.							
675: Clearhayes sandy clay loam-----	Bedrock (paralithic)	40-60	---	Very weakly cemented	None	Low	Low
Hamslough clay-----	Duripan	20-40	24-48	Strongly cemented	None	High	Low
	Bedrock (paralithic)	44-88	---	Moderately cemented			
676: Carhart clay-----	Bedrock (paralithic)	20-40	---	Moderately cemented	None	High	Low
Anita taxadjunct clay-----	Bedrock (paralithic)	10-20	---	Moderately cemented	None	High	Low
677: Tuscan gravelly loam-----	Duripan	10-20	1-36	Very strongly cemented	None	High	Low
	Bedrock (paralithic)	11-56	---	Moderately cemented			

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Thickness In	Hardness		Uncoated steel	Concrete
677: Fallager loam-----	Duripan	4-10	1-36	Very strongly cemented	None	Moderate	Low
	Bedrock (paralithic)	5-46	---	Moderately cemented			
Anita, gravelly duripan-----	Duripan	10-20	1-36	Strongly cemented	None	High	Low
	Bedrock (paralithic)	11-56	---	Moderately cemented			
679: Lucksev loam-----	Bedrock (paralithic)	4-20	---	Moderately cemented	None	Moderate	Low
Butteside gravelly loam-----	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Moderate	Low
Carhart clay-----	Bedrock (paralithic)	20-40	---	Moderately cemented	None	High	Low
680: Lucksev loam-----	Bedrock (paralithic)	4-20	---	Moderately cemented	None	Moderate	Low
Butteside gravelly loam-----	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Moderate	Low
683: Typic Haploxeralfs, magnesian, low elevation-----	Bedrock (lithic)	20-40	---	Indurated	None	Moderate	Low
Earlal very gravelly loam-----	Bedrock (lithic)	10-20	---	Indurated	None	Low	Low
Rock outcrop, serpentinite.							
684: Typic Haploxeralfs, magnesian, low elevation-----	Bedrock (lithic)	20-40	---	Indurated	None	Moderate	Low
Earlal very gravelly loam-----	Bedrock (lithic)	10-20	---	Indurated	None	Low	Low
Rock outcrop, serpentinite.							

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
685: Bosquejo taxadjunct, gravelly substratum-----	Dense material	40-80	40-140	Very weakly cemented	None	High	Low
	Bedrock (paralithic)	80-180	---	Moderately cemented			
686: Redsluff taxadjunct clay loam-----	Bedrock (paralithic)	60-85	---	Extremely weakly cemented	None	High	Low
687: Xerorthents, shallow-----	Bedrock (lithic)	2-20	---	Strongly cemented	None	Moderate	Low
	Bedrock (paralithic)	2-20	---	Moderately cemented			
Typic Haploxeralfs gravelly loam-----	Bedrock (paralithic)	20-60	---	Weakly cemented	None	Moderate	Low
	Bedrock (lithic)	20-60	---	Strongly cemented			
700: Retsongulch very gravelly sandy loam--	Bedrock (lithic)	20-40	---	Strongly cemented	None	Moderate	High
Flumewall gravelly sandy loam-----	Bedrock (lithic)	10-20	---	Indurated	None	Moderate	Moderate
701: Powellton gravelly loam-----	---	---	---	---	None	Moderate	Moderate
Obstruction gravelly sandy loam-----	Bedrock (paralithic)	60-96	---	Moderately cemented	None	Low	Moderate
702: Cerpone gravelly loam-----	Bedrock (lithic)	40-60	---	Very strongly cemented	None	Moderate	Low
Typic Haploxeralfs, magnesian, very gravelly loam-----	Bedrock (lithic)	20-80	---	Indurated	None	---	Low
Earlal very gravelly loam-----	Bedrock (lithic)	10-20	---	Indurated	None	Low	Low
703: Cerpone gravelly loam-----	Bedrock (lithic)	40-60	---	Very strongly cemented	None	Moderate	Low
Typic Haploxeralfs, magnesian, very gravelly loam-----	Bedrock (lithic)	20-80	---	Indurated	None	Moderate	Low

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Thickness In	Hardness		Uncoated steel	Concrete
703: Earlal very gravelly loam----- Rock outcrop, serpentinite.	Bedrock (lithic)	10-20	---	Indurated	None	Low	Low
704: Typic Haploxeralfs, magnesian, very gravelly loam----- Earlal very gravelly loam----- Cerpone gravelly loam----- Rock outcrop, serpentinite.	Bedrock (lithic)	20-80	---	Indurated	None	Moderate	Low
	Bedrock (lithic)	10-20	---	Indurated	None	Low	Low
	Bedrock (lithic)	40-60	---	Very strongly cemented	None	Moderate	Low
705: Typic Haploxeralfs, magnesian, very gravelly loam----- Earlal very gravelly loam----- Cerpone gravelly loam----- Rock outcrop, serpentinite.	Bedrock (lithic)	20-80	---	Indurated	None	Moderate	Low
	Bedrock (lithic)	10-20	---	Indurated	None	Low	Low
	Bedrock (lithic)	40-60	---	Very strongly cemented	None	Moderate	Low
711: Dixmine very gravelly loam----- Toadtown loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	High	Moderate
	Bedrock (paralithic)	60-120	---	Extremely weakly cemented	None	Moderate	Moderate
712: Dixmine very gravelly loam----- Toadtown loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	High	Moderate
	Bedrock (paralithic)	60-120	---	Extremely weakly cemented	None	Moderate	Moderate
713: Dixmine very gravelly loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	High	Moderate

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
713: Toadtown loam-----	Bedrock (paralithic)	60-120	---	Extremely weakly cemented	None	Moderate	Moderate
714: Dixmine very gravelly loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	High	Moderate
Toadtown loam-----	Bedrock (paralithic)	60-120	---	Extremely weakly cemented	None	Moderate	Moderate
715: Logtrain gravelly loam-----	Bedrock (lithic)	40-60	---	Strongly cemented	None	High	Moderate
Bottlehill very gravelly loam-----	Bedrock (lithic)	20-40	---	Very strongly cemented	None	High	Moderate
Walkermine very gravelly loam-----	Bedrock (lithic)	4-20	---	Indurated	None	High	Low
716: Griffgulch very gravelly silt loam----	Bedrock (lithic)	40-60	---	Very strongly cemented	None	High	Moderate
Surnuf gravelly loam-----	---	---	---	---	None	High	Moderate
717: Griffgulch very gravelly silt loam----	Bedrock (lithic)	40-60	---	Very strongly cemented	None	High	Moderate
Surnuf gravelly loam-----	---	---	---	---	None	High	Moderate
718: Griffgulch very gravelly silt loam----	Bedrock (lithic)	40-60	---	Very strongly cemented	None	High	Moderate
Surnuf gravelly loam-----	---	---	---	---	None	High	Moderate
Spine taxadjunct very cobbly loam-----	Bedrock (lithic)	10-20	---	Indurated	None	Moderate	Low
719: Griffgulch very gravelly silt loam----	Bedrock (lithic)	40-60	---	Very strongly cemented	None	High	Moderate
Surnuf gravelly loam-----	---	---	---	---	None	High	Moderate
Spine taxadjunct very cobbly loam-----	Bedrock (lithic)	10-20	---	Indurated	None	Moderate	Low

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Thickness In	Hardness		Uncoated steel	Concrete
720: Dystrocherepts extremely gravelly loam	Bedrock (lithic)	20-60	---	Indurated	None	Moderate	Moderate
Haploxeralfs very gravelly loam----- Rock outcrop, metavolcanic.	Bedrock (lithic)	20-60	---	Indurated	None	Moderate	Moderate
721: Haploxerands, granitic till, medial sandy loam-----	Dense material	20-98	---	Noncemented	Low	Low	Moderate
722: Haploxerands, granitic till, medial sandy loam-----	Dense material	20-98	---	Noncemented	Low	Low	Moderate
723: Haploxerands, granitic till, medial sandy loam-----	Dense material	20-98	---	Noncemented	Low	Low	Moderate
724: Haploxerands, volcanic till, cobbly medial sandy loam-----	Dense material	20-98	---	Noncemented	Low	High	Moderate
725: Haploxerands, volcanic till, cobbly medial sandy loam-----	Dense material	20-98	---	Noncemented	Low	High	Moderate
726: Haploxerands, volcanic till, cobbly medial sandy loam-----	Dense material	20-98	---	Noncemented	Low	High	Moderate
727: Bonneyridge sandy loam-----	Bedrock (paralithic)	60-130	---	Weakly cemented	None	Moderate	Moderate
728: Bonneyridge sandy loam-----	Bedrock (paralithic)	60-130	---	Weakly cemented	None	Moderate	Moderate
729: Bonneyridge sandy loam-----	Bedrock (paralithic)	60-130	---	Weakly cemented	None	Moderate	Moderate

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Thickness In	Hardness		Uncoated steel	Concrete
730: Tussock gravelly loam-----	Bedrock (paralithic)	60-120	---	Moderately cemented	None	Moderate	Moderate
Schott very gravelly loam-----	Bedrock (lithic)	40-60	---	Strongly cemented	None	High	Low
731: Tussock gravelly loam-----	Bedrock (paralithic)	60-120	---	Moderately cemented	None	Moderate	Moderate
Schott very gravelly loam-----	Bedrock (paralithic)	40-60	---	Strongly cemented	None	High	Low
732: Bonepile taxadjunct, duripan substratum-----	Duripan	40-60	---	Moderately cemented	None	Moderate	Moderate
733: Haploxeralfs, terrace, gravelly loam--	---	---	---	---	None	Low	Low
734: Haploxerands medial sandy loam-----	Bedrock (paralithic)	20-118	---	Weakly cemented	High	Moderate	Moderate
Aquic Xerofluvents peaty very fine sandy loam-----	---	---	---	---	High	High	Moderate
735: Fluvaquents, loamy-----	---	---	---	---	None	High	Low
801: Obstruction gravelly sandy loam-----	Bedrock (paralithic)	60-96	---	Moderately cemented	None	Low	Moderate
802: Obskel very gravelly sandy loam-----	Bedrock (paralithic)	40-60	---	Very weakly cemented	None	Low	Moderate
Obstruction gravelly sandy loam-----	Bedrock (paralithic)	60-96	---	Moderately cemented	None	Low	Moderate
803: Obskel very gravelly sandy loam-----	Bedrock (paralithic)	40-60	---	Very weakly cemented	None	Low	Moderate

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Thickness In	Hardness		Uncoated steel	Concrete
803: Obstruction gravelly sandy loam-----	Bedrock (paralithic)	60-96	---	Moderately cemented	None	Low	Moderate
804: Obskel very gravelly sandy loam-----	Bedrock (paralithic)	40-60	---	Very weakly cemented	None	Low	Moderate
Obstruction gravelly sandy loam-----	Bedrock (paralithic)	60-96	---	Moderately cemented	None	Low	Moderate
Retsongulch very gravelly sandy loam--	Bedrock (lithic)	20-40	---	Strongly cemented	None	Moderate	High
805: Bottlehill very gravelly loam-----	Bedrock (lithic)	20-40	---	Very strongly cemented	None	High	Moderate
Walkermine very gravelly loam-----	Bedrock (lithic)	4-20	---	Indurated	None	High	Low
Logtrain gravelly loam-----	Bedrock (lithic)	40-60	---	Strongly cemented	None	High	Moderate
806: Bottlehill very gravelly loam-----	Bedrock (lithic)	20-40	---	Very strongly cemented	None	High	Moderate
Walkermine very gravelly loam-----	Bedrock (lithic)	4-20	---	Indurated	None	High	Low
Logtrain gravelly loam-----	Bedrock (lithic)	40-60	---	Strongly cemented	None	High	Moderate
807: Bottlehill very gravelly loam-----	Bedrock (lithic)	20-40	---	Very strongly cemented	None	High	Moderate
Logtrain gravelly loam-----	Bedrock (lithic)	40-60	---	Strongly cemented	None	High	Moderate
Walkermine very gravelly loam-----	Bedrock (lithic)	4-20	---	Indurated	None	High	Low
808: Bottlehill very gravelly loam-----	Bedrock (lithic)	20-40	---	Very strongly cemented	None	High	Moderate
Walkermine very gravelly loam-----	Bedrock (lithic)	4-20	---	Indurated	None	High	Low
Logtrain gravelly loam-----	Bedrock (lithic)	40-60	---	Strongly cemented	None	High	Moderate

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Thickness In	Hardness		Uncoated steel	Concrete
809:							
Walkermine very gravelly loam-----	Bedrock (lithic)	4-20	---	Indurated	None	High	Low
Bottlehill very gravelly loam-----	Bedrock (lithic)	20-40	---	Very strongly cemented	None	High	Moderate
Logtrain gravelly loam-----	Bedrock (lithic)	40-60	---	Strongly cemented	None	High	Moderate
Rock outcrop, metavolcanic.							
810:							
Dixmine very gravelly loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	High	Moderate
Mac gravelly loam-----	Bedrock (paralithic)	20-40	---	Weakly cemented	None	Moderate	Moderate
Spine very gravelly loam-----	Bedrock (lithic)	10-20	---	Indurated	None	Moderate	Moderate
811:							
Powellton gravelly loam-----	---	---	---	---	None	Moderate	Moderate
Toadtown loam-----	Bedrock (paralithic)	60-120	---	Extremely weakly cemented	None	Moderate	Moderate
812:							
Powellton gravelly loam-----	---	---	---	---	None	Moderate	Moderate
Toadtown loam-----	Bedrock (paralithic)	60-120	---	Extremely weakly cemented	None	Moderate	Moderate
813:							
Powellton gravelly loam-----	---	---	---	---	None	Moderate	Moderate
Toadtown loam-----	Bedrock (paralithic)	60-120	---	Extremely weakly cemented	None	Moderate	Moderate
814:							
Mountyana gravelly loam-----	Bedrock (paralithic)	60-80	---	Moderately cemented	None	High	Moderate
815:							
Mountyana gravelly loam-----	Bedrock (paralithic)	60-80	---	Moderately cemented	None	High	Moderate

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Thickness In	Hardness		Uncoated steel	Concrete
817: Lydon very gravelly medial coarse sandy loam-----	Bedrock (lithic)	20-40	---	Indurated	None	High	Moderate
818: Lydon very gravelly medial coarse sandy loam-----	Bedrock (lithic)	20-40	---	Indurated	None	High	Moderate
819: Lydon very gravelly medial coarse sandy loam-----	Bedrock (lithic)	20-40	---	Indurated	None	High	Moderate
Rock outcrop, mudflow breccia.							
820: Lydon very gravelly medial coarse sandy loam-----	Bedrock (lithic)	20-40	---	Indurated	None	High	Moderate
Rock outcrop, mudflow breccia.							
821: Lydon very gravelly medial coarse sandy loam-----	Bedrock (lithic)	20-40	---	Indurated	None	High	Moderate
Rock outcrop, mudflow breccia.							
822: Bonpile gravelly medial loam-----	Bedrock (paralithic)	40-60	---	Very weakly cemented	None	High	Moderate
823: Bonpile gravelly medial loam-----	Bedrock (paralithic)	40-60	---	Very weakly cemented	None	High	Moderate
824: Beecee very gravelly medial loam-----	---	---	---	---	None	High	Moderate
825: Beecee very gravelly medial loam-----	---	---	---	---	None	High	Moderate
Lydon very gravelly medial coarse sandy loam-----	Bedrock (lithic)	20-40	---	Indurated	None	High	Moderate
826: Redbone gravelly medial sandy loam----	Bedrock (paralithic)	40-60	---	Very weakly cemented	None	High	Moderate

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
827: Redbone gravelly medial sandy loam----	Bedrock (paralithic)	40-60	---	Very weakly cemented	None	High	Moderate
829: Paradiso loam-----	---	---	---	---	None	Moderate	Moderate
830: Paradiso loam-----	---	---	---	---	None	Moderate	Moderate
831: Surnuf gravelly loam-----	---	---	---	---	None	High	Moderate
Bigridge loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low	Moderate
Spine very gravelly loam-----	Bedrock (lithic)	10-20	---	Indurated	None	Moderate	Moderate
832: Surnuf gravelly loam-----	---	---	---	---	None	High	Moderate
Bigridge loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low	Moderate
Spine very gravelly loam-----	Bedrock (lithic)	10-20	---	Indurated	None	Moderate	Moderate
833: Surnuf gravelly loam-----	---	---	---	---	None	High	Moderate
Bigridge loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low	Moderate
Spine very gravelly loam-----	Bedrock (lithic)	10-20	---	Indurated	None	Moderate	Moderate
834: Hietanen gravelly loam-----	Bedrock (paralithic)	40-60	---	Very weakly cemented	None	Moderate	Moderate
Mac gravelly loam-----	Bedrock (paralithic)	20-40	---	Weakly cemented	None	Moderate	Moderate
835: Hietanen gravelly loam-----	Bedrock (paralithic)	40-60	---	Very weakly cemented	None	Moderate	Moderate
Mac gravelly loam-----	Bedrock (paralithic)	20-40	---	Weakly cemented	None	Moderate	Moderate

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Thickness In	Hardness		Uncoated steel	Concrete
836:							
Hietanen gravelly loam-----	Bedrock (paralithic)	40-60	---	Very weakly cemented	None	Moderate	Moderate
Mac gravelly loam-----	Bedrock (paralithic)	20-40	---	Weakly cemented	None	Moderate	Moderate
Spine very gravelly loam-----	Bedrock (lithic)	10-20	---	Indurated	None	Moderate	Moderate
837:							
Hietanen gravelly loam-----	Bedrock (paralithic)	40-60	---	Very weakly cemented	None	Moderate	Moderate
Spine very gravelly loam-----	Bedrock (lithic)	10-20	---	Indurated	None	Moderate	Moderate
Mac gravelly loam-----	Bedrock (paralithic)	20-40	---	Weakly cemented	None	Moderate	Moderate
838:							
Dixmine very gravelly loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	High	Moderate
Spine very gravelly loam-----	Bedrock (lithic)	10-20	---	Indurated	None	Moderate	Moderate
Mac gravelly loam-----	Bedrock (paralithic)	20-40	---	Weakly cemented	None	Moderate	Moderate
839:							
Chawanakee gravelly sandy loam-----	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	None	Low	Moderate
Billscabin gravelly sandy loam-----	Bedrock (paralithic)	60-82	---	Moderately cemented	None	Moderate	Moderate
841:							
Billscabin gravelly sandy loam-----	Bedrock (paralithic)	60-82	---	Moderately cemented	None	Moderate	Moderate
Bonneyridge sandy loam-----	Bedrock (paralithic)	60-130	---	Weakly cemented	None	Moderate	Moderate
842:							
Billscabin gravelly sandy loam-----	Bedrock (paralithic)	60-82	---	Moderately cemented	None	Moderate	Moderate

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Thickness In	Hardness		Uncoated steel	Concrete
842: Bonneyridge sandy loam-----	Bedrock (paralithic)	60-130	---	Weakly cemented	None	Moderate	Moderate
846: Bonneyridge sandy loam-----	Bedrock (paralithic)	60-130	---	Weakly cemented	None	Moderate	Moderate
Lewisflat loam-----	Bedrock (paralithic)	60-130	---	Moderately cemented	None	Low	Moderate
847: Bonneyridge sandy loam-----	Bedrock (paralithic)	60-130	---	Weakly cemented	None	Moderate	Moderate
Lewisflat loam-----	Bedrock (paralithic)	60-130	---	Moderately cemented	None	Low	Moderate
848: Bonneyridge sandy loam-----	Bedrock (paralithic)	60-130	---	Weakly cemented	None	Moderate	Moderate
Lewisflat loam-----	Bedrock (paralithic)	60-130	---	Moderately cemented	None	Low	Moderate
850: Lewisflat loam-----	Bedrock (paralithic)	60-130	---	Moderately cemented	None	Low	Moderate
851: Lewisflat loam-----	Bedrock (paralithic)	60-130	---	Moderately cemented	None	Low	Moderate
852: Lewisflat loam-----	Bedrock (paralithic)	60-130	---	Moderately cemented	None	Low	Moderate
860: Toadtown gravelly loam-----	---	---	---	---	None	Moderate	Moderate
Powellton silt loam-----	---	---	---	---	None	Moderate	Moderate
861: Toadtown gravelly loam-----	---	---	---	---	None	Moderate	Moderate
Powellton silt loam-----	---	---	---	---	None	Moderate	Moderate

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Thickness In	Hardness		Uncoated steel	Concrete
862: Toadtown gravelly loam-----	---	---	---	---	None	Moderate	Moderate
Powellton silt loam-----	---	---	---	---	None	Moderate	Moderate
863: Toadtown gravelly loam-----	---	---	---	---	None	Moderate	Moderate
Powellton silt loam-----	---	---	---	---	None	Moderate	Moderate
880: Sites taxadjunct gravelly loam-----	---	---	---	---	None	High	Moderate
Jocal taxadjunct gravelly loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	High	High
881: Sites taxadjunct gravelly loam-----	---	---	---	---	None	High	Moderate
Jocal taxadjunct gravelly loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	High	High
882: Sites taxadjunct gravelly loam-----	---	---	---	---	None	High	Moderate
Jocal taxadjunct gravelly loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	High	High
883: Sites taxadjunct gravelly loam-----	---	---	---	---	None	High	Moderate
Jocal taxadjunct gravelly loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	High	High
885: Rogerville silt loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low	Moderate
886: Rogerville silt loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low	Moderate
892: Rogerville silt loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low	Moderate

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Thickness In	Hardness		Uncoated steel	Concrete
893: Rogerville silt loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low	Moderate
902: Lava flows, Lovejoy basalt.							
Lumpkin gravelly medial sandy loam----	Bedrock (lithic)	10-20	---	Indurated	None	High	Moderate
903: Mudwash gravelly medial sandy loam----	Bedrock (paralithic)	60-80	---	Moderately cemented	None	High	High
Timberisland very gravelly medial sandy loam-----	Bedrock (lithic)	40-60	---	Indurated	None	High	High
Lavatop gravelly medial fine sandy loam-----	Bedrock (lithic)	20-40	---	Indurated	None	High	Moderate
904: Lava flows, Lovejoy basalt.							
Lavatop gravelly medial fine sandy loam-----	Bedrock (lithic)	20-40	---	Indurated	None	High	Moderate
905: Lava flows, Lovejoy basalt.							
Lumpkin gravelly medial sandy loam----	Bedrock (lithic)	10-20	---	Indurated	None	High	Moderate
906: Lava flows, Lovejoy basalt.							
Lumpkin gravelly medial sandy loam----	Bedrock (lithic)	10-20	---	Indurated	None	High	Moderate
911: Endoaquolls loam-----	---	---	---	---	None	High	Low
923: Powderhouse medial sandy loam-----	Bedrock (paralithic)	20-40	---	Moderately cemented	Low	High	High
McNair medial coarse sandy loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	Low	High	High

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Thickness In	Hardness		Uncoated steel	Concrete
923: Greenwell medial sandy loam-----	Bedrock (paralithic)	20-40	---	Moderately cemented	Low	High	High
924: Powderhouse medial sandy loam-----	Bedrock (paralithic)	20-40	---	Moderately cemented	Low	High	High
McNair medial coarse sandy loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	Low	High	High
Greenwell medial sandy loam-----	Bedrock (paralithic)	20-40	---	Moderately cemented	Low	High	High
925: Powderhouse medial sandy loam-----	Bedrock (paralithic)	20-40	---	Moderately cemented	Low	High	High
McNair medial coarse sandy loam-----	Bedrock (paralithic)	40-60	---	Moderately cemented	Low	High	High
Greenwell medial sandy loam-----	Bedrock (paralithic)	20-40	---	Moderately cemented	Low	High	High
930: Shakeridge gravelly medial coarse sandy loam-----	Bedrock (lithic)	60-100	---	Indurated	None	High	High
Timberisland very gravelly medial sandy loam-----	Bedrock (lithic)	40-60	---	Indurated	None	High	High
931: Shakeridge gravelly medial coarse sandy loam-----	Bedrock (lithic)	60-100	---	Indurated	None	High	High
Mudwash gravelly medial sandy loam----	Bedrock (paralithic)	60-80	---	Moderately cemented	None	High	High
Timberisland very gravelly medial sandy loam-----	Bedrock (lithic)	40-60	---	Indurated	None	High	High
932: Shakeridge gravelly medial coarse sandy loam-----	Bedrock (lithic)	60-100	---	Indurated	None	High	High

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Thickness In	Hardness		Uncoated steel	Concrete
932: Mudwash gravelly medial sandy loam----	Bedrock (paralithic)	60-80	---	Moderately cemented	None	High	High
933: Shakeridge gravelly medial coarse sandy loam-----	Bedrock (lithic)	60-100	---	Indurated	None	High	High
934: Mudwash gravelly medial sandy loam----	Bedrock (paralithic)	60-80	---	Moderately cemented	None	High	High
939: Fluvaquentic Humaquepts very fine sandy loam-----	---	---	---	---	None	Moderate	Moderate
940: Dejonah gravelly loam-----	Bedrock (paralithic)	60-80	---	Moderately cemented	Low	Moderate	Moderate
Stagpoint loam-----	Bedrock (paralithic)	60-100	---	Moderately cemented	Low	Moderate	Moderate
941: Dejonah gravelly loam-----	Bedrock (paralithic)	60-80	---	Moderately cemented	Low	Moderate	Moderate
Stagpoint loam-----	Bedrock (paralithic)	60-100	---	Moderately cemented	Low	Moderate	Moderate
942: Stagpoint loam-----	Bedrock (paralithic)	60-100	---	Moderately cemented	Low	Moderate	Moderate
Dejonah gravelly loam-----	Bedrock (paralithic)	60-80	---	Moderately cemented	Low	Moderate	Moderate
948: Stagpoint loam-----	Bedrock (paralithic)	60-100	---	Moderately cemented	Low	Moderate	Moderate
Dejonah gravelly loam-----	Bedrock (paralithic)	60-80	---	Moderately cemented	Low	Moderate	Moderate

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Thickness In	Hardness		Uncoated steel	Concrete
949: Rogerville taxadjunct fine sandy loam	Bedrock (paralithic)	40-60	---	Moderately cemented	Low	High	High
950: Lumpkin taxadjunct very gravelly medial very fine sandy loam-----	Bedrock (lithic)	5-10	---	Indurated	Low	Moderate	Moderate
Rock outcrop, olivine basalt, andesite, or mudflow.							
Powderhouse medial sandy loam-----	Bedrock (paralithic)	20-40	---	Moderately cemented	Low	High	High
951: Lumpkin taxadjunct very gravelly medial very fine sandy loam-----	Bedrock (lithic)	5-10	---	Indurated	Low	Moderate	Moderate
Rock outcrop, andesite.							
Powderhouse medial sandy loam-----	Bedrock (paralithic)	20-40	---	Moderately cemented	Low	High	High
960: Surnuf gravelly loam, high elevation--	---	---	---	---	None	Moderate	Moderate
961: Surnuf gravelly loam, high elevation--	---	---	---	---	None	Moderate	Moderate
962: Surnuf gravelly loam, high elevation--	---	---	---	---	None	Moderate	Moderate
963: Surnuf gravelly loam, high elevation--	---	---	---	---	None	Moderate	Moderate
990. Riverwash, frequently flooded							
991: Xerofluvents sandy loam, frequently flooded-----	---	---	---	---	None	High	Low
995. Pits, gravel							

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Thickness In	Hardness		Uncoated steel	Concrete
996. Dumps, excavated material							
997. Pits							
998. Dumps, landfill							
999. Water							
DAM. Dam, manmade							

Table 26.--Classification of the Soils

(An asterisk in the first column indicates a taxadjunct to the series. See text for a description of those characteristics that are outside the range of the series)

Soil name	Family or higher taxonomic class
Almendra-----	Fine-loamy, mixed, superactive, thermic Pachic Haploxerolls
Anita-----	Clayey, smectitic, thermic, shallow Xeric Duraquerts
*Anita taxadjunct-----	Clayey, smectitic, thermic, shallow Vertic Endoaquepts
Aquic Xerofluvents-----	Coarse-loamy, mixed, active, nonacid Aquic Xerofluvents
Arbuckle-----	Fine-loamy, mixed, superactive, thermic Typic Haploxeralfs
*Argonaut taxadjunct-----	Fine, mixed, superactive, thermic Ultic Haploxeralfs
Auburn-----	Loamy, mixed, superactive, thermic Lithic Haploxerepts
Beatsonhollow-----	Loamy-skeletal, mixed, superactive, thermic Lithic Haplohumults
*Beatsonhollow taxadjunct	Loamy, mixed, superactive, thermic Lithic Haplohumults
Beecee-----	Medial-skeletal, mixed, mesic Typic Haploxerands
Bigridge-----	Fine-loamy, mixed, active, mesic Ultic Haploxeralfs
Billscabin-----	Loamy-skeletal, isotic, mesic Typic Dystroxerepts
Blavo-----	Very-fine, smectitic, thermic Xeric Duraquerts
Boga-----	Fine-loamy, mixed, superactive, thermic Typic Haploxeralfs
Bonepile-----	Medial-skeletal, glassy, frigid Typic Haploxerands
*Bonepile taxadjunct-----	Loamy-skeletal, isotic, mesic Ultic Haploxerands
Bonneyr ridge-----	Coarse-loamy, isotic, mesic Typic Dystroxerepts
Bosquejo-----	Fine, smectitic, thermic Typic Haploxererts
*Bosquejo taxadjunct-----	Fine, smectitic, thermic Chromic Haploxererts
Bottlehill-----	Loamy-skeletal, mixed, active, mesic Xeric Haplohumults
Boxrobber-----	Loamy-skeletal, mixed, active, mesic, shallow Ultic Haploxeralfs
Busacca-----	Fine, mixed, superactive, thermic Pachic Haploxerolls
Butteside-----	Fine, mixed, superactive, thermic Typic Haploxeralfs
Calcic Haploxerolls-----	Mixed, superactive, thermic Calcic Haploxerolls
Campbellhills-----	Loamy-skeletal, mixed, superactive, thermic Ultic Argixerolls
Carhart-----	Fine, smectitic, thermic Xeric Endoaquerts
*Carhart taxadjunct-----	Clayey, smectitic, thermic, shallow Xeric Endoaquerts
Cerpone-----	Fine-loamy, parasesquic, mesic Ultic Haploxeralfs
Charger-----	Coarse-loamy, mixed, superactive, thermic Typic Haploxerolls
Chawanakee-----	Loamy, mixed, active, mesic, shallow Typic Dystroxerepts
Cherokeespring-----	Fine-loamy, mixed, superactive, thermic Ultic Palexeralfs
Cherotable-----	Fine-loamy, parasesquic, thermic Ultic Haploxeralfs
Chico-----	Fine-loamy, mixed, superactive, thermic Pachic Argixerolls
Chinacamp-----	Loamy-skeletal, mixed, superactive, thermic Haplic Palexeralfs
Clear Lake-----	Fine, smectitic, thermic Xeric Endoaquerts
Clearhayes-----	Fine-loamy, mixed, superactive, thermic Typic Haploxeralfs
Coalcanyon-----	Loamy-skeletal, parasesquic, thermic Pachic Ultic Argixerolls
*Coalcanyon taxadjunct-----	Loamy-skeletal, mixed, superactive, thermic Haplic Palexeralfs
Codora-----	Fine, mixed, superactive, thermic Fluventic Haploxerepts
Columbia-----	Coarse-loamy, mixed, superactive, nonacid, thermic Oxyaquic Xerofluvents
*Columbia taxadjunct-----	Coarse-loamy, mixed, superactive, nonacid, thermic Aeric Fluvaquents
Conejo-----	Fine-loamy, mixed, superactive, thermic Pachic Haploxerolls
Coonhollow-----	Loamy-skeletal, parasesquic, thermic Pachic Ultic Argixerolls
Coridge-----	Loamy-skeletal, mixed, superactive, thermic Ultic Haploxeralfs
Craigsaddle-----	Fine-loamy, mixed, active, thermic Ultic Haploxeralfs
Crystalhill-----	Coarse-loamy, mixed, active, thermic Typic Haploxerepts
Dejonah-----	Fine-loamy, mixed, active, frigid Andic Haplohumults
Dixmine-----	Clayey-skeletal, parasesquic, mesic Typic Haploxerults
Dodgeland-----	Fine, smectitic, thermic Xeric Endoaquerts
Doemill-----	Loamy, mixed, superactive, thermic Lithic Haploxeralfs
Dunstone-----	Loamy, mixed, superactive, thermic, shallow Ultic Haploxeralfs
Duraquerts-----	Fine, smectitic, thermic Xeric Duraquerts
Duric Xerarents-----	Thermic Duric Xerarents
Durixeralfs-----	Clayey-skeletal, smectitic, thermic, shallow Haplic Durixeralfs
Durixeralfs-----	Fine-loamy, mixed, superactive, thermic Typic Durixeralfs
Durixeralfs-----	Loamy-skeletal, mixed, superactive, thermic, shallow Typic Durixeralfs
Durixerolls-----	Fine-loamy, mixed, superactive, thermic Durixerolls
Dystroxerepts-----	Loamy-skeletal, mixed, active, thermic Typic Dystroxerepts
Earlal-----	Loamy-skeletal, magnesian, mesic Lithic Haploxeralfs
Eastbiggs-----	Fine, mixed, active, thermic Abruptic Durixeralfs

Table 26.--Classification of the Soils--Continued

Soil name	Family or higher taxonomic class
Edjobe-----	Fine, smectitic, thermic Xeric Epiaquerts
Elsey-----	Fine-loamy, mixed, superactive, thermic Oxyaquic Haplohumults
Endoaquolls-----	Endoaquolls
Esquon-----	Fine, smectitic, thermic Xeric Epiaquerts
Fallager-----	Clayey, mixed, superactive, thermic, shallow Typic Durixeralfs
Farwell-----	Fine-loamy, mixed, superactive, thermic Fluventic Haploxerepts
Featherfalls-----	Fine-loamy, mixed, active, mesic Ultic Palexeralfs
Fernandez-----	Fine-loamy, mixed, active, thermic Ultic Palexeralfs
Flagcanyon-----	Loamy-skeletal, mixed, superactive, thermic Haplic Durixeralfs
*Flagcanyon taxadjunct-----	Fine-loamy, mixed, superactive, thermic Haplic Durixeralfs
Flanly-----	Fine-loamy, mixed, active, thermic Ultic Haploxeralfs
Flumewall-----	Loamy-skeletal, isotic, mesic Lithic Haploxerulfs
Fluvaquentic Humaquepts--	Fine-loamy, mixed, superactive, mesic Fluvaquentic Humaquepts
Fluvaquents, loamy-----	Mesic Fluvaquents
Galt-----	Fine, smectitic, thermic Aquic Durixererts
*Galt taxadjunct-----	Fine-loamy, mixed, superactive, thermic Typic Durixerepts
Gianella-----	Coarse-loamy, mixed, superactive, nonacid, thermic Typic Xerofluvents
Govstanford-----	Coarse-loamy over clayey, mixed over smectitic, superactive, nonacid, thermic Oxyaquic Xerofluvents
Greenwell-----	Medial, amorphic, frigid Humic Haploxerands
Gridley-----	Fine, smectitic, thermic Typic Argixerolls
*Gridley taxadjunct-----	Fine, smectitic, thermic Typic Durixerolls
Griffgulch-----	Clayey-skeletal, mixed, active, mesic Ultic Haploxeralfs
Hamslough-----	Clayey-skeletal, smectitic, thermic Typic Petraquepts
Haplic Palexeralfs-----	Loamy-skeletal, mixed, superactive, thermic Haplic Palexeralfs
Haploxeralfs-----	Loamy-skeletal, mixed, active, thermic Ultic Haploxeralfs
Haploxeralfs, terrace----	Haploxeralfs
Haploxerands-----	Haploxerands
Haploxerands, granitic till-----	Frigid Typic Haploxerands
Haploxerands, volcanic till-----	Frigid Haploxerands
Haploxererts-----	Fine, smectitic, thermic Haploxererts
Haploxerolls-----	Fine-loamy, mixed, superactive, thermic Haploxerolls
Hartsmill-----	Loamy-skeletal, mixed, superactive, thermic Ultic Palexeralfs
Hietanen-----	Fine-loamy, mixed, active, mesic Typic Haploxerulfs
Hoda-----	Fine, kaolinitic, mesic Ultic Haploxeralfs
Holillipah-----	Sandy, mixed, thermic Typic Xerofluvents
Holland-----	Fine-loamy, mixed, semiactive, mesic Ultic Haploxeralfs
Hotaw-----	Fine-loamy, mixed, active, mesic Ultic Haploxeralfs
Hurleton-----	Loamy-skeletal, mixed, active, thermic Ultic Haploxeralfs
Ignord-----	Coarse-loamy, mixed, superactive, thermic Pachic Haploxerolls
Igo-----	Loamy, mixed, superactive, thermic, shallow Typic Durixeralfs
Islandbar-----	Coarse-loamy, mixed, active, mesic Typic Dystroxerepts
Jocal-----	Fine-loamy, mixed, active, mesic Typic Haploxerulfs
*Jocal taxadjunct-----	Fine-loamy, mixed, semiactive, mesic Andic Haploxerulfs
Jokerst-----	Loamy, mixed, superactive, thermic Lithic Haploxeralfs
Katskillhill-----	Fine, mixed, superactive, thermic Ultic Palexeralfs
Kimball-----	Fine, mixed, active, thermic Mollic Palexeralfs
Kusalslough-----	Fine, mixed, superactive, nonacid, thermic Oxyaquic Xerofluvents
Lavatop-----	Medial-skeletal, amorphic, mesic Humic Haploxerands
Lewisflat-----	Fine-loamy, mixed, semiactive, mesic Andic Haploxerulfs
Lithic Xerorthents-----	Loamy, mixed, active, nonacid, mesic Lithic Xerorthents
Liveoak-----	Fine-loamy, mixed, superactive, thermic Typic Haploxerolls
*Liveoak taxadjunct-----	Fine-loamy, mixed, superactive, thermic Typic Calcixerepts
Llanoseco-----	Fine, smectitic, thermic Chromic Haploxererts
Loafercreek-----	Fine-loamy, mixed, superactive, thermic Ultic Haploxeralfs
Loemstone-----	Fine-loamy, mixed, superactive, thermic Typic Haploxeralfs
Lofgren-----	Very-fine, smectitic, thermic Xeric Epiaquerts
Logtrain-----	Loamy-skeletal, mixed, active, mesic Typic Haploxerulfs
Lomarica-----	Clayey-skeletal, mixed, superactive, thermic Ultic Haploxeralfs
Lucksev-----	Clayey, mixed, superactive, thermic, shallow Typic Haploxeralfs
Lumpkin-----	Medial-skeletal, amorphic, mesic Lithic Haploxerands
*Lumpkin taxadjunct-----	Medial-skeletal, amorphic, frigid Lithic Haploxerands
Lydon-----	Loamy-skeletal, isotic, mesic Andic Dystroxerepts

Table 26.--Classification of the Soils--Continued

Soil name	Family or higher taxonomic class
Mac-----	Fine-loamy, mixed, active, mesic Typic Haploxerults
Marcum-----	Fine, smectitic, thermic Typic Argixerolls
*Mariposa taxadjunct-----	Fine-loamy, parasessquic, mesic Typic Haploxerults
McNair-----	Medial-skeletal, amorphous, frigid Humic Haploxerands
Mildred-----	Fine, mixed, active, mesic Ultic Haploxeralfs
Millerridge-----	Fine-loamy, mixed, active, mesic Ultic Haploxeralfs
Minniecreek-----	Fine-loamy, mixed, active, mesic Ultic Haploxeralfs
*Moda taxadjunct-----	Fine, mixed, active, thermic Abruptic Durixeralfs
Mounthope-----	Fine-loamy, mixed, superactive, thermic Ultic Haploxeralfs
Mountyana-----	Fine-loamy, isotic, mesic Andic Haplohumults
Mudwash-----	Medial over loamy, mixed over isotic, mesic Alfic Humic Haploxerands
Munjar-----	Loamy-skeletal, mixed, superactive, thermic Typic Durixeralfs
Neerdobe-----	Fine, smectitic, thermic Xeric Duraquerts
Obskel-----	Loamy-skeletal, isotic, mesic Andic Haploxerults
Obstruction-----	Fine-loamy, isotic, mesic Andic Haploxerults
Olashes-----	Fine-loamy, mixed, superactive, thermic Mollic Haploxeralfs
Ordferry-----	Fine, smectitic, thermic Xeric Duraquerts
Oregongulch-----	Coarse-loamy, mixed, active, thermic Typic Haploxerepts
Oroshore-----	Loamy-skeletal, mixed, active, thermic Ultic Haploxeralfs
Oroville-----	Fine, mixed, active, thermic Aquic Durixeralfs
Oxyaquic Xerofluvents----	Coarse-loamy, mixed, superactive, nonacid, thermic Oxyaquic Xerofluvents
Oxyaquic Xerofluvents----	Fine, mixed, superactive, nonacid, thermic Oxyaquic Xerofluvents
Oxyaquic Xerofluvents----	Fine-loamy, mixed, superactive, nonacid, thermic Oxyaquic Xerofluvents
Palexerults-----	Kaolinitic, superactive, thermic Typic Palexerults
Paradiso-----	Fine, mixed, semiactive, mesic Andic Haploxeralfs
Parkshill-----	Fine-loamy, mixed, active, thermic Ultic Palexeralfs
Parrott-----	Fine-silty, mixed, superactive, thermic Fluventic Haploxerepts
Perkins-----	Fine-loamy, mixed, superactive, thermic Mollic Haploxeralfs
Powderhouse-----	Medial-skeletal, glassy, frigid Humic Haploxerands
Powellton-----	Fine-loamy, parasessquic, mesic Andic Haplohumults
Rackerby-----	Loamy-skeletal, mixed, active, thermic, shallow Typic Haploxerepts
Redbone-----	Medial over loamy-skeletal, amorphous over isotic, mesic Ultic Haploxerands
Redding-----	Fine, mixed, active, thermic Abruptic Durixeralfs
Redsluff-----	Fine-loamy, mixed, superactive, thermic Mollic Haploxeralfs
*Redsluff taxadjunct-----	Fine, mixed, superactive, thermic Typic Haploxeralfs
Redswale-----	Loamy-skeletal, mixed, superactive, thermic, shallow Typic Durixeralfs
Redtough-----	Loamy, mixed, superactive, thermic, shallow Typic Durixeralfs
Retsongulch-----	Loamy-skeletal, isotic, mesic Typic Haploxerults
Rockstripe-----	Loamy-skeletal, mixed, active, nonacid, mesic Lithic Xerorthents
Rogerville-----	Fine, mixed, mesic Xeric Kanhaplohumults
*Rogerville taxadjunct----	Fine-loamy, mixed, subactive, frigid Andic Haplohumults
Schott-----	Loamy-skeletal, mixed, semiactive, mesic Andic Haploxeralfs
Shakeridge-----	Medial-skeletal, ferrihydritic, mesic Humic Haploxerands
Sites-----	Fine, parasessquic, mesic Xeric Haplohumults
*Sites taxadjunct-----	Fine, parasessquic, mesic Andic Palehumults
Slideland-----	Fine-loamy, mixed, superactive, thermic Haplic Palexeralfs
Sobrante-----	Fine-loamy, mixed, active, thermic Mollic Haploxeralfs
Sommeysflat-----	Fine-loamy, mixed, superactive, thermic Ultic Haploxeralfs
Spine-----	Loamy-skeletal, mixed, active, mesic Lithic Haploxerults
*Spine taxadjunct-----	Loamy-skeletal, mixed, active, mesic Lithic Haploxeralfs
Stagpoint-----	Loamy-skeletal, mixed, active, frigid Andic Haplohumults
*Subaco taxadjunct-----	Fine, smectitic, thermic Aquic Durixerererts
Sunnyslope-----	Loamy-skeletal, mixed, superactive, thermic, shallow Ultic Haploxeralfs
Surnuf-----	Fine, parasessquic, mesic Ultic Palexeralfs
*Surnuf taxadjunct-----	Fine, parasessquic, mesic Ultic Haploxeralfs
Swedesflat-----	Loamy, mixed, active, thermic, shallow Ultic Haploxeralfs
Thermalito-----	Fine-loamy, mixed, active, thermic Abruptic Durixeralfs
Thermalrocks-----	Loamy-skeletal, mixed, superactive, thermic Lithic Haplohumults
Thompsonflat-----	Fine-loamy, mixed, active, thermic Ultic Haploxeralfs
Timberisland-----	Medial-skeletal, ferrihydritic, mesic Humic Haploxerands
Toadtown-----	Fine, parasessquic, mesic Andic Haplohumults
Trainer-----	Fine-loamy, mixed, active, thermic Aquic Haploxerepts
Tuscan-----	Clayey, mixed, superactive, thermic, shallow Typic Durixeralfs
*Tuscan taxadjunct-----	Fine, mixed, superactive, thermic Typic Durixeralfs
Tusccoll-----	Fine-loamy, mixed, semiactive, mesic Andic Palexeralfs
Typic Haploxeralfs-----	Thermic Typic Haploxeralfs

Table 26.--Classification of the Soils--Continued

Soil name	Family or higher taxonomic class
Typic Haploxeralfs, magnesian-----	Magnesian, mesic Typic Haploxeralfs
Typic Petraquepts-----	Clayey, smectitic, thermic, shallow Typic Petraquepts
Typic Xerofluvents-----	Coarse-loamy, mixed, superactive, nonacid, thermic Typic Xerofluvents
Typic Xerofluvents-----	Sandy-skeletal, mixed, superactive, nonacid, thermic Typic Xerofluvents
Ultic Haploxeralfs-----	Mesic Ultic Haploxeralfs
Ultic Haploxeralfs, conglomerate-----	Thermic Ultic Haploxeralfs
Ultic Haploxeralfs, mesic	Mesic Ultic Haploxeralfs
Ultic Haploxeralfs, sandstone-----	Thermic Ultic Haploxeralfs
Ultic Haploxeralfs, sandstone, low elevation	Fine-loamy, mixed, superactive, thermic Ultic Haploxeralfs
Ultic Haploxeralfs, thermic-----	Loamy-skeletal, mixed, superactive, thermic Ultic Haploxeralfs
Ultic Haploxeralfs, thermic, high terrace---	Thermic Ultic Haploxeralfs
Vermet-----	Fine-silty, mixed, superactive, thermic Aquic Haploxerepts
Vina-----	Coarse-loamy, mixed, superactive, thermic Pachic Haploxerolls
Vistarobles-----	Clayey, mixed, active, thermic, shallow Abruptic Durixeralfs
Wafap-----	Clayey-skeletal, mixed, superactive, thermic Oxyaquic Argixerolls
Walkermine-----	Loamy-skeletal, mixed, active, mesic Lithic Dystroxerepts
Whitecabin-----	Fine, smectitic, thermic Aquic Haploxererts
Wickscorner-----	Fine-loamy, mixed, superactive, thermic Ultic Palexeralfs
Wilsoncreek-----	Fine-silty, mixed, superactive, thermic Cumulic Haploxerolls
Woodleaf-----	Clayey-skeletal, magnesian, mesic Ultic Haploxeralfs
Xerofluvents-----	Typic Xerofluvents
Xerorthents, shallow-----	Thermic Xerorthents
Xerorthents, tailings----	Thermic Xerorthents

Table 27.--Classification by Order, Suborder, Great Group, and Subgroup

(This table shows the taxonomic units in the survey are arranged by order, suborder, great group, and subgroup. An asterisk indicates a taxadjunct to the series. See text for a description of those characteristics that are outside the range of the series)

Order: Alfisols	
Suborder: Xeralfs	
Great Group: Durixeralfs	
Subgroup: Typic Durixeralfs	
Fallager-----	Clayey, mixed, superactive, thermic, shallow Typic Durixeralfs
Tuscan-----	Clayey, mixed, superactive, thermic, shallow Typic Durixeralfs
*Tuscan taxadjunct-----	Fine, mixed, superactive, thermic Typic Durixeralfs
Durixeralfs-----	Fine-loamy, mixed, superactive, thermic Typic Durixeralfs
Igo-----	Loamy, mixed, superactive, thermic, shallow Typic Durixeralfs
Redtough-----	Loamy, mixed, superactive, thermic, shallow Typic Durixeralfs
Munjar-----	Loamy-skeletal, mixed, superactive, thermic Typic Durixeralfs
Durixeralfs-----	Loamy-skeletal, mixed, superactive, thermic, shallow Typic Durixeralfs
Redswale-----	Loamy-skeletal, mixed, superactive, thermic, shallow Typic Durixeralfs
Subgroup: Abruptic Durixeralfs	
Vistarobles-----	Clayey, mixed, active, thermic, shallow Abruptic Durixeralfs
Eastbiggs-----	Fine, mixed, active, thermic Abruptic Durixeralfs
*Moda taxadjunct-----	Fine, mixed, active, thermic Abruptic Durixeralfs
Redding-----	Fine, mixed, active, thermic Abruptic Durixeralfs
Thermalito-----	Fine-loamy, mixed, active, thermic Abruptic Durixeralfs
Subgroup: Aquic Durixeralfs	
Oroville-----	Fine, mixed, active, thermic Aquic Durixeralfs
Subgroup: Haplic Durixeralfs	
Durixeralfs-----	Clayey-skeletal, smectitic, thermic, shallow Haplic Durixeralfs
*Flagcanyon taxadjunct-----	Fine-loamy, mixed, superactive, thermic Haplic Durixeralfs
Flagcanyon-----	Loamy-skeletal, mixed, superactive, thermic Haplic Durixeralfs
Great Group: Haploxeralfs	
Haploxeralfs, terrace-----	Haploxeralfs
Subgroup: Typic Haploxeralfs	
Lucksev-----	Clayey, mixed, superactive, thermic, shallow Typic Haploxeralfs
Butteside-----	Fine, mixed, superactive, thermic Typic Haploxeralfs
*Redsluff taxadjunct-----	Fine, mixed, superactive, thermic Typic Haploxeralfs
Arbuckle-----	Fine-loamy, mixed, superactive, thermic Typic Haploxeralfs
Boga-----	Fine-loamy, mixed, superactive, thermic Typic Haploxeralfs
Clearhayes-----	Fine-loamy, mixed, superactive, thermic Typic Haploxeralfs
Loemstone-----	Fine-loamy, mixed, superactive, thermic Typic Haploxeralfs
Typic Haploxeralfs, Magnesic--	Magnesic, mesic Typic Haploxeralfs
Typic Haploxeralfs-----	Thermic Typic Haploxeralfs
Subgroup: Andic Haploxeralfs	
Paradiso-----	Fine, mixed, semiactive, mesic Andic Haploxeralfs
Schott-----	Loamy-skeletal, mixed, semiactive, mesic Andic Haploxeralfs
Subgroup: Lithic Haploxeralfs	
Doemill-----	Loamy, mixed, superactive, thermic Lithic Haploxeralfs
Jokerst-----	Loamy, mixed, superactive, thermic Lithic Haploxeralfs
Earlal-----	Loamy-skeletal, magnesic, mesic Lithic Haploxeralfs
*Spine taxadjunct-----	Loamy-skeletal, mixed, active, mesic Lithic Haploxeralfs

Table 27.--Classification by Order, Suborder, Great Group, and Subgroup--Continued

Subgroup: Mollic Haploxeralfs

Sobrante-----Fine-loamy, mixed, active, thermic Mollic Haploxeralfs
 Olashes-----Fine-loamy, mixed, superactive, thermic Mollic Haploxeralfs
 Perkins-----Fine-loamy, mixed, superactive, thermic Mollic Haploxeralfs
 Redsluff-----Fine-loamy, mixed, superactive, thermic Mollic Haploxeralfs

Subgroup: Ultic Haploxeralfs

Woodleaf-----Clayey-skeletal, magnesian, mesic Ultic Haploxeralfs
 Griffgulch-----Clayey-skeletal, mixed, active, mesic Ultic Haploxeralfs
 Lomarica-----Clayey-skeletal, mixed, superactive, thermic Ultic Haploxeralfs
 Hoda-----Fine, kaolinitic, mesic Ultic Haploxeralfs
 Mildred-----Fine, mixed, active, mesic Ultic Haploxeralfs
 *Argonaut taxadjunct-----Fine, mixed, superactive, thermic Ultic Haploxeralfs
 *Surnuf taxadjunct-----Fine, parasesquic, mesic Ultic Haploxeralfs
 Bigridge-----Fine-loamy, mixed, active, mesic Ultic Haploxeralfs
 Hotaw-----Fine-loamy, mixed, active, mesic Ultic Haploxeralfs
 Millerridge-----Fine-loamy, mixed, active, mesic Ultic Haploxeralfs
 Minniecreek-----Fine-loamy, mixed, active, mesic Ultic Haploxeralfs
 Craigsaddle-----Fine-loamy, mixed, active, thermic Ultic Haploxeralfs
 Flantly-----Fine-loamy, mixed, active, thermic Ultic Haploxeralfs
 Thompsonflat-----Fine-loamy, mixed, active, thermic Ultic Haploxeralfs
 Holland-----Fine-loamy, mixed, semiactive, mesic Ultic Haploxeralfs
 Loafercreek-----Fine-loamy, mixed, superactive, thermic Ultic Haploxeralfs
 Mouthope-----Fine-loamy, mixed, superactive, thermic Ultic Haploxeralfs
 Sommeyflat-----Fine-loamy, mixed, superactive, thermic Ultic Haploxeralfs
 Ultic Haploxeralfs, sandstone,
 low elevation-----Fine-loamy, mixed, superactive, thermic Ultic Haploxeralfs
 Cerpone-----Fine-loamy, parasesquic, mesic Ultic Haploxeralfs
 Cherotable-----Fine-loamy, parasesquic, thermic Ultic Haploxeralfs
 Swedesflat-----Loamy, mixed, active, thermic, shallow Ultic Haploxeralfs
 Dunstone-----Loamy, mixed, superactive, thermic, shallow Ultic Haploxeralfs
 Boxrober-----Loamy-skeletal, mixed, active, mesic, shallow Ultic Haploxeralfs
 Haploxeralfs-----Loamy-skeletal, mixed, active, thermic Ultic Haploxeralfs
 Hurleton-----Loamy-skeletal, mixed, active, thermic Ultic Haploxeralfs
 Oroshore-----Loamy-skeletal, mixed, active, thermic Ultic Haploxeralfs
 Coridge-----Loamy-skeletal, mixed, superactive, thermic Ultic Haploxeralfs
 Ultic Haploxeralfs, thermic---Loamy-skeletal, mixed, superactive, thermic Ultic Haploxeralfs
 Sunnyslope-----Loamy-skeletal, mixed, superactive, thermic, shallow Ultic Haploxeralfs
 Ultic Haploxeralfs-----Mesic Ultic Haploxeralfs
 Ultic Haploxeralfs, mesic-----Mesic Ultic Haploxeralfs
 Ultic Haploxeralfs,
 conglomerate-----Thermic Ultic Haploxeralfs
 Ultic Haploxeralfs, sandstone Thermic Ultic Haploxeralfs
 Ultic Haploxeralfs, thermic,
 high terrace-----Thermic Ultic Haploxeralfs

Subgroup: Haplic Palexeralfs

Slideland-----Fine-loamy, mixed, superactive, thermic Haplic Palexeralfs

Great Group: Palexeralfs

Subgroup: Andic Palexeralfs

Tusccoll-----Fine-loamy, mixed, semiactive, mesic Andic Palexeralfs

Subgroup: Haplic Palexeralfs

Chinacamp-----Loamy-skeletal, mixed, superactive, thermic Haplic Palexeralfs
 *Coalcanyon taxadjunct-----Loamy-skeletal, mixed, superactive, thermic Haplic Palexeralfs
 Haplic Palexeralfs-----Loamy-skeletal, mixed, superactive, thermic Haplic Palexeralfs

Subgroup: Mollic Palexeralfs

Kimball-----Fine, mixed, active, thermic Mollic Palexeralfs

Table 27.--Classification by Order, Suborder, Great Group, and Subgroup--Continued

Subgroup: Ultic Palexeralfs

Katskillhill-----Fine, mixed, superactive, thermic Ultic Palexeralfs
 Surnuf-----Fine, parasesquic, mesic Ultic Palexeralfs
 Featherfalls-----Fine-loamy, mixed, active, mesic Ultic Palexeralfs
 Fernandez-----Fine-loamy, mixed, active, thermic Ultic Palexeralfs
 Parkshill-----Fine-loamy, mixed, active, thermic Ultic Palexeralfs
 Cherokeespring-----Fine-loamy, mixed, superactive, thermic Ultic Palexeralfs
 Wickscorner-----Fine-loamy, mixed, superactive, thermic Ultic Palexeralfs
 Hartsmill-----Loamy-skeletal, mixed, superactive, thermic Ultic Palexeralfs

Order: Andisols

Suborder: Xerands

Great Group: Haploxerands

Haploxerands, volcanic till---Frigid Haploxerands
 Haploxerands-----Haploxerands

Subgroup: Typic Haploxerands

Haploxerands, granitic till---Frigid Typic Haploxerands
 Bonepile-----Medial-skeletal, glassy, frigid Typic Haploxerands
 Beecee-----Medial-skeletal, mixed, mesic Typic Haploxerands

Subgroup: Alfic Humic Haploxerands

Mudwash-----Medial over loamy, mixed over isotic, mesic Alfic Humic Haploxerands

Subgroup: Humic Haploxerands

Greenwell-----Medial, amorphous, frigid Humic Haploxerands
 Mcnair-----Medial-skeletal, amorphous, frigid Humic Haploxerands
 Lavatop-----Medial-skeletal, amorphous, mesic Humic Haploxerands
 Shakeridge-----Medial-skeletal, ferrihydritic, mesic Humic Haploxerands
 Timberisland-----Medial-skeletal, ferrihydritic, mesic Humic Haploxerands
 Powderhouse-----Medial-skeletal, glassy, frigid Humic Haploxerands

Subgroup: Lithic Haploxerands

*Lumpkin taxadjunct-----Medial-skeletal, amorphous, frigid Lithic Haploxerands
 Lumpkin-----Medial-skeletal, amorphous, mesic Lithic Haploxerands

Subgroup: Ultic Haploxerands

*Bonepile taxadjunct-----Loamy-skeletal, isotic, mesic Ultic Haploxerands
 Redbone-----Medial over loamy-skeletal, amorphous over isotic, mesic Ultic Haploxerands

Order: Entisols

Suborder: Aquents

Great Group: Fluvaquents

Fluvaquents, loamy-----Mesic Fluvaquents

Subgroup: Aeric Fluvaquents

*Columbia taxadjunct-----Coarse-loamy, mixed, superactive, nonacid, thermic Aeric Fluvaquents

Suborder: Arents

Great Group: Xerarents

Subgroup: Duric Xerarents

Duric Xerarents-----Thermic Duric Xerarents

Table 27.--Classification by Order, Suborder, Great Group, and Subgroup--Continued

Subgroup: Andic Dystroxerepts	
Lydon-----	Loamy-skeletal, isotic, mesic Andic Dystroxerepts
Subgroup: Typic Dystroxerepts	
Bonneyridge-----	Coarse-loamy, isotic, mesic Typic Dystroxerepts
Islandbar-----	Coarse-loamy, mixed, active, mesic Typic Dystroxerepts
Chawanakee-----	Loamy, mixed, active, mesic, shallow Typic Dystroxerepts
Bills cabin-----	Loamy-skeletal, isotic, mesic Typic Dystroxerepts
Dystroxerepts-----	Loamy-skeletal, mixed, active, thermic Typic Dystroxerepts
Great Group: Haploxerepts	
Subgroup: Lithic Haploxerepts	
Auburn-----	Loamy, mixed, superactive, thermic Lithic Haploxerepts
Subgroup: Aquic Haploxerepts	
Trainer-----	Fine-loamy, mixed, active, thermic Aquic Haploxerepts
Vermet-----	Fine-silty, mixed, superactive, thermic Aquic Haploxerepts
Subgroup: Fluventic Haploxerepts	
Codora-----	Fine, mixed, superactive, thermic Fluventic Haploxerepts
Farwell-----	Fine-loamy, mixed, superactive, thermic Fluventic Haploxerepts
Parrott-----	Fine-silty, mixed, superactive, thermic Fluventic Haploxerepts
Subgroup: Typic Haploxerepts	
Crystalhill-----	Coarse-loamy, mixed, active, thermic Typic Haploxerepts
Oregongulch-----	Coarse-loamy, mixed, active, thermic Typic Haploxerepts
Rackerby-----	Loamy-skeletal, mixed, active, thermic, shallow Typic Haploxerepts
<hr/>	
Order: Mollisols	
Suborder: Aquolls	
Great Group: Endoaquolls	
Endoaquolls-----	Endoaquolls
Suborder: Xerolls	
Great Group: Argixerolls	
Subgroup: Typic Argixerolls	
Gridley-----	Fine, smectitic, thermic Typic Argixerolls
Marcum-----	Fine, smectitic, thermic Typic Argixerolls
Subgroup: Oxyaquic Argixerolls	
Wafap-----	Clayey-skeletal, mixed, superactive, thermic Oxyaquic Argixerolls
Subgroup: Pachic Ultic Argixerolls	
Coalcanyon-----	Loamy-skeletal, parasesquic, thermic Pachic Ultic Argixerolls
Coonhollow-----	Loamy-skeletal, parasesquic, thermic Pachic Ultic Argixerolls
Subgroup: Pachic Argixerolls	
Chico-----	Fine-loamy, mixed, superactive, thermic Pachic Argixerolls
Subgroup: Ultic Argixerolls	
Campbellhills-----	Loamy-skeletal, mixed, superactive, thermic Ultic Argixerolls

Table 27.--Classification by Order, Suborder, Great Group, and Subgroup--Continued

Great Group: Durixerolls	
Durixerolls-----	Fine-loamy, mixed, superactive, thermic Durixerolls
Subgroup: Typic Durixerolls	
*Gridley taxadjunct-----	Fine, smectitic, thermic Typic Durixerolls
Great Group: Haploxerolls	
Haploxerolls-----	Fine-loamy, mixed, superactive, thermic Haploxerolls
Subgroup: Typic Haploxerolls	
Charger-----	Coarse-loamy, mixed, superactive, thermic Typic Haploxerolls
Liveoak-----	Fine-loamy, mixed, superactive, thermic Typic Haploxerolls
Subgroup: Calcic Haploxerolls	
Calcic Haploxerolls-----	Mixed, superactive, thermic Calcic Haploxerolls
Subgroup: Cumulic Haploxerolls	
Wilsoncreek-----	Fine-silty, mixed, superactive, thermic Cumulic Haploxerolls
Subgroup: Pachic Haploxerolls	
Ignord-----	Coarse-loamy, mixed, superactive, thermic Pachic Haploxerolls
Vina-----	Coarse-loamy, mixed, superactive, thermic Pachic Haploxerolls
Busacca-----	Fine, mixed, superactive, thermic Pachic Haploxerolls
Almendra-----	Fine-loamy, mixed, superactive, thermic Pachic Haploxerolls
Conejo-----	Fine-loamy, mixed, superactive, thermic Pachic Haploxerolls
<hr/>	
Order: Ultisols	
Suborder: Humults	
Great Group: Haplohumults	
Subgroup: Andic Haplohumults	
Toadtown-----	Fine, parasesquic, mesic Andic Haplohumults
Mountyana-----	Fine-loamy, isotic, mesic Andic Haplohumults
Dejonah-----	Fine-loamy, mixed, active, frigid Andic Haplohumults
*Rogerville taxadjunct-----	Fine-loamy, mixed, subactive, frigid Andic Haplohumults
Powellton-----	Fine-loamy, parasesquic, mesic Andic Haplohumults
Stagpoint-----	Loamy-skeletal, mixed, active, frigid Andic Haplohumults
Subgroup: Lithic Haplohumults	
*Beatsonhollow taxadjunct-----	Loamy, mixed, superactive, thermic Lithic Haplohumults
Thermalrocks-----	Loamy-skeletal, mixed, superactive, thermic Lithic Haplohumults
Subgroup: Xeric Haplohumults	
Sites-----	Fine, parasesquic, mesic Xeric Haplohumults
Bottlehill-----	Loamy-skeletal, mixed, active, mesic Xeric Haplohumults
Subgroup: Oxyaquic Haplohumults	
Elsey-----	Fine-loamy, mixed, superactive, thermic Oxyaquic Haplohumults
Great Group: Kanhaplohumults	
Subgroup: Xeric Kanhaplohumults	
Rogerville-----	Fine, mixed, mesic Xeric Kanhaplohumults

Table 27.--Classification by Order, Suborder, Great Group, and Subgroup--Continued

Great Group: Palehumults	
Subgroup: Andic Palehumults	
*Sites taxadjunct-----	Fine, parasesquic, mesic Andic Palehumults
Suborder: Xerults	
Great Group: Haplohumults	
Subgroup: Lithic Haplohumults	
Beatsonhollow-----	Loamy-skeletal, mixed, superactive, thermic Lithic Haplohumults
Great Group: Haploxerults	
Subgroup: Typic Haploxerults	
Dixmine-----	Clayey-skeletal, parasesquic, mesic Typic Haploxerults
Hietanen-----	Fine-loamy, mixed, active, mesic Typic Haploxerults
Jocal-----	Fine-loamy, mixed, active, mesic Typic Haploxerults
Mac-----	Fine-loamy, mixed, active, mesic Typic Haploxerults
*Mariposa taxadjunct-----	Fine-loamy, parasesquic, mesic Typic Haploxerults
Retsongulch-----	Loamy-skeletal, isotic, mesic Typic Haploxerults
Logtrain-----	Loamy-skeletal, mixed, active, mesic Typic Haploxerults
Subgroup: Andic Haploxerults	
Obstruction-----	Fine-loamy, isotic, mesic Andic Haploxerults
*Jocal taxadjunct-----	Fine-loamy, mixed, semiactive, mesic Andic Haploxerults
Lewisflat-----	Fine-loamy, mixed, semiactive, mesic Andic Haploxerults
Obskel-----	Loamy-skeletal, isotic, mesic Andic Haploxerults
Subgroup: Lithic Haploxerults	
Flumewall-----	Loamy-skeletal, isotic, mesic Lithic Haploxerults
Spine-----	Loamy-skeletal, mixed, active, mesic Lithic Haploxerults
Great Group: Palexerults	
Subgroup: Typic Palexerults	
Palexerults-----	Kaolinitic, superactive, thermic Typic Palexerults
<hr/>	
Order: Vertisols	
Suborder: Xererts	
Great Group: Durixererts	
Subgroup: Aquic Durixererts	
Galt-----	Fine, smectitic, thermic Aquic Durixererts
*Subaco taxadjunct-----	Fine, smectitic, thermic Aquic Durixererts
Great Group: Haploxererts	
Haploxererts-----	Fine, smectitic, thermic Haploxererts
Subgroup: Typic Haploxererts	
Bosquejo-----	Fine, smectitic, thermic Typic Haploxererts
Subgroup: Aquic Haploxererts	
Whitecabin-----	Fine, smectitic, thermic Aquic Haploxererts
Subgroup: Chromic Haploxererts	
*Bosquejo taxadjunct-----	Fine, smectitic, thermic Chromic Haploxererts
Llanoseco-----	Fine, smectitic, thermic Chromic Haploxererts

Table 27.--Classification by Order, Suborder, Great Group, and Subgroup--Continued

Suborder: Aquerts

Great Group: Duraquerts

Subgroup: Xeric Duraquerts

Anita-----Clayey, smectitic, thermic, shallow Xeric Duraquerts
 Duraquerts-----Fine, smectitic, thermic Xeric Duraquerts
 Neerdobe-----Fine, smectitic, thermic Xeric Duraquerts
 Ordferry-----Fine, smectitic, thermic Xeric Duraquerts
 Blavo-----Very-fine, smectitic, thermic Xeric Duraquerts

Great Group: Endoaquerts

Subgroup: Xeric Endoaquerts

*Carhart taxadjunct-----Clayey, smectitic, thermic, shallow Xeric Endoaquerts
 Carhart-----Fine, smectitic, thermic Xeric Endoaquerts
 Clear Lake-----Fine, smectitic, thermic Xeric Endoaquerts
 Dodgeland-----Fine, smectitic, thermic Xeric Endoaquerts

Great Group: Epiaquerts

Subgroup: Xeric Epiaquerts

Edjobe-----Fine, smectitic, thermic Xeric Epiaquerts
 Esquon-----Fine, smectitic, thermic Xeric Epiaquerts
 Lofgren-----Very-fine, smectitic, thermic Xeric Epiaquerts

Appendices

Appendix A—Wildlife Habitat: Vegetation, Agriculture, Wetlands, and Miscellaneous Landscape Features

Prepared by Joseph G. Silveira, Wildlife Biologist, U.S. Fish and Wildlife Service, Sacramento National Wildlife Refuge Complex, Willows, California.

Habitat from Mayer and Laudenslayer (1988), except where indicated by an asterisk (*). Numbers in brackets refer to the general soil map units in this survey area.

Vegetation

Valley & Foothill Riparian [1, 2, 8, 9, 15, canyon bottoms]
 Valley Oak Woodland [1, 2, 8, 12], savanna [11, 12]
 Fresh Emergent Wetland [1, 2, 3, 4, 6]
 Annual Grassland [10, 12, 13, 14, 15, 16, 17, 18, 19, 20, 22]
 Blue Oak Woodland [14, 16, 19, 23]; savanna [17, 18, 22]
 Blue Oak–Foothill Pine [18, 20, 21, 23]
 Chamise–Redshank Chaparral [18]; limited to the Cohasset Ridge
 Mixed Chaparral with scattered blue oak, foothill pine, and interior live oak [18, 20, 21, 23, 24, 26]; with scattered ponderosa pine and incense cedar [24]
 * Mixed Chaparral with patches of Annual Grassland (on shallow soils) [25]
 Montane Hardwood–Conifer [26]
 Ponderosa Pine [27, 30, 34]
 Sierran Mixed Conifer [27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39]
 * Ultramafic Vegetation—blue oak (some areas in Butte County), foothill pine, Jeffery pine, and McNab cypress (near Magalia) and mixed chaparral in areas of ultramafic geology [30]
 Montane Chaparral [39]; limited by fire
 Montane Riparian [34]; inclusions
 Wet Meadow [34, 38, 39]; inclusions

Agriculture

Pasture [3, 6, 8, 9, 11]
 Cropland—rice [3, 4, 6, 12]; row crops [1, 5, 7, 9]; hay [9]
 Orchard–Vineyard—walnuts [1, 2, 7, 8, 9, 11]; almonds [1, 2, 7, 8, 9]; prunes [1, 2, 5, 11, 12]; peaches, nectarines, and kiwis [11]; olives and citrus [12]

Wetlands

Riverine—perennial and intermittent streams and rivers [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39]

Lacustrine—permanently flooded lakes and reservoirs and intermittent lakes and ponds, including vernal pools [1, 3, 4, 6, 8 10, 12, 13, 14, 17, 20, 24, 27, 30]

Miscellaneous Landscape Features

Cut banks, sand and gravel bars, and mudflats [1, 2, 11, 13, 14]

Volcanic mudflow rock outcrops [10, 15, 16, 17 18, 25, 37]

Lava flows and basalt outcrops [14, 35]

Metavolcanic rock outcrops [19, 20, 21, 22, 26, 27, 28, 29, 30, 31, 32, 38]

Diorite, gabbro, and quartz diorite rock outcrops [23, 24, 33, 34]

Ultramafic rock outcrops [30, 31]

Large andesite boulders on the surface [36]

Andesite mudflows [37]

Appendix B—Wildlife Habitat: Relationship of Landforms and Soils to Vegetation, Agriculture, and Miscellaneous Landscape Features

Prepared by Joseph G. Silveira, Wildlife Biologist, U.S. Fish and Wildlife Service, Sacramento National Wildlife Refuge Complex, Willows, California.

Habitat from Mayer and Laudenslayer (1988), except where indicated by an asterisk (*). Numbers in brackets refer to the general soil map units in this survey area.

Valley

Flood Plains Along the Sacramento and Feather Rivers

THERMIC SOILS ON FLOOD PLAINS IN THE SACRAMENTO VALLEY

Alluvial deposits—Sacramento River active meander belt and alluvial deposits [1];
Feather River terrace and fan alluvial deposits [2]

[1] Parrott–Gianella–Farwell
[2] Xerorthents, Tailings–Gianella

Valley & Foothill Riparian [1, 2]
Valley Oak Woodland [1, 2]
Fresh Emergent Wetland [1, 2]
Pasture [1, 2]
Riverine [1, 2]
Lacustrine, i.e., oxbow lakes [1]
Cropland—row crops [1]
Orchard–Vineyard—walnuts, almonds, prunes [1, 2]
Miscellaneous features—cut banks, sand and gravel bars, mudflats [1, 2]

Northeast Sacramento Valley Flood Basins

THERMIC SOILS IN FLOOD BASINS IN THE SACRAMENTO VALLEY

Basin deposits [3, 4, 5, 6]
[3] Lofgren–Blavo
[4] Esquon–Neerdobe
[5] Bosquejo–Galt
[6] Gridley Taxadjunct–Subaco Taxadjunct
Fresh Emergent Wetland [3, 4, 6]
Pasture [3, 6]
Riverine [3, 4, 5, 6]
Lacustrine, i.e., duck ponds [3, 4, 6]
Cropland—rice [3, 4, 6]; row crops [5]
Orchard–Vineyard—prunes [5]
Miscellaneous features—mudflats

Northeast Sacramento Valley Alluvial Fans

THERMIC SOILS ON ALLUVIAL FANS IN THE SACRAMENTO VALLEY

Modesto Formation [7, 8, 9]
[7] Olashes
[8] Conejo–Almendra–Vina
[9] Haploxerolls–Durixerolls

Valley & Foothill Riparian [8, 9]
 Valley Oak Woodland [8]
 Pasture [8, 9]
 Riverine [7, 8, 9]
 Lacustrine, i.e., Teichert Pond [8]
 Cropland—row crops [7, 9]; hay [9]
 Orchard—Vineyard—almonds, walnuts [7, 8, 9]

Southern Cascade and Northern Sierra Nevada Fan Terraces

THERMIC SOILS THAT FORMED IN CASCADE ALLUVIUM; ON FAN TERRACES IN THE SACRAMENTO VALLEY

Red Bluff Formation [10]
 [10] Redsluff—Redtough—Redswale
 Annual Grassland [10]
 Riverine [10]
 Lacustrine, i.e., vernal pools [10]

THERMIC SOILS THAT FORMED IN SIERRA NEVADA ALLUVIUM; ON LOW FAN TERRACES IN THE SACRAMENTO VALLEY

River Bank Formation [12]
 [12] Eastbiggs—Duric Xerarents—Kimball
 Valley Oak Woodland [12]; savanna on Kimball soils
 Annual Grassland [12]
 Riverine [12]
 Lacustrine, i.e., vernal pools [12]
 Cropland—rice [12] on Eastbiggs soils and on Duric Xerarents
 Orchard—Vineyard—olives, citrus, prunes [12] on Kimball soils

THERMIC SOILS THAT FORMED IN SIERRA NEVADA ALLUVIUM; ON INTERMEDIATE AND HIGH FAN TERRACES IN THE SACRAMENTO VALLEY

Laguna Formation [13]
 [13] Thompsonflat—Oroville—Vistarobles
 Annual Grassland [13]
 Riverine [13]
 Lacustrine, i.e., vernal pools [13]
 Miscellaneous features—cut bank along the Feather River at Highway 70

Feather River Terraces

THERMIC SOILS ON FEATHER RIVER TERRACES IN THE SACRAMENTO VALLEY

Modesto Formation (Modesto-Riverbank Formation) [11]
 [11] Liveoak—Boga—Loemstone
 Valley Oak Woodland—savanna [11]
 Annual Grassland
 Pasture [11]
 Orchard—Vineyard—peaches, nectarines, walnuts, kiwis [11]
 Miscellaneous features—cut banks

Foothills

Northern Sierra Nevada and Southern Cascade Foothills

THERMIC SOILS ON LOVEJOY BASALT AND IONE SEDIMENTS ON SIERRA NEVADA FOOTHILLS

Lovejoy basalt and limited lone sediments) [14]

[14] Palexerults–Rock Outcrop, Basalt–Coalcanyon

Blue Oak Woodland [14]

Annual Grassland [14]

Riverine [14]

Lacustrine, i.e., vernal pools [14]

Miscellaneous features—lava flows, basalt rock outcrops

THERMIC SOILS ON STRATH TERRACES ON VOLCANIC CASCADE FOOTHILLS

Low Tuscan Formation (strath terraces) [15]

[15] Tuscan–Clearhayes–Typic Xerofluvents

Valley Foothill Riparian Forest [15] on Xerofluvents

Annual Grassland [15]

Riverine [15]

THERMIC SOILS ON VOLCANIC CASCADE FOOTHILLS

Low Tuscan Formation—sandstone [16]; mudflow [17]; sandstone and mudflow [18]

[16] Lucksev–Butteside–Carhart

[17] Doemill–Jokerst

[18] Xerorthents, Shallow–Typic Haploxeralfs–Doemill

Ridgetops—annual grasses, scattered blue oak

Canyons: northwest slopes—chaparral; southeast slopes—grasses, blue oak

Savanna—widely spaced trees and/or shrubs

Annual Grassland [16, 17, 18]

Blue Oak Woodland—[16] at the higher elevations, [17] savanna, [18] savanna

Blue Oak–Foothill Pine [18]

Chamise–Redshank Chaparral [18]; limited to the Cohasset Ridge

Mixed Chaparral with scattered blue oak, foothill pine, and interior live oak [18]; limited

Riverine [16, 17, 18]

Lacustrine, i.e., vernal pools [17]

Miscellaneous features—volcanic mudflow rock outcrops

THERMIC SOILS ON METAMORPHIC SIERRA NEVADA FOOTHILLS

Smartville Formation (metavolcanic rock) [19; 20; 21; 22]

[19] Dunstone–Loafercreek–Argonaut Taxadjunct

[20] Dunstone–Loafercreek–Oroshore

[21] Mounthope–Hartsmill

[22] Ultic Haploxeralfs, Thermic, High Terrace

Ridgetops—annual grasses, scattered blue oak

Canyons: northwest slopes—chaparral; southeast slopes—grasses, blue oak

Savanna—widely spaced trees and/or shrubs

Annual Grassland [19, 20, 22]

Blue Oak Woodland—[19] savanna, [22] savanna with scattered shrubs

Blue Oak–Foothill Pine [20, 21]

Mixed Chaparral with scattered blue oak, foothill pine, and interior live oak [20, 21]

Riverine [19, 20, 21, 22]

Lacustrine [20]

Miscellaneous features—metavolcanic rock outcrops

THERMIC SOILS ON PLUTONS ON SIERRA NEVADA FOOTHILLS

Swedesflat Pluton and Bald Rock Pluton (diorite, gabbro, gabbro-diorite rocks) [23]; (quartz diorite) [24]

[23] Flanly–Swedesflat–Parkshill

[24] Crystalhill–Oregongulch–Craigsaddle

Ridgetops—annual grasses, scattered blue oak

Canyons: northwest slopes—chaparral; southeast slopes—grasses, blue oak

Blue Oak–Foothill Pine [23]

Mixed Chaparral with scattered blue oak, foothill pine, and interior live oak [23, 24] and with scattered ponderosa pine and incense cedar [24]

Riverine, i.e., canyon bottoms [23, 24]

Lacustrine [24]

Miscellaneous features—diorite, gabbro, and quartz diorite rock outcrops

MESIC SOILS ON VOLCANIC CASCADE FOOTHILLS

Mid Tuscan Formation (mudflow) [25]

[25] Rockstripe–Ultic Haploxerafals, Mesic–Ultic Haploxerafals

The distribution of vegetation is affected by elevation and precipitation.

* Mixed Chaparral with patches of Annual Grassland (on shallow soils) [25]

Valley Foothill Riparian (canyon bottoms)

Riverine, i.e., canyon bottoms [25]

Miscellaneous features—volcanic mudflow rock outcrops

MESIC SOILS ON METAMORPHIC SIERRA NEVADA FOOTHILLS

Smartville Formation (metavolcanic rock) [26]

[26] Bigridge–Minniecreek

Montane Hardwood–Conifer [26]

Mixed Chaparral with scattered blue oak, foothill pine, and interior live oak [26]

Riverine, i.e., canyon bottoms [26]

Miscellaneous features—metavolcanic rock outcrops

Southern Cascade and Northern Sierra Nevada Mountains

MESIC SOILS ON VOLCANIC CASCADE MOUNTAINS

High Tuscan Formation [27, 28, 29]

[27] Paradiso–Schott–Tuscoll

[28] Mountyana–Beecee–Lydon

[29] Redbone

Ponderosa Pine [27]

Sierran Mixed Conifer [27, 28, 29]

Riverine [27, 28, 29]

Lacustrine [27]

Miscellaneous features—volcanic rock outcrops

MESIC SOILS ON METAMORPHIC SIERRA NEVADA MOUNTAINS

Mixed rocks of metasedimentary, metavolcanic, and ultramafic origin [30, 31, 32, 33]

[30] Surnuf–Griffgulch–Typic Haploxeralfs, Magnesic

[31] Toadtown–Powellton–Rogerville

[32] Obstruction–Obskel–Bottlehill

Ponderosa Pine [30]

Sierran Mixed Conifer [30, 31, 32]

* Ultramafic vegetation—blue oak (some areas in Butte County), foothill pine, Jeffery pine, and McNab cypress (near Magalia); mixed chaparral in areas of ultramafic geology [30]

Wet Meadow (inclusions)

Riverine [30, 31, 32]

Lacustrine [30]

Miscellaneous features—metavolcanic and ultramafic rock outcrops

MESIC SOILS ON PLUTONS IN THE SIERRA NEVADA MOUNTAINS

Concow, Bald Rock, Cascade, Lumpkin, and Grizzly Plutons [33, 34]

[33] Islandbar–Featherfalls–Chawanakee

[34] Bonneyridge–Chawanakee–Lewisflat

Sierran Mixed Conifer [34] on Bonneyridge soils

Ponderosa Pine [35] on Islandbar soils

Montane Riparian [34]

Wet Meadow [34]

Riverine [33, 34]

Miscellaneous features—quartz diorite rock outcrops

MESIC SOILS ON VOLCANIC SIERRA NEVADA MOUNTAINS

Lovejoy basalt [35]

[35] Mudwash–Shakeridge–Timberisland

Sierran Mixed Conifer [35]

Riverine [35]

Miscellaneous features—lava flows

FRIGID SOILS ON VOLCANIC CASCADE MOUNTAINS

Andesitic mudflows [36]

[36] Bonepile

Sierran Mixed Conifer [36]; dominated by white fir

Wet Meadow (inclusions)

Riverine [36]

Miscellaneous features—large andesite boulders on the surface

FRIGID SOILS ON VOLCANIC SIERRA NEVADA MOUNTAINS

Andesitic mudflows [37]

[37] Powderhouse–McNair–Greenwell

Sierran Mixed Conifer [37]; dominated by white fir with some red fir
Riverine [37]

Miscellaneous features—andesite mudflows

FRIGID SOILS ON METAMORPHIC SIERRA NEVADA MOUNTAINS

Metavolcanic rocks [38]

[38] Dejonah–Stagpoint

Sierran Mixed Conifer [38]; dominated by white fir with some red fir
Montane Riparian (inclusions)

Wet Meadow [38]

Riverine [38]

Miscellaneous features—metavolcanic rock outcrops

FRIGID SOILS ON MORAINES IN THE SIERRA NEVADA AND CASCADE MOUNTAINS

Glacial till, including part of the Grizzly Pluton [39]

[39] Haploxerands, Volcanic Till–Haploxerands, Granitic Till

Sierran Mixed Conifer [39]; dominated by white fir with some red fir
Montane Chaparral [39]; limited by fire

Wet Meadow [39]

Riverine [39]

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